

ENVIRONMENTAL ASSESSMENT

For the

Howard Prairie Grazing Allotment Lease Authorization

NEPA #DOI-BLM-OR-M060-2011-0006-EA

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT
ASHLAND RESOURCE AREA

August 2011

Dear Reader:

We appreciate your interest in the BLM's public land management activities. Public involvement for the Howard Prairie Grazing Allotment Lease Authorization began in February 2011 when approximately 74 scoping letters were sent to the public. The scoping letter was sent to residents and landowners near or adjacent to BLM parcels within the planning area, to federal, state, and county agencies, and to private organizations and individuals that requested information concerning projects of this type, inviting them to contact the BLM with information, comments and concerns. Ten comment letters were received, which provided information to BLM for consideration in the environmental assessment (EA).

This project was developed under the 1995 Medford District Record of Decision and Resource Management Plan (RMP).

If you would like to provide us with written comments regarding this Lease Renewal EA, please send them to me at 3040 Biddle Road, Medford, OR 97504. Email comments may be sent to: Medford_Mail@blm.gov.

If confidentiality is of concern to you, please be aware that comments, including names and addresses of respondents, will be available for public review or may be held in a file available for public inspection and review. Individual respondents may request confidentiality. If you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act, you must state this clearly at the beginning of your written comment. Such requests would be honored to the extent allowed by law. All submissions from organizations or officials of organizations or businesses will be made available for public inspection in their entirety.

I look forward to your continued interest in the management of our public lands.

John Gerritsma
Field Manager
Ashland Resource Area

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT

EA COVER SHEET
NEPA #DOI-BLM-OR-M060-2011-0006-EA

RESOURCE AREA: Ashland

ACTION/TITLE: Howard Prairie Grazing Allotment Lease Authorization

LOCATION: T. 38 S., R. 3 E., sections 14 and 23.

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1.0 Introduction

The Bureau of Land Management (BLM), Ashland Resource Area, proposes to renew the 10-year grazing lease on the Howard Prairie Allotment. 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 the Howard Prairie Allotment Grazing Lease on Bureau of Reclamation (BOR) administered lands. The Howard Prairie Allotment is located on BOR land and the grazing lease is managed by the Bureau of Land Management under a Memorandum of Agreement (MOA No. 83-168) dated March 31, 1983. The lands in this lease are withdrawn for reclamation purposes except for the 32 acres of BLM Land in Section 23. In the event these are needed for the specific purposes for which they are withdrawn, they will be cancelled from the lease. The analysis documented in this EA will provide the BLM authorized officer, the Ashland Resource Area Field Manager, with current information to aid in the decision-making process. This EA complies with the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA; 40 CFR Parts 1500-1508) and the Department of the Interior's regulations on Implementation of the National Environmental Policy Act of 1969 (43 CFR part 46).

1.1 Conformance with Land Use Plans and Other Documents:

The actions proposed and analyzed in this EA were developed to be consistent with, and/or tier to the following documents:

1. *Final EIS/ROD for the Medford District Resource Management Plan (RMP) (1995)*
2. *Final Supplemental Environmental Impact Statement and Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (Northwest Forest Plan FSEIS 1994 and ROD 1994)*
3. *Final SEIS for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (2000), and the ROD and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (2001)*
4. *Final Supplemental Environmental Impact Statement: Management of Port-Orford-Cedar in Southwest Oregon (FSEIS 2004 and ROD 2004)*
5. *Medford District Integrated Weed Management Plan Environmental Assessment (1998) and tiered to the Northwest Area Noxious Weed Control Program (EIS 1985).*

In addition to the documents cited above, project planning drew from information and recommendations from the following:

1. Visual Resource Contrast Rating BLM Manual Handbook 8431-1
2. BLM Manual 6840 – Special Status Species Management (2008)
3. Jenny Creek Watershed Analysis (1995)
4. Jenny Creek Water Quality Restoration Plan – Draft (2008)
5. Medford Grazing Management Program EIS (April 1984) and ROD and Rangeland Program Summary (September 1984)

The 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), Endangered Species Act (ESA) of 1973, Clean Water Act (as amended 1972, 1981, 1987 and 2002), Safe Drinking Water Act of 1974 (as amended 1986 and 1996),

Clean Air Act (as amended 1990), Archaeological Resources Protection Act of 1979, Taylor Grazing Act (TGA) of 1934, Public Rangelands Improvement Act of 1978, and National Environmental Policy Act of 1969.

1.2 Purpose of and Need for 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.” *Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington* meet 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 (RHA) was completed in 2009 for the Howard Prairie Grazing Allotment and is available on BLM’s website: <<http://www.blm.gov/or/districts/medford/plans/inventas.php>>. The goal of the RHA is to assess whether or not the conditions and trends present in the allotment meets the Standards for Rangeland Health. A preliminary determination on the results of the assessment find that three of the five standards, Upland Watershed Function, Ecological processes, Native, T & E, and Locally Important Species were being met. The Standards for Riparian/Wetland Watershed Function and Water Quality are not being met; however, the current livestock grazing authorization were determined to not be a major contributing factor. The preliminary findings documented in the resulting draft Howard Prairie Allotment Rangeland Health Determination provided a basis for formulating the agencies alternatives for renewing the grazing lease.

1.3 Decision Factors

This Environmental Assessment will provide the information needed for the authorized officer, the Ashland Resource Area Field Manager, to select an alternative for managing grazing in the Howard Prairie Grazing Allotment. The Ashland Resource Area Field Manager must decide which alternative to implement, including the No Action alternative. In choosing an alternative, the Field Manager will consider how well the alternative responds to the identified project need, along with the relative merits and consequences of each alternative related to the relevant issues.

The forthcoming decision record will document the authorized officer’s rationale for selecting a course of action based on the effects documented in this EA. The decision will also include a determination of whether or not the impacts of the alternatives 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 impacts are significant or unknown then a project specific Environmental Impact Statement (EIS) must be prepared.

1.4 Issues

Public comments and BLM’s interdisciplinary team raised a variety of issues and concerns during project scoping. In this EA, an issue is something unique to the project area that may need particular

consideration and which may contribute to defining a particular action alternative. Alternatives considered, but not analyzed in detail are explained in section 2.4. Issues include:

- Jenny and Grizzly Creeks are listed by ODEQ as water quality limited for exceeding summer high temperature standards. Grazing riparian vegetation on perennial channels contributes to high summer water temperatures.
- Historical Values within the Howard Prairie Grazing Allotment
- Ground nesting birds

2.0 Alternatives

This chapter describes the No Action Alternative, a No Grazing Alternative, and a modified lease alternative, 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 leases, 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.

Common to All Grazing Alternatives

Grazing Management

It is mandatory under all alternatives that Terms and Conditions would be met by the lessee. If it is determined by the BLM at any time that the lessee is not meeting their required Terms and Conditions, corrective measures would be implemented. Corrective measures would include consulting with the responsible lessee and may include withholding the annual use authorization, temporary or permanent reductions in AUMs or lease cancellation. Failure to maintain 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*.

In general grazing utilization across the allotment is moderate (40-60%) near the reservoir and slight to light (10-39%) away from the reservoir. Incidental grazing by horses (unauthorized use) near the Lilly Glen Equestrian Park and trail riding by equestrian park users has resulted in trail formation and stream fords across Grizzly Creek, and areas of moderate grazing use near the park. Use of these trails and fords by cattle does occur but as the area is relatively flat, cattle are not limited in movement and are not a significant contributing factor for trails or stream crossings.

Horse trails cross the allotment boundary via gates in fences at two locations. Gates and the fence along the south boundary of the allotment that divides the Howard Prairie Allotment from the Deadwood Allotment were upgraded in 2009. The maintenance was done to help manage incidental unauthorized use coming from the Deadwood allotment and to facilitate better gate closure by equestrian park users. Follow-up observations indicate that the gate and fence improvements have been successful at stopping trespass from the adjacent Deadwood grazing allotment.

Fences on the west and northwest sides of the allotment are owned by or are the responsibility of private land owners or are the maintenance responsibility of the Jackson County Department of Transportation. These fences are not entirely functional at this time and occasional livestock trespass occurs but is very rare because adjacent properties where unauthorized livestock come from are fenced. Negotiations with adjacent land owners and the Jackson County Department of Transportation are ongoing in an effort to make repair to these fences.

Monitoring

As funding and priorities allow, periodic monitoring would be conducted to ensure management objectives are met or moving toward meeting the *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*.

Cultural Resources

Prior to any new range improvements under this renewal, or routine maintenance activities which involve ground disturbance, a cultural resource survey would be completed and site-specific protection measures would be implemented to preserve the integrity of all recorded cultural sites.

2.1 Alternative 1: No Action

Under the No-Action Alternative, the grazing lease on the Howard Prairie 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 to sustain one animal unit, defined as one cow/calf pair, single cow, heifer, steer, or bull, for a period of one month. Total AUMs represent the number of animal units (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 to continue livestock grazing during the permitted season with 60 animal units from October 16 to November 15 totaling 61 AUMs. The analysis area is 320 acres.

Terms and Conditions

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.

- Leases may be withdrawn if necessary to meet a court mandated requirement for state certification under Section 401 of the Clean Water Act.
- Season of use to improve goose nesting and brooding success & eliminate competition with recreational use at Lily Glen.
- Turn-out will be based upon range readiness
- Actual use reports are to be returned within 15 days of the off-date
- Maintenance of assigned range improvements is a requirement of the lease
- A completed application/preference statement must be submitted prior to the grazing season each year
- Billings are due upon receipt and must be paid prior to turn-out
- Late payment may result in unauthorized use, late fees and/or interest penalty
- BLM approved ear tags are a requirement of lease

Range Improvements & Maintenance

There are currently two rangeland improvement projects in and surrounding the Howard Prairie Allotment. Under the No Action Alternative, the lessee would continue to be responsible for maintaining the Howard

Prairie fence, Range Improvement Project #750126 and the BLM would maintain the Dead Indian Cattle guard, Range Improvement Project #750045 (see Appendix A Range Improvement Map).

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 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.

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.

2.2 Alternative 2

Alternative 2 was developed to make progress towards meeting Standard 2: Watershed Function - Riparian/Wetland Areas and Standard 4: Water Quality, the current livestock authorization was determined not to be a major contributing factor. A riparian area that was identified as not meeting the Rangeland Health Standards may be protected from grazing and additional terms and conditions of the lease would ensure progress towards meeting the Rangeland Health Standards within the time permitted.

Grazing Management

Under Alternative 2, grazing lease AUM levels and seasons-of-use would not be modified. The existing grazing lease for the Howard Prairie Allotment authorizes 61 active AUMs from October 16 to November 15.

Potential Mitigation Measures

- An enclosure would be constructed around a stretch of Grizzly Creek in 38S 3E NE ¼ NE ¼ Section 14 in an area that is accessible to cattle and horses.
- A hardened crossing would be placed in Grizzly Creek to prevent bank erosion at a location where horses and cattle cross the creek. This project would be implemented with agreement from the Bureau of Reclamation, Jackson County Parks, and recreational user groups of the Lily Glenn Equestrian Park.

Terms and Conditions

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:

- Actual use reports are to be returned within 15 days of off-date.
- Maintenance of assigned range improvements is a requirement of lease and must be done prior to livestock turn-out.
- In the event of adjacent allotment closure, the lessee will assume all maintenance responsibilities for Howard Prairie boundary fences.
- 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 Improvements & Maintenance

Under this alternative, maintenance of range improvement project # 7500126 and Range Improvement Project #750045 would be the responsibility of the lessee. In addition, if one or more of the potential mitigation measures above is selected the maintenance for that range improvement project would be the responsibility of the lessee. A detailed description of fence maintenance and penalties is included under Alternative 1, above.

2.3 Alternative 3

This alternative would rest the Howard Prairie allotment for a period of 10 years. This alternative would serve to speed up the recovery of ecological conditions on BLM-administered lands impacted by past grazing where the potential for recovery exists.

Grazing Management

In accordance with 43 CFR 4110.3-3, active use of the allotment would terminate at the close of the 2011 grazing season.

Terms and Conditions

No Terms or Conditions would be required as no lease authorizations to graze would be issued.

2.4 Alternatives Considered but Eliminated

- An alternative that reduced the number of AUMs was considered.
- An alternative that would limit use to every other year was considered.
- An alternative that would require fencing Howard Prairie Lake from the allotment was considered.

These alternatives were not analyzed in further detail because the current livestock grazing on the Howard Prairie allotment is not a significant contributing factor for not meeting Rangeland Health Standards 2 and 4. Reducing the level of grazing authorized within the allotment is not warranted at this time.

3.0 Environmental Consequences, Including Cumulative Effects

This section provides the basis for the comparisons of the alternatives and the reasonably foreseeable environmental consequences to the human environment of the proposed action. These consequences can be beneficial, neutral, or detrimental. This analysis considers both the direct effects that are caused by the action and would occur at the same place and time, and the indirect effects that are caused by the action, but would occur later in time or offsite (40 CFR 1508.8).

Information on the current environmental condition is comprehensive and more accurate for establishing a baseline condition for a cumulative effects analysis than attempting to establish such a starting point by adding up the effects of individual past actions. This would provide a list of effects without addressing the changes or improvement in conditions since the action originally occurred; unlike current conditions, past actions and perceived effects can no longer be verified by direct examination.

Therefore, the affected environment and No Action effects section for each resource incorporates the current condition, and past present and reasonably foreseeable actions. Following the Code of Federal Regulations and CEQ guidance, the effects sections add the anticipated effects of this project to the current conditions, resulting in the cumulative effects analysis for the project.

Cataloging and analyzing other present and reasonably foreseeable actions relevant to the effects of the proposed action *is* necessary; they are described below. These actions are incorporated into the affected environment and No Action alternative descriptions in each resource section.

When encountering a gap in information, there is an implicit question in the Council on Environmental Quality regulations on incomplete and unavailable information: is this information “essential to a reasoned choice among the alternatives?” (40 CFR §1502.22[a]). While additional information would often add precision to estimates or better specify a relationship, the basic data and central relationships in the analysis in the EA are sufficiently well established that any new information would not likely reverse or nullify understood relationships. Although new information would be welcome, the team did not identify any missing information as essential for the Decision Maker to make a reasoned choice among the alternatives.

The planning team weighed the scientific evidence offered through public comment, as well as that gathered by each resource specialist. Environmental consequences of each alternative were analyzed utilizing the best scientific data available, knowledge of on-the-ground conditions, and professional expertise of each member of the planning team.

Lily Glen Equestrian Park

Lily Glen Equestrian Park was originally homesteaded around 1898 as a 181 acre ranch. The land was acquired by the Bureau of Reclamation and the construction of Howard Prairie Reservoir, around 1960, inundated extensive acres of the former ranch's high mountain summer range grazing. The equestrian park is currently leased and maintained by Jackson County Parks from U.S. Bureau of Reclamation. The park has 32 corrals, 14 camp sites, vault toilets, tables, fire pits and water pumps. Equestrian uses such as dressage, endurance races, cart driving, trail riding, hunter jumper, cutting, and four-H are primary uses. Other uses include fishing, hunting, and camping. <http://www.lilyglenbarn.org/info.htm>

3.1 Water Resources

3.1.1 Affected Environment

This allotment lies within the Grizzly Creek watershed, which drains to Jenny Creek and ultimately the Klamath River. The allotment occupies the upper portion of Howard Prairie Reservoir, a portion of which is seasonally inundated. There are approximately 1.7 miles of perennial and 2.6 miles of intermittent and ephemeral streams on BLM/BOR managed land within the allotment. In addition, there is approximately 0.1 miles of perennial and 0.4 miles of intermittent/ephemeral located on private land. With the exception of Grizzly Creek, all the streams are unnamed. All streams in the allotment ultimately drain into Howard Prairie Reservoir. Elevation within the allotment ranges from 4,560 to 4,600 feet. Cool wet winters, and hot dry summers characterize the climate. During the winter months, the moist, westerly flow of air from the Pacific Ocean results in frequent storms of varied intensities. Winter precipitation usually occurs as snow, which ordinarily melts during the spring runoff season from April through June. Average annual precipitation within the allotment is approximately 32 inches.

Of the 4.3 stream miles, 0.64 miles (3,379 feet) have been assessed for PFC: 1,689 feet (51%) were rated Functional at Risk with an upward trend (improving), 106 feet (3%) are Functional at Risk with a downward trend (degrading), and 1,584 feet (46%) are Non Functional. Additionally, a spring found on BOR land was rated as Non-Functional. Surveys also showed 47% of the stream reaches had high fine sediment levels (greater than 30%). Grazing, horse traffic, and augmented flows from the canal were identified as reasons for the non-functional ratings.

3.1.2 Environmental Consequences

Because no new management is proposed under Alternative 1, the effects described reflect the direct and indirect impacts shaped by ongoing management including the current Howard Prairie Allotment grazing lease. Discussion for Alternative 2 reflects the direct and indirect impacts of authorizing a new version of the Howard Prairie Allotment grazing lease. Discussion for Alternative 3 evaluates the direct and indirect consequences of eliminating grazing on the Howard Prairie Allotment. Effects discussions also include cumulative impacts of those direct/indirect actions when added incrementally to actions past, present, and reasonably foreseeable.

Grizzly Creek for 3 miles below Howard Prairie Reservoir to its confluence with Jenny Creek is listed as water quality impaired, 303(d), for exceeding summer temperature criteria (ODEQ 2010). Since water originating within and above the allotment is stored in Howard Prairie Reservoir and released for irrigation and other purposes, grazing has no effect on stream temperatures within the listed reach of Grizzly Creek.

Water quality impacts within the allotment have been documented in recent stream surveys. Channel incision and bank instability, particularly in the northeast portion of the allotment were noted in surveys conducted in October, 2006. There are also numerous springs present. Stream surveys in 2006 identified adverse impacts from grazing, horse use, and additional water delivered to upper Grizzly Creek from the South Fork Canal. A field visit by hydrology and fisheries staff in July 2011, prior to the fall 2011 grazing season, documented equestrian use and impacts to the streambanks downstream of the Lily Glen wooden footbridge. Residual impacts from the previous grazing season, primarily cattle trails in the bank-slumped areas upstream of the footbridge were also noted. The majority of the Grizzly Creek stream channel is incised above the wooden footbridge. Vertical banks are common along much of this reach.

Ground disturbance and vegetation consumption in the riparian area associated with the Lily Glen Equestrian Park affect water quality and functionality of the streams within the Howard Prairie grazing

allotment. Gates that are left open by park users have effects on rangeland health because livestock from the neighboring Deadwood grazing allotment access and use the Howard Prairie grazing allotment outside the authorized season of use.

Alternative 1 (No Action)

Under the no action alternative, streambank erosion and channel down-cutting on Grizzly Creek would continue as a result of augmented flows, cattle, and horse impacts. The conveyance of water from the South Fork Canal to Howard Prairie Reservoir via Grizzly Creek would affect the timing, duration, and intensity of streamflows in the portion of Grizzly Creek that flows through the allotment. This would continue to maintain degraded channel conditions. Grazing would continue to exacerbate the effects of this water diversion system by continuing to break down streambanks both through physical hoof action and consumption of vegetation on the streambanks. The stream crossings utilized by cattle and horses in the lower portions of the allotment would continue to increase fine sediment into the stream channel.

Alternative 2

Under this alternative, the upper portion of Grizzly Creek in T 38 3E section 14 (from the confluence with the South Fork Canal down to the Lily Glen wooden footbridge) may be fenced so that cows and horses would be excluded from this riparian area. Fencing this area would allow the recovery of riparian vegetation. Riparian vegetation plays an important role in shaping channel morphology, resisting erosive high flows, and maintaining floodplain roughness that dissipates erosive energies. Over the long term, shrub composition would increase in number and size, adding long-term stability and shade to the creek in the fenced area. Riparian and aquatic habitat conditions in this section of Grizzly Creek would improve as bank trampling and associated sediment would be eliminated as the stream banks become vegetated. Progress would be made toward meeting Standard 2 (Watershed Function) and Standard 4 (Water Quality). Fencing this area would improve conditions in Grizzly Creek. However, the augmented flows in the Grizzly Creek channel from the South Fork Canal to Howard Prairie Reservoir will maintain the channel in its overall degraded condition.

The current crossing location is shallow and flat with a fine substrate base. Hardening this crossing would decrease the amount of fine sediment disturbed each time the crossing is used and would also provide a stable and useable location for animals to cross and/or drink water. Providing a hardened crossing would also focus use on this armored area, relieving use along other stretches of Grizzly Creek. Fencing off the upper riparian area will also shift use toward the armored crossing where there will be the least impact to the streambanks.

Alternative 3

This alternative would rest the Howard Prairie allotment for a period of 10 years. This alternative would speed up the recovery of ecological conditions on BLM-administered lands impacted by past grazing where the potential for recovery exists. Eliminating cattle grazing from this allotment would improve riparian condition habitat over both the short and long term. Equestrian use would continue but removal of cattle would improve riparian conditions because of the reduced number of grazers in the pasture late in the season. Trampling and fine sediment levels would decrease and riparian and woody vegetation conditions would improve. Removing cattle from the allotment would improve the condition of woody vegetation and would alleviate one of the stressors to the system. However, under this alternative the large shallow stream crossing would remain unarmored and no enclosure would be built. Recreational horse use would continue to release fine sediment into the stream channel at the main crossing. There would be no enclosure upstream of the wooden footbridge and horse use could degrade streambank stability in this

upstream area. The South Fork Canal would continue to operate under this alternative, maintaining unnatural channel and flow conditions and the associated degradation.

3.2 Fisheries and Aquatic Wildlife

3.2.1 Affected Environment

Aquatic Species

Fish

Jenny Creek redband trout are the only Bureau Sensitive Fish Species within the allotment boundary. The Oregon Department of Fish and Wildlife categorize the Jenny Creek redband trout population as “vulnerable” and the Bureau of Land Management lists the Jenny Creek redband trout as “sensitive” on the Special Status Species List (USDI 2008). These fish are found in Howard Prairie Lake, the South Fork Canal and Grizzly Creek. Currently, the redband trout population in this area is in poor condition due to genetic dilution from hatchery fish released into the lake. Redband trout need cool water temperatures, hiding cover, clean spawning gravels, rearing pools, and an adequate food supply for good fish production.

In the Klamath River system, Southern Oregon/Northern California (SONC) coho salmon (*Oncorhynchus kisutch*), a “threatened” species under the Endangered Species Act (ESA) and Klamath Mountain Province steelhead (*Oncorhynchus mykiss*), a “sensitive” species on the Final Interagency Special Status/Sensitive Species List (USDI, 2008), and chinook salmon (*O. tshawytscha*) are restricted to habitat below Irongate Reservoir located approximately 18 miles downstream of the Howard Prairie Allotment.

Macroinvertebrates

Within the Jenny Creek Watershed, downstream of the allotment boundary, there is one “sensitive” pebblesnail species (*Fluminicola* n. sp. 10) and three “strategic” species (*Fluminicola* n. sp. 11, 14, and 16).

Fish Habitat Condition

Overall the fish bearing streams within the allotment were found to be in poor condition (See section 3.1). The South Fork Canal was not given a rating because it is not considered a stream. The canal is a manmade ditch that transfers water from South Fork Little Butte Creek to Howard Prairie Lake. The South Fork Canal flows into Grizzly Creek in the upper northeast corner of T38 3E section 14 and augments the flow in Grizzly Creek for much of the year. Stream surveys noted unstable banks and active bank erosion on Grizzly Creek resulting primarily from the canal contribution. Cattle and horse grazing cause concentrated bank disturbance and channel widening at two locations along the channel. Shade is lacking along this reach of Grizzly Creek.

3.2.2 Environmental Consequences

Alternative 1 (No Action)

Under the no action alternative, down cutting and channel erosion on Grizzly Creek (above Howard Prairie Lake) would continue as a result of augmented flows and cattle and horse impacts. The unnatural flow regime in the Grizzly Creek channel and Howard Prairie Reservoir itself would continue, maintaining the site in a degraded channel condition. Grazing would continue to exacerbate the effects of this water diversion system by continuing to break down banks, increasing bare dirt and fine sediment at the two crossings.

Alternative 2

Under this alternative, a portion of Grizzly Creek in T 38 3E section 14 may be fenced so that cows and horses would be excluded from this riparian area. In the short term (1-3 years), the fenced stream banks would begin to stabilize as woody vegetation increases. Over several years, riparian vegetation would reestablish, increasing the capacity to trap sediment and protect stream banks. Shrub composition would increase in number and size, adding long term stability and shade to the creek in the fenced area. Shrub recovery can be dramatic following the elimination of livestock grazing (Platts and Rinne 1985, Elmore and Beschta 1987). Riparian and aquatic habitat conditions in this section of Grizzly Creek would improve as bank trampling and associated sediment would be eliminated as the stream banks become vegetated; however continued use of the canal would maintain the channel in its overall degraded condition.

The current crossing location is shallow and flat with a fine substrate base. Hardening this crossing would decrease the amount of fine sediment disturbed each time the crossing is used and would also provide a stable and useable location for animals to cross and/or drink water. Providing a hardened crossing would also focus use on this armored area, relieving use along other stretches of Grizzly Creek.

Alternative 3

Under this alternative, grazing would be terminated on the Howard Prairie Allotment. Eliminating cattle grazing from this allotment would improve habitat over both the short and long term. Under this alternative, equestrian use would continue but removal of cattle would improve aquatic habitat conditions because of the reduced number of grazers in the pasture late in the season. Trampling and fine sediment levels would decrease and riparian and woody vegetation conditions would improve. Removing cattle from the allotment would improve the condition of woody vegetation and would alleviate one of the stressors to the system. The canal would continue to operate under this alternative, maintaining unnatural channel and flow conditions.

Coho Critical Habitat (CCH)

This allotment is not within Coho Critical Habitat (CCH) and would not impact coho or CCH at the site level or at the larger 5th field scale.

Aquatic Conservation Strategy (ACS)

The Northwest Forest Plan's (NWFP) Aquatic Conservation Strategy (ACS) has four components: Riparian Reserves, Key Watersheds, Watershed Analysis, and Watershed Restoration. It is guided by nine objectives which are meant to focus agency actions to protect ecological processes at the 5th-field hydrologic scale, or watershed, at the 6th and or 7th fields (subwatershed and or drainage), and at the site level. The Howard Prairie Allotment is almost entirely within the Jenny Creek Watershed. The Jenny Creek Watershed is a Tier 1 Key Watershed.

1. Riparian Reserves: Riparian Reserve widths for streams, springs, wetlands, and unstable soils have been determined according to the protocol outlined in the NWFPs Aquatic Conservation Strategy. Riparian Reserves receive no special protection from grazing.

2. Key Watersheds: Tier 1 Key Watersheds contribute directly to conservation of at-risk anadromous salmonids, bull trout, and resident fish species. They also have a high potential of being restored as part of a watershed restoration program. The Jenny Creek was designated as Tier 1 Key Watersheds under the 1995 Medford District Resource Management Plan.

3. Watershed Analysis: Watershed Analysis has been completed for the Jenny Creek Watershed.

4. Watershed Restoration: Most of the restoration activities in the watershed have focused on restoring fish passage to provide better access to habitat on upstream private and federal lands. Projects by the local watershed council, ODFW and/or BLM include culvert removal and replacement, road decommissioning, dam removal, large wood supplementation, riparian planting, and irrigation ditch fish screens and siphoning.

Evaluation of the Proposed Action's consistency with Northwest Forest Plan Aquatic Conservation Strategy objectives

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

Topography, slope, forest fire regime, climate, and the distribution of soil types and plant communities are some of the landscape-scale features affecting aquatic systems in the Howard Prairie Allotment. Fencing Grizzly Creek and the wetland in T38 R3E section 14 would allow vegetative re-growth to occur, increasing vegetation capacity to trap sediment and protect stream banks. The spring habitat within the proposed fenced area would see marked improvement in this alternative, improving habitat for aquatic organisms at the site level scale. However, any benefits would be of insignificant magnitude to benefit this objective at a large scale.

2. Maintain and restore spatial and temporal **connectivity** within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

There are no physical or chemical barriers to aquatic organisms that are associated with livestock grazing.

3. Maintain and restore the **physical integrity** of the aquatic system, including shorelines, banks, and bottom configurations.

The physical integrity in this allotment is primarily affected by water augmentation from the canal. Renewing the grazing lease would maintain the current condition. Fencing Grizzly Creek (Alt. 2) and removing grazing (Alt. 3) would slightly improve the physical integrity of the aquatic system at the site scale, as eliminating grazing is shown to improve shrub growth and channel stability.

4. Maintain and restore **water quality** necessary to support healthy riparian, aquatic and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Alternative 1, 2, and 3 would have no effect on water temperature because shade would be maintained or improved along all stream channels. There would likely be reductions in both sediment and nutrient inputs in Grizzly Creek within the allotment. This would ultimately benefit aquatic systems at least at the site scale, and perhaps at the drainage scale. The beneficial effects of these actions would be unnoticeable at

the large spatial scale of the watersheds, due to continuing water quality problems from historical and present-day activities.

5. Maintain and restore the **sediment regime** under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

See # 3 above. Any reduction in sediment inputs at site scales is unlikely to be measurable at the drainage scale.

6. Maintain and restore **instream flows** sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

None of the alternatives would affect this objective at any scale.

7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

Fencing off Grizzly Creek and the wetland portion of the meadow in T38 3E section 14 would help restore the meadow and help sustain riparian and aquatic habitat. Fencing this area would cause an immediate uptrend within the creek and the small wetland area along Grizzly Creek.

8. Maintain and restore the **species composition** and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

Fencing off the Grizzly Creek would effectively eliminate riparian cattle grazing from those areas. Any benefit would be limited to very small locales, and unlikely to influence the parameters of this objective.

9. Maintain and restore **habitat** to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

See objectives # 3, 4, 5, and 8. Site level benefits to aquatic and riparian habitat would, at a minimum, maintain populations of native plant, invertebrate, and vertebrate dependent species at particular sites. The amount of habitat affected would be insignificant to be beneficial to the watersheds compared to the past and ongoing degradation that has impacted habitats.

3.3 Terrestrial Wildlife

Wildlife Habitat

The Howard Prairie allotment is located on the Dead Indian Plateau in the Southern Cascades Ecoregion. The Plateau is a gentle sloping area of about 100,000 acres and has cold, snowy winters that alternate with hot, dry summers. At an average elevation of 4700 feet, the area is subject to frost 10 months of the year. White fir constitutes the dominate tree in much of the area, but there is a mixture of conifer species in most of the stands. The Plateau forests are uneven aged due to past fire regimes and timber management activities. Shrub density is low, but grasses and forbs are abundant and dense. Other prominent habitat features on the Plateau are the expansive network of meadows and large reservoirs, Howard Prairie and

Hyatt Lakes. Within the allotment itself, the stand is dominated by white fir and Douglas fir with a fair representation of ponderosa pines for the western part of the Plateau. Adjacent to this forest community is meadow habitat that is seasonally flooded from water retention behind the Howard Prairie Reservoir dam. Additional important wildlife habitat features present are snags and large coarse woody debris.

Table 3-1. Plant communities in the Howard Prairie allotment

Sub-Ecoregion	Potential Plant Communities	Represented Community
South Cascades	Mixed Douglas-fir and Ponderosa Pine Forest; Mixed Fir and Hemlock Forest; Subalpine Meadows at Higher Elevations	Mixed Fir Pine Forest Subalpine Meadow

Grazing occurs throughout all of the represented plant communities in the allotment. The potential 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 meadow 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 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 can also reduce 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.

Species of Concern

Species of Concern are those species that are federally listed as threatened or endangered; proposed or candidates for federal listing as threatened or endangered; are BLM designated sensitive species; or are listed as Survey and Manage species under the Northwest Forest Plan. These species require special management consideration to promote their conservation and reduce the likelihood and need for future listing under the Endangered Species Act of 1973 (ESA). For the purposes of this document, the US Fish and Wildlife Service Birds of Conservation Concern and Game Birds Below Desired Condition will also be included as Species of Concern. The table below lists only those species whose suitable habitat is present and are known or suspected to occur proximate to the allotment (see Table 3-2). Species determined to have a very low likelihood of occurring in the area or whose presence would be considered incidental, were not included in this analysis.

Table 3-2. Species of Concern Known or Suspected to Occur in the Howard Prairie Allotment

Species	Scientific Name	Status ¹	Occurrence ²
northern spotted owl	<i>Strix occidentalis caurina</i>	FT	Suspected
bald eagle	<i>Haliaeetus leucocephalus</i>	BS	Known
great gray owl	<i>Strix nebulosa</i>	SM	Suspected
fisher	<i>Martes pennanti</i>	FC,BS	Known
fringed myotis (bat)	<i>Myotis thysanodes</i>	BS	Habitat
pallid bat	<i>Antrozous pallidus</i>	BS	Habitat
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BS	Habitat

band-tailed pigeon	<i>Patagioenas fasciata</i>	GBBDC	Suspected
flamulated owl	<i>Otus flammeolus</i>	BCC	Habitat
rufous hummingbird	<i>Selasphorus rufus</i>	BCC	Suspected
purple finch	<i>Carpodacus purpureus</i>	BCC	Suspected
olive-sided flycatcher	<i>Contopus cooperi</i>	BCC	Suspected
mourning dove	<i>Zenaida macroura</i>	GBBDC	Suspected
wood duck	<i>Aix sponsa</i>	GBBDC	Habitat
mallard	<i>Anas platyrhynchos</i>	GBBDC	Known
white-headed woodpecker	<i>Picoides albolarvatus</i>	BS	Habitat
Siskiyou short-horned grasshopper	<i>Chloealtis aspasma</i>	BS	Habitat
Johnson's hairstreak (butterfly)	<i>Callophrys johnsoni</i>	BS	Habitat
Siskiyou hesperian (snail)	<i>Vespericola sierranus</i>	BS	Habitat
travelling sideband (snail)	<i>Monadenia fidelis celuthia</i>	BS	Habitat
Oregon shoulderband (snail)	<i>Helmithoglypta hertleini</i>	BS,SM	Habitat
chase sideband (snail)	<i>Monadenia chaceana</i>	BS,SM	Habitat
mardon skipper (butterfly)	<i>Polites mardon</i>	FC, BS	Habitat
northwestern pond turtle	<i>Actinemys marmorata marmorata</i>	BS	Suspected
1.Status: FT= Federally threatened under the ESA FC= Federal candidate under the ESA BS= Bureau sensitive species SM= Survey and Manage species GBBDC= Game bird below desired condition BCC= Birds of conservation concern		2.Occurrence: Known= Species is known to occur in project area. Suspected= Reasonable potential for species to occur in the project area. Habitat= Less probable for species to occur but suitable habitat was found in the project area and is within the known or suspected range of the species.	

Wildlife Species Not Adversely Affected By Grazing

Most of the species found in the allotment are not adversely affected by grazing. 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. Plus, the grazing period for this allotment is in the fall when these species are; not breeding, starting to hibernate, or migrating to lower elevations or latitudes. Most of these species are primarily associated with the mosaicked mixed-conifer communities or edges of the associated forest.

There are no known locations for **northern spotted owls** within this allotment but dispersal habitat is present. The nearest known spotted owl location is over 3 miles away. Northern spotted owls are unlikely to be affected by the current livestock grazing because their preferred habitat is dense forest where livestock seldom forage.

Bald eagle nests are known to be located near Howard Prairie Lake and may, on occasion, occur within this allotment, but are unlikely to be impacted by grazing as neither their treetop nest sites nor the fish and waterfowl upon which they feed are subject to significant impacts from grazing.

Great gray and flammulated owls are not known to occur in the allotment but suitable habitat exists. They nest in snags and cavities in mature forests where grazing pressure is insignificant and has minimal effect on their prey base (rodents and insects). Flammulated owls are highly migratory and would have left the allotment area before the grazing period. Thus, effects of grazing on these species would be negligible.

Fisher presence has been confirmed near the Howard Prairie Allotment. Fisher are unlikely to be impacted by grazing as they primarily utilize forested areas and depend upon large wood for denning sites, and small to medium sized mammals for prey. Denning sites and prey species are unlikely to be impacted by grazing.

Pallid Bat, Fringed Myotis and Townsend's big-eared bats are associated with a variety of habitats including conifer forests and oak-woodlands. They forage primarily on flying insects, and roost in mines, caves, abandoned buildings, and crevices and cavities in large trees. Due to their foraging and roosting habits, impacts from grazing are insignificant.

Band-Tailed Pigeons, purple finches and olive-sided flycatchers primarily nest in the canopy of conifer forests (Marshall et al. 2003). These species feed on fruits of trees, seeds and insects that are unaffected by grazing. The effects of grazing would negligible to these species because of the minimal impact to nesting structures, the ample foraging opportunities and the late grazing period in this allotment.

Mourning doves are granivorous and feed almost entirely on ground. They avoid tall vegetation and seldom feed where ground litter makes it difficult to find food. Grazing could reduce to amount of seed that reaches the ground but it can also open more foraging opportunities by reducing the height of vegetation. The grazing period is outside the mourning dove's breeding season so there is no threat of ground nests being trampled.

Wood ducks nest in tree cavities near open water but have been known to nest up to 2k away from water. They are omnivores and feed on seeds, fruits, terrestrial and aquatic invertebrates. Grazing would have no effect on nesting structures and only a negligible effect to the availability of seed forage, which makes up a fraction of the wood duck's diet.

Wildlife Species That May Be Negatively Affected By Grazing

Some species of concern 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 **northwestern pond turtle** is not known to occur in the allotment even though the area is near the elevational range for pond turtles and suitable 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.

The **Siskiyou short-horned grasshopper** is known to occur 3 miles from the Howard Prairie allotment. It is often associated with blue elderberry for the egg-laying phase of its life cycle, but may use other suitable shrub species as well. Suitable habitat occurs at many locations within the Howard Prairie Allotment. Siskiyou short-horned grasshoppers are actively feeding and reproducing from July through September.

The **Mardon skipper** butterfly is a small, tawny-orange butterfly dependent upon native, fescue-dominated grasslands in Washington, Oregon, and northwest California (Black et al. 2002). They are not

known to occur in the allotment but there is a documented site 2 miles away and eleven other locations on the Ashland Resource area. The short, open structure of native, fescue bunchgrass areas in grassland savannah landscapes allows Mardon skippers to readily access both nectar and oviposition plants. Adults typically emerge between May and July, but possibly later at higher elevations. Mardon skippers are univoltine, completing one life cycle annually. Individuals live between five days and two weeks (Kerwin and Huff, 2007).

The **Johnson's hairstreak** butterfly is dependent on conifer mistletoe for egg-laying and for food in its larval stage. They are considered the only old-growth obligate butterfly. The host plants are dwarf mistletoes (*Arceuthobium campylopodum*) and other mistletoes (including *Arceuthobium tsugense*). It spends much of its lifespan in and near the tops of conifer trees, although it descends to ground level for nectaring and to visit moist muddy areas (Pyle 2002). Adults sip flower nectar from a variety of shrubs and plants (including Oregon grape, Pacific dogwood, ceanothus, pussy paws, and bramble species). The nearest known site is near Moon Prairie, approximately 3 miles away.

Rufous hummingbirds are the most widely-distributed hummingbird in North America. They nest well hidden in a variety of plants and sites including shrubs and drooping lower branches of trees. Like many other hummingbirds, they drink nectar from flowering plants and prey upon small insects in midair or by foraging on plant surfaces.

Mallards usual nest sites are in uplands close to water in a wide variety of situations with dense cover, including grasslands, marshes, bogs, riverine floodplains, dikes, roadside ditches, pastures, cropland, shrubland, fencelines, rock piles, forests, and fragments of cover around farmsteads. Distance to water depends on distribution of wetlands and suitable nest cover. Mallards are the most abundant and widespread duck species in North America.

The terrestrial mollusk species, **traveling sideband**, **chase sideband**, **Oregon shoulderband** and **Siskiyou hesperian**, are not known to occur but suitable habitat is present and the allotment is within their suspected ranges. Although very little is known regarding the ecology of these species, they are commonly associated with moist areas. These species generally use rock substrate, large woody debris and logs as refugia and cover during the dry months.

There is little diet overlap between livestock and **deer** with greater overlap of preferred forage between livestock and **elk**. There is a tendency of both deer and elk to avoid areas being overgrazed by cattle (Hosten, P. E. et al. 2007). Grazing in this allotment reduces forage, but, due to the small size and proximity to other suitable forage, it is unlikely to affect native ungulate populations or movements.

3.3.2 Environmental Consequences

Alternative 1 (No Action)

Under the No-Action Alternative, the grazing lease on the Howard Prairie 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.

Potential Effects of Grazing to Terrestrial Wildlife

Livestock grazing primarily impacts wildlife by changing vegetation composition, structure, and function. Although less likely, direct mortality from trampling is possible. Livestock operations 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 and other wildlife species dependent on ground cover for protection, food, and breeding sites. Grazing can also reduce water quality in seeps, springs, and streams used by native wildlife. The presence of livestock can change local distribution and habitat use by native species due to interspecific behavioral traits. Currently, grazing occurs in all of the vegetation communities and condition classes in the allotment, but is most prevalent in the grassland/meadow and the riparian area of Grizzly Creek (see Fisheries and Aquatics section for more info).

Wildlife Species Not Adversely Affected by Grazing

Most of the species of concern found in the allotment are not adversely affected by grazing. The suite of species that would not be affected or affected only to a negligible degree includes the following: **northern spotted owl, bald eagle, great gray owl, fisher, fringed myotis, pallid bat, Townsend's big-eared bat, band-tailed pigeons, flammulated owl, purple finch, olive-sided flycatcher, mourning dove, wood duck and white-headed woodpecker**. 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. Plus, the grazing period for this allotment is in the fall when these species are not breeding, starting to hibernate or migrating to lower elevations or latitudes. Most of these species are primarily associated with the mosaicked mixed-conifer communities or edges of the associated forest.

Wildlife Species That May Be Negatively Affected By Grazing

Northwest pond turtles are dependent on riparian and aquatic habitat. They may be adversely affected when these habitats are degraded by grazing. Habitat degradation occurs through streambank trampling in shallow ponds, springs, and streams. Pond turtles also use upland habitat for nesting and overwintering sites which can be trampled by cattle. Loss of lakeside emergent wetland vegetation from grazing and trampling may make habitat less suitable for hatchlings and juveniles. This effect should be reduced because of the late season grazing period (i.e. October 16 – November 15) when the juveniles are more mobile and have increased protection of developed shells.

Siskiyou short-horned grasshopper is not known to occur within the allotment but suitable habitat does exist. They are actively feeding and reproducing from July through September and can be impacted by reduction of grass and forb resources upon which they depend for food and protective cover (Brenner, 2006). This may be most critical during the spring and summer months. It is often associated with blue elderberry for the egg-laying phase of its life cycle where females may lay their eggs in the pith of blue elderberry plants. Due to the late season of use for this allotment, the potential impact to Siskiyou short-horned grasshoppers would be limited to damage to eggs and egg-laying substrates. Cattle have been documented to impact elderberry through use as rubbing objects. This can debark and kill some of the exterior branches. It is unclear whether this would have a negative effect because a closely related species, *Chloea conspersa*, relies on dead wood to drill oviposition holes and this species may exhibit similar behavior (Brenner, 2006).

The **Mardon skipper** (butterfly) is not known to occur in the allotment. The area has not been surveyed but we believe that suitable habitat exists. Livestock grazing can impact the skipper through direct trampling of eggs, larvae, pupae, and adults (Black et al. 2002). Larval host plants can be destroyed by consumption and trampling by livestock. The native bunch grasses, essential to Mardon skippers,

regenerate by seeds that can be consumed during grazing. This late season grazing window would allow bunch grasses to have already dropped seed and would lessen the effect to seed sources. Soil disturbance and grazing can facilitate the invasion of non-native species that can out-compete native bunch grasses (Xerces 2007). However, not all grazing is detrimental; light or rotational grazing can be beneficial in maintaining preferred vegetation structure for some skipper species and can help reduce conifer encroachment (Kerwin and Huff, 2007). In order to keep the negative impacts minimal, grazing should not take place when the skipper adults and larvae are active. This is generally from April through October but is probably influenced by elevational changes (Xerces 2007). Assuming that Mardon skippers are present, it is likely that grazing in this allotment would not have significant adverse effects to the adults because they have completed ovipositing (laying eggs) and ended their lifecycle. The larvae would be entering diapause for the winter at the base of the host plants and are unlikely to be consumed during grazing. The potential for trampling larvae exists but lack of research makes it difficult to determine what effect isolated trampling would have on the population.

Grazing has the potential to negatively affect **Johnson's hairstreaks** either by trampling or consuming nectar sources. This effect is likely insignificant in this allotment because hairstreaks nectar on a variety of plants and the grazing period is outside the nectaring and breeding season. This species also spends most of its lifespan in the top of conifer trees where its host plant is located and unaffected by grazing.

The **rufous hummingbird**, like many other hummingbirds, drinks nectar from flowering plants and preys upon small insects in midair or foraging on plant surface. They nest in shrubs and lower branches of conifers and hardwoods. This hummingbird remains poorly understood in most aspects of its life history, particularly breeding ecology and population dynamics. Grazing can reduce the number of nectar-producing plants that reach the flowering stage through both forage utilization and trampling. It is unlikely that there would be any adverse effect to the availability of nectar producing plants and hummingbird nest sites because of the small number of AUMs on this allotment and the amount of suitable habitat in the area.

Mallard nest sites can be affected by grazing from the reduction in grass or shrub cover objects. These cover objects help hide the nest site from visual detection of predators. The reduction of potential nest sites from the previous grazing season would not be selected by the hen the following breeding season. This loss of nest sites would have a minimal effect to the overall ample suitable nesting habitat along the upper reservoir. Cattle can trample mallard nests but the lease grazing period is outside the breeding season and would have no effect on active nesting waterfowl.

The **travelling sideband**, **chase sideband**, **Oregon Shoulderband** and **Siskiyou Hesperian** mollusks are not known to occur in the allotment but suitable habitat does occur in the timbered areas. Over-utilization can degrade habitat along riparian areas in timbered areas but this type of habitat does not occur in the allotment. These land snails feed on detritus that is unaffected by grazing. There is the potential for individuals to be trampled but that would only represent a fraction of the local population. Most terrestrial mollusk species present at a site utilize refugia (e.g. subterranean, talus, and large woody debris) that is undisturbed by grazing. This is evident during mollusk surveys when most species presence is confirmed by empty shells.

The Howard prairie allotment is not within an area designated by the Medford RMP as Big Game Winter Range for **deer and elk**. Grazing has little influence on hiding and thermal cover conditions, but it can affect forage conditions. High quality forage is important to both deer and elk, especially in the winter. There is little diet overlap between livestock and deer with greater overlap of preferred forage between livestock and elk. There is a tendency of both deer and elk to avoid areas being grazed by cattle (Hosten, P.

E. et al. 2007b). 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. Proper livestock grazing management can help to avoid negative impacts to native plants and provide quality forage for deer and elk.

Cumulative Effects

Past activities on Federal land are reflected in current condition discussions in this document. The Dead Indian Plateau has had numerous past and present factors affecting wildlife habitat (e.g. timber harvests, forest fires, road systems, grazing, home construction, and recreational activities). It is reasonable to assume that these activities will only increase in decades to come. The only planned activity in the area on BLM land in the reasonably foreseeable future is the Swinning timber sale (analyzed under the Plateau Thin EA). The impacts of grazing in the mixed-conifer communities are most notable in the meadows and riparian area habitats. The continuation of this grazing lease and the effects to habitat composition would not have any perceivable significant adverse cumulative effects on wildlife habitat and how it functions.

Even though grazing may potentially disrupt local individuals of sensitive wildlife species and may cause the loss of habitat in some cases, grazing on this allotment is not expected to adversely affect long-term population viability of any Bureau wildlife species of concern known to occur in the area. Additionally, this project combined with other actions in the area would not contribute to the need to list any species under the provisions of the ESA, because of the small scope of this grazing lease compared to the available habitat in the vicinity and the late season grazing window.

Alternative 2

Under Alternative 2, grazing lease AUM levels and seasons-of-use would be the same as Alternative 1. The grazing lease for the allotment would authorize use from October 16 to November 15. The effects to terrestrial wildlife under this alternative would be very similar to Alternative 1 except for some beneficial effects of implementing riparian mitigation measures.

If the mitigation measures are implemented a riparian area that was identified as not meeting the Rangeland Health Standards would be protected from grazing. An enclosure would be constructed around a stretch of Grizzly Creek in 38S 3E NE ¼ NE ¼ of section 14 that is accessible to cattle and horses. Plus, a hardened crossing would be placed in Grizzly Creek to prevent bank erosion at a location where horses and cattle cross the creek. These improvements should lessen the negative impacts to potential northwestern pond turtle habitat along Grizzly Creek. The enclosure can also help maintain vegetation that mallards use for nesting cover and riparian habitat utilized by a suite of other species that are not listed as species of concern.

Alternative 3

Implementation of Alternative 3 is expected to be more neutral or beneficial to the wildlife species. This alternative would immediately benefit wildlife by eliminating the direct adverse impacts. Vegetative succession would occur without influence from grazing, and wildlife populations and distributions would change in response to these habitat conditions. Some areas previously impacted by higher utilization of livestock would recover and re-vegetate over time. However, expansion of the non-native grass and noxious weeds in the allotment and the potential for introduction of other invasive species would continue to threaten 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 species associated with riparian areas. 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, mallards and other native wildlife species.

3.4 Botanical Resources and Noxious Weeds

3.4.1 Affected Environment

The eastern portion of this allotment is dominated by dense stands of conifer forest comprised primarily of ponderosa pine (*Pinus ponderosa*) and white fir (*Abies concolor*). Dominant graminoids in this portion of the allotment include blue wild rye (*Elymus glaucus*), and Alaska oniongrass (*Melica subulata*), with dominant forb species such as insideout flower (*Vancouveria hexandra*), broadleaf starflower (*Trientalis latifolia*), and prince's pine (*Chimaphila menziesii*).

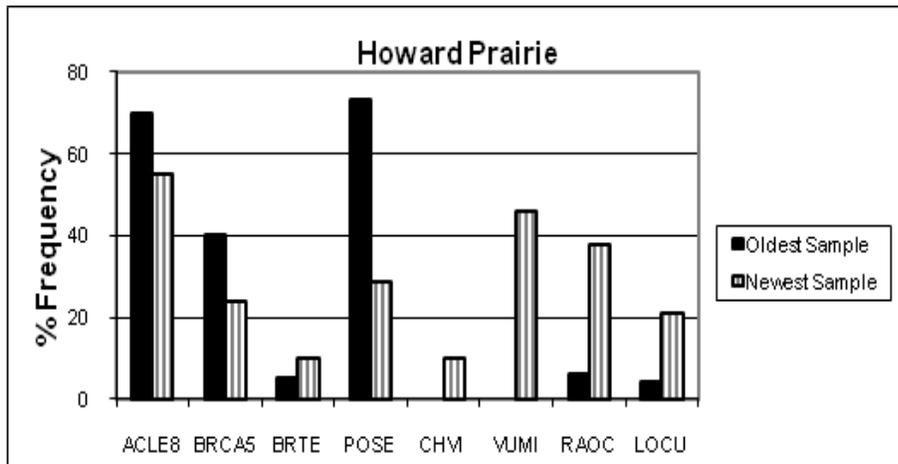
The remaining portion of the allotment is dominated by wet and semi-wet meadow plant communities with a small area of ponderosa pine and white fir forest in the northwest corner of the Bureau of Reclamation owned land. Open wetland areas incorporate grasses such as meadow barley (*Hordeum brachyantherum*), colonial bentgrass (*Agrostis capillaris*), tufted hairgrass (*Deschampsia caespitosa*) and seeded pasture grasses. Shallow soils define open meadows that may be dominated by California oatgrass (*Danthonia californica*) on clayey sites or Idaho fescue (*Festuca idahoensis*), Secund's bluegrass (*Poa secunda*) and Lemmon's needlegrass (*Achnatherum lemmonii*) on soils with more sand or silt. Non-native grasses such as bulbous bluegrass (*Poa bulbosa*) and cheatgrass (*Bromus tectorum*) are also documented to occur in this area. Other open meadows may be dominated by shrubs such as common snowberry (*Symphoricarpus albus*), rose spiraea (*Spiraea douglasii*), and several species of buckbrush.

The Rangeland Health Assessment completed in 2009 showed that there are varied departures in Biotic Integrity within this allotment, depending on the ecological site being evaluated. Two ecological sites were evaluated: Wet Meadow (None to Slight departure) and a Loamy Wet Terrace (Slight departure).

Nested Frequency Data

The collection of trend data using the Nested Frequency Method began in 1990. Data was subsequently collected in 2001, 2005 and 2008.

Figure 1. Nested Frequency Data



Species showing significant change in the frequency of occurrence include a decrease in Lemmon’s needlegrass (*Achnatherum lemmonii*), California brome (*Bromus carinatus*), and Sandberg bluegrass (*Poa secunda*) these species are native, perennial bunchgrasses. An invasive, non-native annual grass cheatgrass (*Bromus tectorum*) and a native annual grass small fescue (*Vulpia microstachys*) have increased. Yellow rabbitbrush (*Chrysothamnus viscidiflorus*) a native subshrub and two forbs; western buttercup (*Ranunculus occidentalis*) and streambank bird’s foot trefoil (*Lotus cupreus*) increased. Other species showing change that were not significant include increases in other shrub and forb species. The percent bare ground appears (from the transect photos) to have decreased.

The Nested Frequency transect is located at a Wet Loamy Terrace ecological site. The overall rating for this location is a Slight to Moderate ecological departure from what would be expected for this site. Twelve indicators (71%) were rated None to Slight, five indicators (29%) were rated Slight to Moderate and none of the indicators were rated Moderate, Moderate to Extreme, or Extreme to Total. The potential plant community on this site as described in the Jackson County soil survey is dominated by ponderosa pine. Stands of shrubs are dominated by Douglas spirea, but they also include common snowberry, Pacific serviceberry, and squawcarpet. Grasses include Idaho fescue, small fescue, prairie junegrass, and California brome. Forbs include wooly eriophyllum, mountain sweetroot, western yarrow, sticky cinquefoil, and strawberry. The plant community at this site is shifting from being grass dominated towards being more shrub dominated which is a normal successional process. Although the significant decreases in perennial bunch grasses at this site is alarming the site is still in very good ecological health therefore, the trend for this site is unknown.

Threatened, Endangered and Bureau Special Status Vascular Species

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

Sensitive Fungi, lichens, and bryophytes

The allotment was surveyed for Bureau Sensitive Status lichens and bryophytes in the spring of 2007. No known occurrences of sensitive fungi, lichens or byrophytes are present within the allotment area.

Noxious Weeds

“Noxious Weed” describes any plant classified by the Oregon State Weed Board that is injurious to public health, agriculture, recreation, wildlife, or any public or private property (Oregon Department of Agriculture Noxious Weed Program). The definition of a B-Designated weed is one “of economic importance which is regionally abundant, but which may have limited distribution in some counties” and treatment methods are determined on a case-by-case basis (Oregon Department of Agriculture Noxious Weed Program). Field surveys in the Howard Prairie allotment have identified one species classified as a B-designated weed, St. John’s Wort (*Hypericum perforatum*). The Medford District BLM does not typically mitigate for this species.

There are populations of cheatgrass (*Bromus tectorum*) and other exotic grasses found throughout some of the open dry to semi-wet areas within the allotment. Exotic 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). Populations of bulbous bluegrass, an exotic perennial, also occur in the non-conifer dry to semi-wet habitats, and populations are primarily located in areas with current disturbance (i.e. equestrian activity, cattle grazing, and other recreation activity). Nested frequency data does not indicate a trend for this species, because it does not occur at the trend plot location. The areas most likely to experience conversion from native perennial grasslands to exotic annual/perennial grasslands have already undergone conversion within the Howard Prairie allotment.

3.4.2 Environmental Consequences

The recreational uses at the Lily Glen Equestrian Park have effects on the rangeland health of the Howard Prairie grazing allotment. Effects occurring from the use at the Equestrian park are from trampling and consumption of vegetation, upland and riparian ground disturbance, and gates that are left open. Effects from consumption of vegetation are undetectable as equestrian users generally bring hay for their horses to eat and grazing is, in most cases incidental. Gates that are left open by park users have effects on the rangeland health because livestock from the neighboring Deadwood grazing allotment access and use the Howard Prairie grazing allotment outside the authorized season of use.

Alternative 1 (No Action)

Grazing occurs from October 16 to November 15, species produce and set seeds annually. The late season of use that occurs on this allotment allows livestock to graze at a time when most species are dormant. The current grazing is having little effect on the allotments botanical condition. Plant community health would slowly increase as recovery from past (homestead) use occurs or persist in its current state if grazing is continued under the current system. Herbivory of and damage to the wetland vegetation, hydrologic cycle, and soil structure due to trampling and churning in riparian areas would continue. There are no known populations of Bureau Sensitive plants within the allotment so the continuation of the grazing would have no effect on the persistence of rare plants.

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.

Alternative 2

Because no change in the season of use or number of AUMs is being proposed for Alternative 2 the effects would be the same as for Alternative 1.

Potential Mitigation Measures

Exclosure

If the exclosure along Grizzly creek is constructed there would be an increase in riparian species in areas where the streambank is within the rooting depth of plants and there is currently bareground. In areas where the streambank is incised there would be no recovery of riparian vegetation particularly if augmented flows from the irrigation canal continue to scour the creek.

Hardened crossing

If the hardened crossing at Grizzly Creek is put in place the wide area where the horses and cows currently cross the creek would be condensed to a narrower crossing area and the area around the crossing would recover vegetatively.

Alternative 3

Resting the Howard Prairie Allotment for ten years would have no measurable negative or positive effects on botanical species or noxious weeds. The area within the allotment that receives most of the grazing use was seeded with a non-native pasture grass, timothy (*Phleum pratense*). Without the annual defoliation the timothy may increase and compete with native species but because timothy is not an aggressive, invasive species it is likely that it will remain within the bounds that it is currently seeded. The riparian vegetation within the allotment may shift from being dominated by species that are very tolerant (or increase) with grazing to a mix of species that are not as tolerant to grazing.

3.5 Soils

3.5.1 Affected Environment

Soil Characteristics and Conditions

The soils identified in this allotment are Farva, Kanutchan, Pinehurst, and Sibannac series. These soils are found on slope ranging from 5 to 30 percent.

The Farva soil is moderately deep, well drained soil is on hillslopes. Permeability is moderately rapid and available water capacity is about 3 inches. The effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate.

The Kanutchan soil is deep, somewhat poorly drained soil is in basins. Permeability is very slow and available water capacity is about 7 inches. The effective rooting depth is limited by the water table, which is within a depth of 1.5 feet from December through May. Runoff is slow, and the hazard of water erosion is slight.

The Pinehurst soil is very deep, well drained soil is on plateaus. Permeability is moderately slow and available water capacity is about 10 inches. The effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Sibannac soil is very deep, poorly drained soil is in basins. Permeability is moderately slow and available water capacity is about 12 inches. The effective rooting depth is limited by the water table, which is within a depth of 1 foot from January through June. Runoff is slow, and the hazard of water erosion is slight.

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 to diminish 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 (Wells, 1997).

From the positive standpoint, dung and urine are deposited across the allotment as a result of cattle grazing. 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 (Wells 1997). Conversely, there is a potential of having an over concentration of recycled nutrients in areas where cattle congregate or are placed in holding facilities.

3.5.2 Environmental Consequences

Alternative 1 (No Action)

Under this alternative the existing cattle grazing operations would continue. The topography of this allotment is fairly gentle so erosion rates on the landscape ranges are low to moderate. There is a potential for higher than normal erosion rates along stream banks and near water sources. Field observations revealed that impacts to the soil resource such as trampling and an increase in soil erosion beyond natural levels are occurring near the watering areas along stream banks and near the Howard Prairie Reservoir where the cattle congregate. In these areas, forage is reduced at a higher level than across the general landscape and soil disturbance and compaction near the water sources would continue at its current rate.

Alternative 2

This alternative is a continuation of the existing condition (Alternative 1) except for the “potential mitigation measures.” All of the suggested mitigation measures would decrease soil disturbance in the local area(s) where cattle congregate for water. The fenced enclosure around a stretch of Grizzly Creek would prevent seasonal trampling along the stream bank and aid in the stabilization of these riparian areas.

As previously mentioned the greatest negative impact that cattle grazing has in this allotment occurs in the riparian areas.

Alternative 3

Eliminating cattle grazing from the BLM-administered land in this allotment would have moderate positive benefits to the soil resource. Soil disturbance and erosion currently associated with the grazing operation, particularly in the riparian areas and water sources, would gradually recover to near natural conditions.

3.6 Cultural Resources

In accordance with the Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management (BLM) and the National Historic Preservation Act of 1966 (specifically section 106), as amended, a literature review and archaeological reconnaissance was conducted for the Howard Prairie Grazing allotment Renewal EA. Previous survey acreage for cultural resources within the allotment boundaries, on both Bureau of Land Management (BLM) and Bureau of Reclamation (BOR) managed lands total 319 acres, or 50% of the 638 acres. The other 50% of the land is inundated with water under Howard Prairie Reservoir.

Under the Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management, the renewal is also exempt from section 106 consultations under Appendix B.

A total of 2 prehistoric sites are currently known to exist within the allotment area, but outside the use area of the allotment.

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. Due to inclusion and implementation of the project design criteria there would be no direct effects to cultural resources; therefore the proposed allotment renewal would have no adverse effects on known cultural resources.

3.7 Recreational and Visual Resources

The grazing allotment is south of the Grizzly Creek County Park and surrounds the Lily Glen Equestrian County Park. The Grizzly Creek County Park is completely fenced from the grazing that occurs on the Howard Prairie grazing allotment. The season of use on the Howard Prairie allotment is late (October 15 to November 15) to reduce user conflicts with the Lily Glen Equestrian Park.

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.

3.8 Methane Emissions

Greenhouse Gas Production Resulting from Livestock Grazing on the Howard Prairie Allotment

Livestock grazing results in methane emissions as a result of ruminant digestion. Methane emission rates from cattle vary widely and depend on many variables (Johnson and Johnson 1995; DeRamus et al. 2003). Estimates for grazing cattle typically range from 80 – 101 kilograms of methane per year per animal (EPA, 2009) or 6.7 -9.2 kilograms of methane per month. This analysis will assume a methane emission rate of 8 kilograms of methane per animal unit month (AUM). Assuming that methane has a global warming potential 21 times carbon dioxide (EPA 2009, p. ES-3), each AUM results in 0.168 metric tons of carbon dioxide equivalent. Continuing to lease this area (in this example) for grazing use at the authorized level of 1,000 AUMs would result in methane emissions of 168 metric tons of carbon dioxide equivalent per year. Current U.S. emissions of methane from livestock total approximately 139 million metric tons of carbon dioxide equivalent per year (EPA 2009, p. 6-2); current U.S. emissions of all greenhouse gases total approximately 7 billion metric tons of carbon dioxide equivalent (EPA 2009, p. 2-4); current global emissions of all greenhouse gases total 25 billion metric tons of carbon dioxide equivalent (Denman et al. 2007, p. 513). This emission would represent 0.0001% of the annual U.S. methane emissions from livestock, and 0.000002% of the annual U.S. emissions of all greenhouse gases, and 0.0000007% of the global emissions of all greenhouse gases. Carbon storage as a result of changes in grazing practices is likely to be small and difficult to predict, especially where a rangeland health assessment has determined that the Standards for Rangeland Health Standards and Guidelines for Livestock Grazing Management are being met. Therefore, this analysis will assume that changes in grazing practices on allotments would not result in any change in total carbon storage. Livestock grazing can affect rangeland carbon levels, through changes in plant community and changes in ecosystem processes, but the effects have been variable and inconsistent among the ecosystems studied (Schuman et al. 2009). Some studies have found that grazing can result in increased carbon storage compared to no grazing, because of increased plant turnover and changes in plant species composition (Follett et al. 2001). Many changes in rangeland carbon from different grazing practices do not result in substantial changes in total ecosystem carbon, but are redistributions of carbon, for example, from above-ground vegetation to root biomass (Derner and Schuman 2007). Overall, changes in rangeland carbon storage as a result of changes in grazing practices are likely to be small and difficult to predict. Therefore, this analysis will assume that changes in grazing practices on this allotment would not result in any change in total carbon storage.

Livestock grazing currently authorized in the Howard Prairie grazing lease represents the highest potential methane production of all the alternatives being analyzed in this EA. As the EPA, working in conjunction with the Oregon DEQ, have set project area limits of 25,000 metric tons of Methane production for projects within the Medford District project area, the Howard Prairie Allotment falls well below the production limit to be in compliance with the Council for Environmental Quality's directions for Methane production.

Table 3-3. Methane Production (GHGs) From Grazing on the Howard Prairie Allotment

Number of Livestock	AUMs	Tons CO2 Equiv./AUM	Methane Production (metric tons)
60 cattle	61	0.168	10.08

4.0 Agencies and Persons Consulted

4.1 Public Involvement

The BLM extended an invitation to the local and regional communities, Native American tribes and other state and federal agencies, private organizations and individuals to develop issues and resources important to local, state, national, and international economies.

Scoping letters were mailed to interested organizations, community groups, individuals, and other agencies and tribes in June 2011. A description of the alternatives, range of activities and maps were included in the mailing, along with a request for public input. BLM received nine scoping responses.

4.2 Availability of Document and Comment Procedures

Copies of the EA will be available for public review in the Medford Interagency Office or on the BLM website at blm.gov/or/districts/medford/plans for a two week public comment period. Please have comments submitted by September 16, 2011. If you would like a copy of the EA, please stop by the office or contact Steve Slavik, project lead, at (541) 618-2471 or Dulcey Schuster, Environmental Coordinator at (541) 618-2307. Written comments should be addressed to John Gerritsma, Field Manager, Ashland Resource Area, at 3040 Biddle Road, Medford, OR 97504. E-mailed comments may be sent to Medford_Mail@blm.gov.

Appendix B. References Cited

Black, S.H., K. Hitt, and M. Vaughan. 2002. Petition to list the Mardon skipper butterfly (*Polites mardon*) as an endangered species under the U.S. Endangered Species Act. Report submitted to The Xerces Society,

Gifford Pinchot Task Force, The Northwest Environmental Defense Center, Center for Biological Diversity, Oregon Natural Resources Council, Friends of the San Juans, and Northwest Ecosystem Alliance. 25 pp.

Brenner, Greg. 2006. Species Fact Sheet for the Siskiyou Short-Horned Grasshopper. Prepared for the USFS Region 6 and BLM Oregon/Washington State Office Interagency Special Status Sensitive Species Program. Last accessed on March 9, 2011, from: www.fs.fed.us/r6/sfpnw/issssp/.

Brown, E. R. (ed). 1985. Management of Wildlife and Fish Habitats in Forest of Western Oregon and Washington (two volumes). USDA Forest Service, Pacific Northwest Region. R6-F&WL-192-1985. Pacific Northwest Region, 319 SW Pine, PO Box 3623, Portland, Oregon 97208.

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.

DeRamus, H. Alan^a, Terry C. Clement^b, Dean D. Giampola^a and Peter C. Dickinson^b, 2003. Methane Emissions of Beef Cattle on Forages (Efficiency of Grazing Management Systems). *Journal of Environmental Quality* 32: 269-277

Derner, J. D. and G. E. Shuman, 2007. Carbon Sequestration and Rangelands: A Synthesis of Land Management and Precipitation Effects. *Journal of Soil and Water Conservation* 62 (2): 77-85

Evans, S.E., A.J. Pelster, W.C. Leininger, and M.J. Trlica. 2004. Seasonal diet selection of cattle grazing a montane riparian community. *J. Range Manage.* 57:539-545.

Follet, R. F., J. M. Kimble, R Lal, 2001. The Potential of U.S. Grazing Lands to Sequester Carbon and Mitigate the Greenhouse Effect. Lewis Publishers, CRC Press LLC, 443 pages.

Hosten, P.E., H. Whitridge, and M. Broyles. 2007. Diet Overlap and Social Interactions among Cattle, Horses, Deer and Elk in the Cascade-Siskiyou National Monument, southwest Oregon. U.S. Department of the Interior, Bureau of Land Management, Medford District. <http://soda.sou.edu/bioregion.html>

Johnson, K. A. and D. E. Johnson. 1995. Methane Emissions from Cattle. *Journal of Animal Science*, 73: 8, 2483-2492

Kerwin, Anthony E. and Rob Huff. 2007. Conservation Assessment for the Mardon Skipper (*Polites mardon*). Version 1.0. USFS Region 6 and BLM Oregon/Washington State Office Interagency Special Status Sensitive Species Program. On file at the Medford BLM District.

Marshall, D.B., M.G. Hunter, and A.L. Contreras. 2003. *Birds of Oregon: A General Reference*. Oregon State University Press, Corvallis, OR.

Oregon Department of Environmental Quality (ODEQ) and USDI Bureau of Land Management. 2003. *Memorandum of Agreement: Process for Achieving State and Federal Water Quality Rules and Regulations*. Portland, Oregon.

Oregon Department of Environmental Quality (ODEQ). 2006b. Oregon administrative rules, chapter 340, division 41, internet address [<http://ww.deq.state.or.us/wq/wqrules/wqrules.htm>]. DEQ, Portland, Oregon.

Oregon Department of Environmental Quality (ODEQ). 2008. *Rogue River Basin Total Maximum Daily Load*. DEQ, Medford, Oregon.

Oregon Department of Environmental Quality (ODEQ). 2010. *Oregon's 2010 Integrated Report*. Internet address: [<http://www.deq.state.or.us/wq/303dlist/wq20104intgrrpt.htm>]. DEQ, Portland, Oregon.

Platts, W.S. and J.N. Rinne. 1985. Riparian and Stream Enhancement Management and Research in the Rocky Mountains. *North American Journal of Fisheries Management*. 5:115-125.

Platts, W.S. 1991. Livestock grazing. P. 389-423. In: W.R. Meehan (ed.), *Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats*. American Fisheries Society Special Publication 19:389-423.

Pyle, Robert Michael. 2002. *The Butterflies of Cascadia, A Field Guide to All the Species of Washington, Oregon, and Surrounding Territories*. Seattle Audubon Society, Seattle, WA.

Schuman, G. E.,^{1,3} J. D. Reeder,² J. T. Manley,¹ R. H. Hart,¹ and W. A. Manley¹, 1999: Impact Of Grazing Management On The Carbon and Nitrogen Balance Of A Mixed-Grass Rangeland, *Ecological Applications*, 9(1).

Thorp, Robbin. 2008. Ph.D. Professor Emeritus. University of California, Davis. Department of Entomology. Personal communication, 6/2008.

USDA Forest Service and USDI Bureau of Land Management, and the Oregon Agricultural Experimental Station. 1993. *Soil survey of Jackson County area, Oregon*.

USDA Forest Service and USDI 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 Forest Related Species within the Range of the Northern Spotted Owl*. Portland, Oregon.

USDA Forest Service and USDI Bureau of Land Management, et al. 1995. Ecosystem Analysis at the Watershed Scale: Federal Guide for Watershed Analysis – Version 2.2. Portland, Oregon. August.

USDA Forest Service and USDI Bureau of Land Management. 1995. Jenny Creek Watershed Analysis. Medford District Office, Medford, Oregon.

USDA Forest Service USDI Bureau of Land Management, 1999. Management Recommendations for Survey and Manage Terrestrial Mollusks, V. 2.0.

USDA, Forest Service and USDI, Bureau of Land Management. 2005. Northwest forest plan temperature TMDL implementation strategies. Portland, Oregon.

USDI Bureau of Land Management. 1984. Medford Grazing Management Program Environmental Impact Statement. Medford District Office, Medford, Oregon.

USDI Bureau of Land Management. 1984. Rangeland Program Summary Record of Decision. Medford District Office, Medford, Oregon.

USDI Bureau of Land Management. 1994. Medford District Proposed Resource Management Plan/ Environmental Impact Statement. Medford, Oregon.

USDI Bureau of Land Management. 1995. Record of Decision and Resource Management Plan. Medford District Office, Medford, Oregon.

USDI Bureau of Land Management. 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. Bureau of Land Management, Washington, D.C.

USDI Bureau of Land Management. 1998-2006. Stream and Riparian Survey Data. Medford District Office, Medford, Oregon.

USDI Bureau of Land Management. 2008. Oregon and Washington Bureau of Land Management Special Status Species List. Portland, OR.

USDI Bureau of Land Management, Medford District Office. 2008. Draft Water Quality Restoration Plan for the Jenny Creek Watershed. Medford, Oregon.

USDI Bureau of Land Management. 2009a. Howard Prairie Allotment—Standards of Rangeland Health Analysis. Medford District Office, Medford, Oregon.

USDI Bureau of Land Management. 2009b. Evaluation and Preliminary Determination Achieving the OR/WA Standards for Rangeland Health and Conformance with the Guidelines for Livestock Grazing Management for the Howard Prairie Allotment. Medford District Office, Medford, Oregon.

USDI Bureau of Land Management. 2010. Provisional Streams Dataset for Jenny Creek. Unpublished digital data.

USDI Fish and Wildlife Service, Roseburg Field Office, 2003. *Rogue River / South Coast Biological Assessment FY 2004-2008 for Activities that may affect listed species in the Rogue River/South Coast Province, for Medford District Bureau of Land Management, Rogue River and Siskiyou National Forests* 11 July 2003. Biological Opinion (FWS) 1-14-03-F-511 20 October 2003.

United States Environmental Protection Agency, Water Division. 1993. Monitoring Protocols to Evaluate Water Quality Effects of Grazing Management on Western Rangeland Streams. Seattle, Washington.

Xerces Society. 2007. Xerces Society surveys of *Polites mardon klamathensis* in southern Oregon (Summer 2007). 76 pp. On file at the Medford BLM District.

Wells, K.L. and Dougherty, C.T., 1997. Soil Management for Intensive Grazing. University of Kentucky College of Agriculture, College of Agronomy, Soil Science News & Views, Vol. 18, No. 2, 1997