

FINDING OF NO SIGNIFICANT IMPACT
LIVESTOCK GRAZING PERMIT RENEWAL FOR THE
BUCK CREEK-BRIDGE CREEK ALLOTMENT (#00702)

DOI-BLM-OR-L050-2013-0038-EA

The Bureau of Land Management, Lakeview Resource Area (BLM), has analyzed several alternative proposals related to renewing term grazing permit number 3601843 for a ten-year period. This permit addresses livestock grazing management for the Buck Creek-Bridge Creek Allotment (#00702) to the southwest of Silver Lake, Oregon.

An environmental assessment (EA) was prepared that analyzed the potential direct, indirect, and cumulative environmental impacts of three management alternatives. The alternatives included No Action (continue current management and issue the permit with existing terms and conditions); Riparian Protection (issue the permit and make management changes in the South Pasture to protect a small riparian area); and No Grazing (not issuing the permit) (see Chapter 2 of attached EA).

The Council on Environmental Quality (CEQ) regulations state that the significance of impacts must be determined in terms of both context and intensity (40 CFR 1508.27). The context of the proposed action is the total area contained within the five allotment. For this reason, the analysis of impacts in the attached Environmental Assessment (EA) is focused appropriately at this scale. The CEQ regulations also include the following ten considerations for evaluating the intensity of impacts:

- 1) Would any of the alternatives have significant beneficial or adverse impacts (40 CFR 1508.27(b)(1))?
() Yes (X) No

Rationale: Based on the analysis contained in the attached EA, none of the alternatives would have either significant beneficial or adverse impacts on the human environment. There are no prime or unique farmlands, wild horse management areas, significant caves, designated wilderness areas, wilderness study areas, lands with wilderness characteristics, areas of critical environmental concern, research natural areas, wild and scenic rivers, fish or special status aquatic species, threatened or endangered species, special status plants, hazardous waste sites, or low income or minority populations located in the allotment. No measureable impacts would occur to climate, air quality, floodplains, hydrology, land status, forest or woodland habitat, fire regimes, or mineral and energy resources (see Table 3 of Chapter 3).

The potential impacts to soils and biological soil crusts, upland vegetation, noxious weeds, streams, riparian vegetation, water quality, wildlife, special status wildlife species, livestock grazing management, social and economic values, native American traditional practices, cultural resources, recreation, and visual resources anticipated by the alternatives have been analyzed in detail within Chapter 3 of the attached EA and found not to be significant.

- 2) Would any of the alternatives have significant adverse impacts on public health and safety (40 CFR 1508.27(b)(2))? () Yes (X) No

Rationale: None of the alternatives analyzed in detail in the attached EA would have significant impacts on public health or safety because the project area is not located near any populated rural or urban area. For this reason, there would also be no impacts to low income or minority populations. Further, there are no known hazardous waste sites in the project area. There would be no measureable impacts to air quality within and surrounding the project area (Table 14). There are no surface drinking water sources located in the project area. Impacts to water quality associated with the intermittent Bridge Creek Draw located in the area are described as minor (see Chapter 3).

- 3) Would any of the alternatives have significant adverse impacts on unique geographic characteristics (cultural or historic resources, park lands, prime and unique farmlands, wetlands, wild and scenic rivers, designated

wilderness or wilderness study areas, or ecologically critical areas (*ACECs, RNAs, significant caves*)) (40 CFR 1508.27(b)(3)? Yes No

Rationale: There are no prime or unique farmlands, significant caves, designated wilderness areas, wilderness study areas, wild and scenic rivers, ACEC/RNAs, or lands with wilderness character located in the project area (Table 3). Potential impacts to riparian areas and cultural resources have been analyzed in Chapter 3 of the attached EA and found not to be significant.

4) Would any of the alternatives have highly controversial effects (40 CFR 1508.27(b)(4)? Yes No

Rationale: The BLM has extensive expertise planning, analyzing impacts, and implementing range management actions such as those proposed by the alternatives addressed in the attached EA. The potential impacts of these range management actions on soils and biological soil crusts, upland vegetation, noxious weeds, streams, riparian vegetation, water quality, wildlife, special status wildlife species, livestock grazing management, social and economic values, native American traditional practices, cultural resources, recreation, and visual resources can be reasonably predicted based on existing science and professional expertise. The attached EA analyzed these impacts (Chapter 3) and found them not to be significant. The nature of these impacts is not highly controversial, nor is there substantial dispute within the scientific community regarding the nature of these effects.

Potentially interested public, agencies, tribes, and the permittee have been provided notice of a 30-day review period on the EA. The BLM will review any comments received to determine if they identify highly controversial effects, as defined under 40 CFR 1508.27(b)(4).

5) Would any of the alternatives have highly uncertain effects or involve unique or unknown risks (40 CFR 1508.27(b)(5)? Yes No

Rationale: The BLM has extensive expertise planning, analyzing impacts, and implementing range management actions such as those proposed by the alternatives addressed in the attached EA. The potential impacts of these range management actions on soils and biological soil crusts, upland vegetation, noxious weeds, streams, riparian vegetation, water quality, wildlife, special status wildlife species, livestock grazing management, social and economic values, native American traditional practices, cultural resources, recreation, and visual resources can be reasonably predicted based on existing science and professional expertise. The attached EA analyzed these impacts (Chapter 3). The nature of these impacts is not highly uncertain, nor does it involve unique or unknown risks.

6) Would any of the alternatives establish a precedent for future actions with significant impacts (40 CFR 1508.27(b)(6)? Yes No

Rationale: The BLM has extensive expertise planning, analyzing impacts, and implementing range management actions such as those proposed by the alternatives addressed in the attached EA. None of the alternative actions represents a new, precedent-setting range management technique or would establish a precedent for future similar actions with potentially significant effects.

7) Are any of the alternatives related to other actions with potentially significant cumulative impacts (40 CFR 1508.27(b)(7)? Yes No

Rationale: Based on the analysis contained within the Cumulative Effects section of Chapter 3 of the attached EA, none of the alternatives would have significant cumulative effects within the project area, even when added to the effects of other past, present, and reasonably foreseeable future actions.

8) Would any of the alternatives have significant adverse impacts on scientific, cultural, or historic resources, including those listed or eligible for listing on the National Register of Historic Resources (40 CFR 1508.27(b)(8)? Yes No

Rationale: The allotment is located within a broad area which was used historically by native Americans. However, there are no known native American religious or sacred sites, designated Traditional Cultural Properties, or important plant collecting sites known within the allotment. Potential impacts to cultural resources have been

analyzed in Chapter 3 of the attached EA and found not to be significant. Tribal governments with a known interest in or potential knowledge of cultural resources and traditional uses in the allotment were provided an opportunity to review the EA and provide input on potential impacts.

9) Would any of the alternatives have significant adverse impacts on threatened or endangered species or their critical habitat (40 CFR 1508.27(b)(9)? Yes No

Rationale: No threatened or endangered plant or animal species or their habitats are present in the allotment (Table 3).

10) Would any of the alternatives have effects that threaten to violate Federal, State, or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)? Yes No

Rationale: All of the alternatives analyzed in the attached EA comply with all Federal, State, and local environmental laws or other environmental requirements, including the National Environmental Policy Act, Clean Water Act, Clean Air Act, and Endangered Species Act.

The Federal Land Policy and Management Act requires that any action that BLM implements must also conform with the current land use plan and other applicable plans and policies. The purpose and need for the proposed action conforms with the management direction contained in the *Lakeview Resource Management Plan/Record of Decision* (BLM 2003b). The alternatives analyzed in the EA conform to the management direction requirements of this plan and 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* (BLM 1997), and the grazing regulations (43 CFR Part 4100) in varying degrees (see EA Chapters 1 and 3). Conformance with this direction will be addressed in more detail within the proposed decision.

Finding

On the basis of the analysis contained in the attached EA, the consideration of intensity factors described above, and all other available information, my determination is that none grazing management activities contained in the alternatives analyzed would constitute a major federal action which would have significant adverse or beneficial impacts on the quality of the human environment. For these reasons, an EIS is unnecessary and will not be prepared.

Thomas E. Rasmussen, Field Manager
Lakeview Resource Area

Date

**Livestock Grazing Permit Renewal for the
Buck Creek-Bridge Creek Allotment #00702**

Environmental Assessment

DOI-BLM-OR-L050-2013-0038-EA

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Bureau of Land Management
Lakeview Resource Area
Lakeview District Office
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CHAPTER I - PURPOSE AND NEED FOR ACTION

A. Introduction

The Lakeview District, Bureau of Land Management (BLM) has prepared this Environmental Assessment (EA) to analyze the potential effects of renewing term grazing Permit #3601483 for a ten-year period. This permit addresses grazing management specifically within the Buck Creek-Bridge Creek Allotment (#00702). This EA analyzes the potential direct, indirect, and cumulative impacts that may result with the implementation of the proposed alternatives. This EA also serves as the analytical basis for making the determination as to whether any significant impacts to the human environment would result from the proposal, in compliance with the National Environmental Policy Act of 1969 (NEPA).

The Buck Creek-Bridge Creek Allotment is located approximately 2 miles west of Silver Lake, Oregon (Maps 1 and 2). The Buck Creek-Bridge Creek Allotment has a total of 6,369 acres BLM-administered lands and 459 private land acres. The allotment contains four pastures grazed in a spring/summer rest-rotational grazing system. This allotment is grazed under one permit (#3601483) which authorizes 309 animal unit months (AUMs) of forage use from 5/1 to 10/15.

B. Purpose and Need for Action

One grazing permit (#3601483) exists for this pasture and it expired in early 2013. The permittee submitted a permit renewal application to the BLM for consideration. The primary purpose of this analysis is to respond to the permittee's permit renewal application and consider whether or not to reissue or modify the 10-year term livestock grazing permit in accordance with 43 CFR Part 4130. When issued, grazing permits must also address appropriate terms and conditions designed to "achieve management and resource condition objectives for the public lands... and to ensure conformance with part 4180" (43 CFR Part 4130.3).

A secondary purpose of this EA is to address a rangeland health violation of Standard 2 (Watershed Function –Riparian\Wetland areas) observed during a recent reassessment of proper functioning condition (PFC) in a small riparian area associated with South Spring on Bridge Creek Draw in the South Spring Pasture.

C. Decision to be Made

The authorized officer will decide whether or not to renew the 10-year Term Grazing Permit, and if so, under what terms and conditions. The authorized officer will decide how to address the rangeland health violation.

D. Decision Factors

Decision factors are additional criteria used by the decision maker to choose the alternative that best meet the purpose and need for the proposal. These include:

- a) How well does the decision conform to laws, regulations, and policies related to grazing use and protecting other resource values?
- b) How well does the decision conform to the resource management plan?
- c) How well does the decision promote the meeting or maintenance of rangeland health standards?

E. Conformance with Laws and Regulations

This EA has been prepared in conformance with National Environmental Policy Act of 1969. Grazing permits are issued or renewed in accordance with the provisions of the Taylor Grazing Act (1934), Federal Land Policy and Management Act (FLPMA, 1976), Public Rangelands Improvement Act (1978), and applicable grazing regulations at 43 Code of Federal Regulations (CFR) Part 4100.

In order for an applicant to lawfully graze livestock on public land, the party must obtain a valid grazing permit or lease. The grazing regulations, 43 CFR 4130.2(a), state “grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans.” The permit renewal applicant (current permittee) controls the base property associated with the grazing preference on the pasture and has been determined to be a qualified applicant.

A performance review of the permittee’s past use was completed and BLM found the permittee’s record of performance, pursuant to 43 CFR 4110.1(b), to be in compliance. This conclusion was based on: grazing utilization at acceptable levels, bills were paid on time, actual use information was turned in yearly, use was within permitted dates, permit terms and conditions were adhered to, base property requirements were met, and history of trespass or unauthorized use has been minimal. Forage consumption has mostly been within authorized AUMs for the last ten years.

F. Conformance with Land Use Plan

Approved management actions must conform to the appropriate land use plan. The *Lakeview Resource Management Plan/Record of Decision* (BLM 2003b, as maintained) is the governing land use plan for the area and provides the following goals and management direction related to livestock grazing use:

Livestock Grazing Management Goal - provide for a sustainable level of livestock grazing consistent with other resource objectives and public land-use allocations (page 52, as maintained).

Management Direction:

“The current licensed grazing levels (Appendix E1) will be maintained until analysis or evaluation of monitoring data or rangeland health assessments identify a need for adjustments to meet objectives. Applicable activity plans (including existing allotment management plans, agreements, decisions and/or terms and conditions of grazing use authorizations) will be developed, revised where necessary, and implemented to ensure that resource objectives are met. The full permitted use level for each allotment has been and continues to be analyzed through individual allotment assessments, such as rangeland health and livestock grazing management guidelines...” (pages 52-53, as maintained).

The Buck Creek-Bridge Creek Allotment is currently open or available for grazing use and is allocated livestock forage as listed in Table 5 (page 49, as maintained).

“Where livestock grazing is found to be limiting achievement of multiple use objectives, actions to control intensity, duration, and timing of grazing and/or provide for periodic deferment and/or rest will be required to meet physiological requirements of key plant species and to meet other resource objectives. Upon determining that existing grazing management practices on public land are contributing to the nonattainment of resource objectives, appropriate actions will be implemented. The intent of grazing management is to leave sufficient herbaceous

material on the ground to provide soil and watershed protection, to provide forage and cover for wildlife and wild horses, and to meet other resource objectives” (page 53, as maintained).

Plant Communities: Riparian and Wetland Management Goal – Restore, maintain, or improve riparian vegetation, habitat diversity, and associated watershed function to achieve healthy and productive riparian areas and wetlands (page 30, as maintained).

Management Direction:

“Riparian/wetland areas will be managed for uses within the watershed that emphasize the maintenance or improvement of naturally-occurring values while providing for commodity production and the attainment of proper functioning condition, riparian management objectives, and desired range of conditions. . .” (page 31, as maintained).

“Areas not in proper functioning condition will be managed to attain an upward trend in the composition and structure of key riparian/wetland vegetation and desired physical characteristics of the stream channel. Uses within the riparian conservation area and contributing upland watersheds will be allowed as long as there is measurable progress towards attainment of State water quality standards, proper functioning condition, and riparian management objectives. . . .” (page 31, as maintained).

Noxious Weeds and Competing Undesirable Vegetation Management Goal – control the introduction and proliferation of noxious weeds and competing undesirable plant species, and reduce the extent and density of established populations to acceptable levels (page 37, as maintained).

Management Direction:

“Weeds will be controlled in an integrated weed management program that includes prevention education and cultural, physical, biological, and chemical treatments... Mechanical and manual control methods and burning treatments will (be used to) physically remove noxious weeds and unwanted vegetation; biological controls will introduce and cultivate agents such as insects and pathogens that naturally limit the spread of noxious weeds; and chemical treatments using approved herbicides will be applied where mechanical and/or biological controls are not feasible” (page 37, as maintained).

“Selection of the appropriate control method will be based on such factors as the growth characteristics of the target species, size of the infestation, location of the infestation, accessibility of equipment, potential impacts to non-target species, use of the area by people, effectiveness of the treatment on target species, and cost... these methods may be used individually or in combination and may be utilized over several years... for a period of 10 or more years” (page 37, as maintained).

Operation and Maintenance Actions

Management Direction:

“Maintenance of existing and newly constructed facilities or projects will occur over time... Such activities could include, but are not limited to, routine maintenance of existing... water control structures..., reservoirs, wells, pipelines, waterholes, fences, cattle guards, seedings, ...

and other similar facilities/projects” (Page 100).

Appendix E1 – Allotment Specific Management Direction for Buck Creek-Bridge Creek Allotment
(page A-102, as maintained)

Livestock distribution/management - *Improve livestock management and distribution through improved management practices, installation of livestock management facilities (such as fences and water sources), and/or other actions as opportunities arise.*

Maintain Range condition- *Use management practices and/or better animal distribution; develop range improvements when appropriate; adjust permitted use as needed.*

Maintain/Improve forage production- *Continue to manage for forage production in seeded area through season of use adjustments, possible vegetation treatments, fencing, water developments, and/or other actions.*

Plant communities/vegetation – *Implement the current integrated noxious weed management plan.*

Restore productivity and biodiversity in quaking aspen stands. Manage areas where juniper encroachment or increased density is threatening other resource values. Maintain old growth characteristics in historic juniper sites not prone to frequent fire. Maintain quaking aspen to maintain age class diversity and to allow for species reestablishment.

Mule Deer Winter Range- *Monitor utilization of browse in winter range areas. Avoid livestock utilization levels that reduce the long-term viability of browse plants.*

Wildlife/wildlife habitat: *Monitor utilization of browse in winter range areas. Avoid livestock utilization levels that reduce the long-term viability of browse plants. Monitor elk populations to ensure that sufficient forage and habitat are available. Continue to work with USFS on implementing bald eagle management plans.*

G. Consistency with Other Plans and Policies

The final decision must also conform to the following plans or policies, which also direct and provide a framework for management of BLM lands/resources within Lakeview Resource Area:

Standards for Rangeland Health and Guidelines for Livestock Management for Public Lands Administered by the BLM in the States of Oregon and Washington (BLM 1997a)

The allotment met all applicable Rangeland Health Standards in 2004 (BLM 2004b). In 2013, the assessment was updated and during the PFC assessment, one small riparian area was rated “Functional at Risk” with a downward trend. Therefore, this area did not meet Standard 2 (BLM 2013b). Changes to livestock grazing management were recommended for the 2014 grazing year.

CHAPTER 2 - ALTERNATIVES

Alternatives Analyzed in Detail

Actions Common to Grazing Alternatives 1 and 2

Grazing Management System

The Buck Creek-Bridge Creek Allotment is currently grazed in a rest rotation grazing system. There are 4 pastures within the allotment (Map 2). This 4-pasture rest rotation system would be continued under Alternatives 1 and 2.

Monitoring

Monitoring would continue, generally as specified in the *Lakeview RMP/ROD* (BLM 2003b, pages 53-55, as maintained). In summary, trend monitoring studies would be conducted and include photo station and observed apparent trend methodologies are used to measure cover, species composition and frequency. Utilization studies would be conducted using the key forage plant method. Utilization is a measure of the amount of the current year's forage consumed by livestock. Monitoring methodology would follow the latest protocol, such as Technical References 1734-3 and 1734-4 (BLM 1996a, 1996b) incorporated herein by reference. Table 1 describes the key species and utilization targets identified for the Buck Creek-Bridge Creek Allotment.

Table 1. Key Species and Target Utilization Levels for Pastures within the Buck Creek-Bridge Creek Allotment.

Pasture	BLM Acres	Key Species	Utilization Target %
Emery Seeding	2681	Crested wheatgrass	50
Bridge Creek	1580	Needle and thread grass /bottlebrush squirrel tail	50
Middle Pasture	970	Needle and thread grass /bottlebrush squirrel tail	50
South Spring	1134	Idaho Fescue	50

Other Terms and Conditions Applicable to All Grazing Alternatives

Terms and conditions that comply with Federal and State policies will be included within any grazing permit issued under any grazing alternative. This includes requirements such as: timely payment of fees, submission of actual use reports, providing administrative access across private land, continued compliance with Rangeland Health Standards, and maintenance of range improvements.

Grazing Management Flexibility

Knowing that uncertainties exist in managing for sustainable ecosystems, changes to the annual grazing use may be authorized within the limits of the grazing permit for reasons such as, but not limited to:

Adjust the rotation/timing of grazing based on previous year's monitoring and current year's climatic conditions. An example of this would be; to turn livestock out later in the season on a year with a wet cold spring; or to bring livestock off the allotment early as conditions warrant this need.

Dry years that limit water availability; An example would be resting a pasture that had low water and shifting livestock use to the pasture that had water. Conversely on wet years, livestock could be moved to areas near more dependable water sources.

Change in use periods to balance utilization levels in each pasture. An example of this would be to shorten the time period or number of livestock in a pasture that had 65% average utilization and or increase the time period and number of livestock in another pasture that had 30% average utilization if the target utilization in both pastures is 50%.

Flexibility in grazing management would be authorized within the active permitted AUMs and outside permit dates, some of the more common adjustments are:

Increasing livestock numbers while shortening the season of grazing use

Adjustments to the length of time and AUMs of grazing use to meet resource objectives including but not limited to utilization targets

Temporary (1 year) adjustments to pasture use usually dependent on water availability or climate related issues. Sometimes adjustments would be made to reduce conflicts with other resources; such as one time recreational or other activities where livestock or the other resource would benefit from adjusting the livestock use.

Maintenance of Existing Range Improvements (Alternatives 1-2)

Maintenance of existing water troughs, wells, pipelines, waterholes, and fences would be included under Alternatives 1 and 2. Maintenance may not be needed on all existing developments; however, it would likely be needed sometime in the next 10 years. Waterhole maintenance would include the cleaning (within the original area of disturbance) of the waterhole to ensure continued function. Trough maintenance would include fixing and/or replacing leaking troughs, or fixing and/or replacing fittings, etc. Pipeline maintenance would include replacing and/or repairing broken, damaged, or leaking sections of pipe, and replacing fittings, etc.

Alternative 1 - No Action

The No Action Alternative would renew the existing livestock grazing permit (#3601483) in the Buck Creek-Bridge Creek Allotment for the current grazing permittee with the same terms and conditions (Table 2). A 10-year term livestock grazing permit would be issued to continue current grazing management during the permitted season with the current specified grazing use. This definition for the No Action Alternative is consistent with BLM (2000) guidance.

Table 2. Specified Grazing use for Alternative 1 in the Buck Creek-Bridge Creek Allotment

Livestock		Grazing period		Type use	AUMs
Number	Kind	Begin Date	End Date		
77	CATTLE	5/1	10/15	Active	309

Alternative 2: Riparian Protection

Under this alternative approximately 1/4 mile of protective fence would be constructed along Bridge Creek Draw, an intermittent creek near South Spring (Map 3). This would encompass approximately 2 acres of moist riparian area. This area would be excluded from livestock until another PFC assessment shows the creek to be at PFC with a stable or upward trend. The enclosure could be grazed in the future, if riparian conditions improve and are determined to be stable enough that livestock grazing would allow maintenance of the PFC stable to upward trend rating. Permitted livestock, grazing rotation, and grazing period for the majority of the allotment would be the same as Alternative 1 (Table 2). Use in the South Spring Pasture would typically be limited to spring season of use.

Alternative 3: No Grazing

Under this alternative, the current permit would not be renewed and livestock grazing would not be authorized on public lands within the allotment. Range improvement inside the allotment boundary would not be maintained for the 10-year life of the permit. The current cooperative fence maintenance assigned to current grazing permittee would be dissolved at the same time. However, allotment boundary fences would still be maintained by other parties to prevent unauthorized livestock use (trespass) from adjacent allotments that continue to be grazed.

Alternative Considered but Eliminated from Further Analysis

50% Grazing Reduction

A 50% reduction of AUMs on the allotment was considered as an alternative. This alternative was eliminated from further analysis because the impacts would fall within the range of impacts already analyzed in detail for both the No Grazing Alternative (3) and the No Action Alternative (1).

CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section presents a description of the current environment within the allotments and a discussion of the potential impacts resulting from implementation of the alternative management actions. An inter-disciplinary (ID) team has reviewed and identified the resources values and uses that could potentially be affected by the alternative actions. Those resources or uses identified as “not affected” or “not present” are listed in Table 3 and will not be discussed or further analyzed in this EA. The remainder of this chapter describes the potential direct, indirect, and cumulative effects on resources and resource uses that may

Table 3. Resources or Uses that are Not Present or Would Not be Affected by the Proposal

Elements of the Human Environment		Rationale
Areas of Critical Environmental Concern (ACECs)	Not Present	There are no ACECs or research natural areas (RNAs) within the allotment.
Air Quality (Clean Air Act)	Not Affected	None of the alternatives analyzed would have measureable impacts to air quality or significant discharges of regulated air pollutants.
Environmental Justice (Executive Order 12898)	Not Present	None of the alternatives would have disproportionately high or adverse effects on minority populations or low-income populations as such populations do not exist within the allotment or surrounding area.
Fire and Fuels Management	Not Affected	No fire or fuel treatments are being proposed in this EA.
Forest/Woodlands	Not Affected	None of the alternatives analyzed would have any measureable impacts on forest transition or juniper woodland habitat.
Flood Plains (Executive Order 13112)	Not Affected	None of the alternatives propose construction that would modify existing flood plains. Therefore, there would be no floodplain or related hydrologic impacts.
Hazardous or Solid Waste	Not Present	No such sites or issues are known within the allotment.
Lands	Not Affected	None of the alternatives analyzed would have any effects on current land status or land tenure.
Minerals and Energy	Not Affected	None of the alternatives analyzed would have any effects on mineral or energy resources or uses.
Prime or Unique Farmlands	Not Present	No such lands have been identified in the allotment.
Threatened and Endangered Plants and Animals	Not Present	No known federally listed plant or animal species or their habitat are found within the allotment.
Special Status Plants	Not Present	No known special status plants or their habitat are found within the allotment.
Wilderness	Not Present	No wilderness study areas or designated wilderness areas are located in the allotment.
Lands with Wilderness Characteristics	Not Present	BLM's original wilderness inventory did not find wilderness characteristics to be present within this allotment (USDI-BLM 1979a, 1979b, 1979c, 1980a, and 1980b). Since 2007, the BLM has been conducting wilderness inventory updates following current inventory guidance (BLM 2007a, 2008a, 2012c). In this process, an interdisciplinary team reviewed the existing wilderness inventory information contained in the BLM's wilderness inventory files, previously published inventory findings, and citizen-provided wilderness information (ONDA 2005). BLM subsequently conducted field inventory, assembled field photos and a photo log, completed route analysis forms, made unit boundary determinations, and evaluated wilderness character within each inventory unit within the allotment. BLM did not find lands with wilderness characteristics to be present in this area (BLM 2010). (The document is available at http://www.blm.gov/or/districts/lakeview/plans/inventas.php). BLM hereby incorporates these findings by reference in their entirety. Based upon the results of this inventory update, there would be no impacts to lands with wilderness characteristics.
Wild Horses (Wild Horse and Burro Act)	Not Present	The allotment is located outside of designated wild horse herd management areas.
Wild and Scenic Rivers	Not	There are no Wild or Scenic Rivers within the allotment.

Elements of the Human Environment		Rationale
	Present	

Climate

Affected Environment

The climate in the vicinity of the allotment is variable, but typical of the Northern Great Basin system. Mean annual precipitation ranges from 10-12 inches. Precipitation occurs mostly in the form of snow during December through March with spring rains common. The soil temperature regime is frigid. Mean annual air temperatures range from 43 to 45 degrees F. The Frost-free time period is from 50 to 80 days. The period of optimum plant growth is from April through July.

Changes in greenhouse gas levels may affect global climate (Forster *et al.* 2007, NOAA 2010). However, the U.S. Geological Survey (USGS) has summarized the latest science on greenhouse gas emissions and concluded it is currently beyond the scope of existing science to identify a specific source of greenhouse gas emissions and designate it as the cause of specific climate impacts at a specific location (USGS 2008). For this reason, the analysis focuses on quantifying the potential changes in greenhouse gas emissions and carbon sequestration associated with the alternatives.

Effects Common to Alternatives 1-3

Livestock grazing results in methane emissions as a result of ruminant digestion. Methane is recognized as one source of carbon emissions. Emission rates from cattle vary widely and depend on many variables (Johnson and Johnson 1995; DeRamus *et al.* 2003). Livestock grazing can also affect rangeland carbon storage 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 rather simply redistribute carbon, for example, from aboveground vegetation to root biomass (Derner and Schuman 2007).

Based on the analyses contained in several recent permit renewal EAs, which have analyzed between 0 and 4,633 AUMs of forage consumption annually, and are incorporated herein by reference in their entirety (BLM 2012c, 2012d, 2013a), the continued utilization of up to 309 AUMs of forage would result in extremely small levels of greenhouse gas emissions and net carbon storage/loss, and would be similar to the extremely small levels previously analyzed. These levels would not have any significant effects on either regional or global greenhouse gas emissions or carbon sequestration processes, or have any scientifically verifiable effects on regional or global climate. Therefore, this issue will not be analyzed further.

Soils and Biological Crusts

Affected Environment

Soil information was collected from the Soil Survey of Lake County, Northern Part, Natural Resource Conservation Service (NRCS Unpublished Data, 2013) as well as soil data on file at the Lakeview District BLM Office. This data is herein incorporated by reference in its entirety and is summarized in the following section.

The allotment contains 11 soil associations (Map 4). The majority of the allotment is comprised of one soil map unit making up 64% of the allotment (Table 4). All other soil map units make up 12% of the allotment or less. The majority of the allotment is the dunres cobbly ashy sandy loam, thick surface, 1 to 8 percent slopes. This soil has a parent material of volcanic ash over residuum derived from volcanic rock like basalt. This soil is well drained with a water holding capacity of 4 inches.

Table 4. Soils in the Buck Creek-Bridge Creek Allotment

Soil Series Name	Acres	% of Allotment
Unknown	268	4.2%
CONNLEYHILLS A-COSL, 2-15% SLOPES	568	8.9%
DUNRES-NORCROSS CMLPX, 1-8% SLOPES	281	4.4%
DUNRES CB-A-SL, THICK SURF, 1-8% SLOPES	4082	64.1%
DUNRES ST-A-FSL, 1-6% SLOPES	262	4.1%
GLENCABIN GR-A-L's, DRY, 15-35% SLOPES	21	0.3%
GOODTACK A-VFSL, 2-10% SLOPES	78	1.2%
MOONBEAM-GOODTACK CMLPX, 1-8% SLOPES	0	0.0%
MOREHOUSE A-S, 2-20% SLOPES	7	0.1%
SUCKERFLAT-RO CMLPX, 8-15% SLOPES	1	0.0%
WEGERT-KUNCEIDER CMLPX, 0-3% SLOPES	16	0.3%
WEGERT-KUNCEIDER CMLPX, HIGH PPT, 0-15% SLOPES	782	12.3%

The Rangeland Health Assessment found soils in the allotment exhibit infiltration and permeability rates, moisture storage, and stability appropriate for soil, climate, and land form, and therefore Standard 1 is being met (BLM 2004b, 2013b). Upland soils in the allotment exhibit infiltration and permeability rates, moisture storage, and stability appropriate for soil, climate, and land form. Root occupancy for the soil is appropriate. The plant composition and community structure is defined by the soil type and precipitation zone. The entire allotment has a soil surface factor rating of slight, with the majority of the allotment in a static observed apparent trend (OAT).

OAT data was used to determine trend indicators correlated to soil stability. These indicators are: surface litter, pedestals, and gullies. OAT data indicates stable soils on the allotment; i.e. surface litter is accumulating in place, there is little evidence of pedestaling, and gullies are absent from the slopes at trend sites and from ESI data. Soil Surface Factor (SSF) rating was

evaluated for the allotment during the ESI effort in 1987. SSF ratings are used to assign an erosion class rating and the potential susceptibility of soil to accelerated erosion. The entire allotment rated out in the slight erosion condition class from ESI data.

Biological soil crusts (BSCs) such as mosses, lichens, micro fungi, cyanobacteria and algae play a role in a functioning ecosystem. In addition to providing biological diversity, BSCs contribute to soil stability through increased resistance to erosion and nutrient cycling (Belnap *et al.* 2001). Lichen species diversity is poorly known in the Pacific Northwest (Root *et al.* 2011). Further, identification of BSCs at the species level is not practical for fieldwork, as it is very difficult and may require laboratory culturing (Belnap *et al.* 2001).

Biological soil crusts (BSCs) consist of lichens, mosses, green algae, fungi, cyanobacteria, and bacteria growing in a thin layer on or just below the soil surface. BSCs function as living mulch by retaining soil moisture, reducing wind and water erosion, and can be used as an indicator of a site's characteristics (Belnap *et al.* 2001). Lichen species diversity is poorly known in the Pacific Northwest (Root *et al.* 2011). Further, identification of BSCs at the species level is not practical for fieldwork, as it is very difficult and may require laboratory culturing (Belnap *et al.* 2001). Crust cover data was collected during the North Lake ESI. The data consisted of a relative crust cover ranking on a scale from 1 to 10 where:

- 0= bare ground
- 1= clearly a crust present
- 2= just Cyanobacteria present
- 4= lichens and mosses covering 1 to 5% of ground
- 6= lichens and mosses covering 5 to 10% of ground
- 8= lichens and mosses covering 10 to 20% of ground
- 10= lichens and mosses covering >20% of ground

No attempt was made to identify the species composition of these crusts. In the allotment, 56% of the acres had 1 to 5% crust cover (4) and 29% of the allotment clearly had crust present (1).

Environmental Consequences

Soil Effects Common to All Alternatives

Studies by Ponzetti and McCune (2001) examined biotic soil crust cover and composition at several locations in central and eastern Oregon in 1995. The study compared species richness of microbiotic crusts inside and outside of several exclosures to provide a grazed versus ungrazed comparison. Results of the study found that all of the sites had between one and six more taxa inside the exclosures than in the grazed pastures, with one exception, which had three more species in the grazed transect. Generally, total crust cover was inversely related to vascular plant cover, as there was a positive relationship of crust cover to available soil surfaces. Ponzetti and McCune (2001) found the differences in total crust cover and species composition between study sites were most strongly related to soil pH, electrical conductivity, and the relative calcium carbonate content of the soil. Soil chemistry and climate differences were a stronger factor affecting cover and species composition than livestock exclusion. However, the study found a lower cover of biotic crusts, lichens, and species richness in grazed areas. Generally, livestock do not graze on BSCs. The primary impact to BSCs from livestock is associated with hoof

trampling. In this respect the impacts to BSCs and soils are generally inter-related. Therefore, BLM assumes, for purposes of this analysis, the impacts to BSCs can generally be quantified by quantifying the associated impacts to soils.

The impacts of livestock grazing on soils within the Lakeview Resource Area were also analyzed in the *Lakeview Proposed RMP/Final EIS* (BLM 2003a) and that analysis is incorporated herein by reference. In summary, livestock use would continue to negatively impact soils primarily in high concentration areas which can result in compaction of soils around existing water sources and along cattle trailing areas (pages 4-35 to 4-36).

Soil Effects for Alternatives 1: No Action

There are 8 water sources within the allotment. Approximately 4 water sources are estimated to be reliable water sources on the allotment. The primary watering areas for livestock are water gaps on Bridge Creek and Buck Creek located on private lands near the allotment. There are four possible reliable water catchments that have adequate collection in the spring and may be considered reliable. There are 4 other small developments associated with the natural intermittent drainages associated with the landscape. These developments only hold water in wetter years. No perennial stream reaches are located within the allotment (Map 2).

Cattle tend to concentrate within a ¼ mile of reliable water sources (approximately 120 acres). Although there are 8 water sources present in the allotment, for this analysis only 4 are considered to be reliable (Map 2). Therefore, based on these assumptions the area estimated to be impacted by livestock concentration around reliable water sources is estimated at about 480 acres during most years (Table 5). Another 480 acres of concentrated livestock use could be expected on the 4 less-reliable water developments during very high precipitation years.

Bridge Creek Draw, although only an intermittent channel, does provide approximately 0.5 miles of riparian area that receives more concentrated livestock use. Estimating a 50-foot buffer on either side of the stream, results in an additional estimated 6 acres of concentrated livestock use.

Livestock also tend to trail along fence lines and between water sources. There are approximately 26 miles of existing fence where trailing impacts would likely occur. Assuming a 5-foot wide swath of disturbance along each fence, about 16 acres would be impacted by concentrated livestock trailing use. BLM does not have a quantifiable means of estimating disturbed acres associated with cross-country livestock trailing between water sources, but based on estimates associated with fencing, believes that it represents a very small percentage of the allotment.

The total area estimated to be impacted by concentrated livestock use during most years would be about 502 acres (approximately 8% of the allotment) (Table 5).

This alternative would continue to result in slight to moderate forage utilization and dispersed trampling effects across the majority of the allotment (92%) and continue to provide for BSC retention and litter accumulation, which in turn would result in the maintenance of existing organic matter, soil structure, and productivity across the majority of the allotment.

Table 5. Summary of Concentrated Livestock Use Associated with Water Developments and Livestock Trailing along Existing Fences

Alternative	# of Water Sources	Total acreage of concentrated livestock Use	% of concentrated livestock use
1-No Action	4	502	8%
2- Riparian Protection	4	500	8%
3- No Grazing	4	0	0

Soil Effects for Alternative 2: Riparian Protection

This alternative would have the generally the same effects on soils and BSCs as Alternative 1. The only difference would be about 2 acres less concentrated livestock use would occur in the riparian zone near South Spring as a result of the proposed fence enclosure project (Table 5).

Soils Effects for Alternative 3: No Grazing

Under the No Grazing Alternative, little change to soils or BSCs would occur on the allotment in the short-term (up to 5 years). Most of the concentrated livestock use areas land associated with water sources and the cattle trails (about 502 acres) would reclaim naturally with vegetation and BSCs over the long-term (5-10 years).

Upland Vegetation

Affected Environment

Vegetation data for the allotments comes from an Ecological Site Inventory (ESI; available in Lakeview range files) performed in the 1990s where several indicators of plant community health were collected. This ESI data is incorporated by reference in its entirety and is summarized in Table 6 and Map 5. Data includes range ecological site potential, current dominant vegetation, observed apparent trend (OAT), condition rating, and ecological status.

There are 13 different vegetation types identified in the ESI data collection effort on the Buck Creek-Bridge Creek Allotment (Table 6). The majority of the allotment (76%) has a dominant shrub component of Mountain big Sagebrush with a variety of understory grass component. Four vegetation types comprise the majority of the allotment (65%) while the other 9 make up 35% of the allotment. The four major vegetation types include 18% of the allotment dominated by Gray Rabbit brush with an understory of Thurber’s needlegrass in fair condition and a mid-ecological status. Approximately 16% of the allotment is dominated by Mountain big sagebrush with an understory of crested wheatgrass in mid and early ecological status in good condition. Another 14% of the allotment is comprised of mountain big sagebrush with an understory component of squirreltail in mid ecological status and fair condition.

Table 6. Current Dominant Vegetation in the Buck Creek-Bridge Creek Allotment

Range Site number	Range Site	Dominant Vegetation	Dominant Vegetation Code	OAT	Condition Rating	Acres	% of Area	Ecological Status
None	Unknown		Unknown			268	5%	
021XY505OR	JUNIPER CLAYPAN 12-16	Juniper, low sagebrush/bluebunch wheatgrass	JUOC/ARAR8/PSSPS/	Upward	Good	0	0%	Late
023XY320OR	JUNIPER SOUTH SLOPES 12-16	Juniper, mountain big sagebrush/bluebunch wheatgrass	JUOC/ARTRV/PSSPS/	Upward	Excel	1	0%	PNC
023XY320OR	JUNIPER SOUTH SLOPES 12-16	Juniper, mountain big sagebrush/cheatgrass	JUOC/ARTRV/BRTE/	Stable	Good	19	0%	Late
023XY659OR	FESCUE PUMICE PLAINS 8-11	Juniper, Mountain big sagebrush/ thread and needle grass	JUOC/ARTRV/STTH2/	Stable	Fair	568	9%	Mid
023XY608OR	DROUGHTY PUMICE PLAINS 8-11		Unknown			4	0%	
023XY515OR	DROUGHTY PUMICE 9-12	Mountain big sagebrush/squirreltail	/ARTRV/ELEL5	Stable	Fair	1080	17%	Mid
023XY610OR	PUMICE DUNES 8-10		Unknown			7	0%	
023XY515OR	DROUGHTY PUMICE 9-12	Mountain big sagebrush/Thurbers needlegrass	/ARTRV/STTH2	Down	Fair	35	1%	Mid
023XY514OR	PUMICE 8-10	Mountain big sagebrush/crested wheatgrass	/ARTRV/AGCR	Stable	Good	262	4%	Early
023XY515OR	DROUGHTY PUMICE 9-12	Mountain big sagebrush/crested wheatgrass	/ARTRV/AGCR	Down	Good	743	12%	Mid
023XY608OR	DROUGHTY PUMICE PLAINS 8-11		Unknown			13	0%	
023XY515OR	DROUGHTY PUMICE 9-12	Mountain big sagebrush/ Thurbers needlegrass	/ARTRV/STTH2	Down	Fair	567	9%	Mid

Range Site number	Range Site	Dominant Vegetation	Dominant Vegetation Code	OAT	Condition Rating	Acres	% of Area	Ecological Status
023XY515OR	DROUGHTY PUMICE 9-12	Mountain big sagebrush/ Thurbers needlegrass	/ARTRV/STTH2	Stable	Fair	237	4%	Mid
023XY316OR	DROUGHTY LOAM 11-13	Basin big sagebrush/ squirreltail	/ARTRT/ELEL5	Stable	Fair	78	1%	Mid
023XY210OR	PUMICE 10-12	Mountain big sagebrush/ Idaho fescue	/ARTRV/FEID	Upward	Good	64	1%	Late
023XY515OR	DROUGHTY PUMICE 9-12	Gray Rabbitbrush/ Thurbers needlegrass	/CHNA2/STTH2	Stable	Fair	1158	18%	Mid
023XY515OR	DROUGHTY PUMICE 9-12	Juniper/ Basin Big Sagebrush/ Thurbers needlegrass	JUOC/ARTRV/ STTH2/	Stable	Good	262	4%	Late
023XY210OR	PUMICE 10-12	Basin big sagebrush/ Idaho Fescue	/ARTRV/FEID	Upward	Good	717	11%	Late
023XY516OR	STONY LOAM 10-12	Basin big sagebrush/ Idaho Fescue	/ARTRV/FEID	Upward	Excel	199	3%	PNC
023XY516OR	STONY LOAM 10-12	Juniper/bitterbrush/c heatgrass/pussytoes	JUOC/PUTR2/ BRTE/ANTEN	Stable	Fair	82	1%	Mid

Utilization for the last 10 years has averaged moderate across the allotment. Several years of heavier use were observed in the South pasture of the allotment specifically along the small intermittent riparian area. Five long-term trend sites shows the allotment to be in a stable and upward trend with appropriate vegetative cover, species diversity, and cover based on OAT, P180, frequency, and photo trend analysis (Table 7).

Table 7. Ecological Trend for the Buck Creek-Bridge Creek Allotment Based on Long-term Monitoring Photos and Plots

Pasture	Monitoring plot#	Photo Trend Years Taken	Transect Method Years	OAT Trend (year)
Bridge Creek	BB-1	1970-2012	P180 (2012) vegetative cover 30% and bare ground 46%	Upward (2013)
Middle	BB-2	1970-2012	Photo trend only	Stable (2012, 2008)
Emery Seeding	BB-3	1966-2012	P180 (2012) vegetative cover 21% and bare ground 51%	Upward (2012) Stable (2008)
South Spring	BB-4	1979-2012	P180 (2012) vegetative cover 38% and bare ground 29%	Stable (2012)
Middle	BB-5	1990-2012	Nested Frequency (2012,1990)	Upward (2012) Stable (2008)

A crested wheatgrass seeding project was implemented for the majority of the Emery Seeding Pasture in 1958. This seeding has remained very stable with little maintenance. Long term trend photos show natural succession occurring with an increase of Mountain big sagebrush and rabbitbrush plants on site with abundant perennial grasses. Prescribed burn projects were implemented in 1990s to improve perennial grass abundance and diversity in the middle and bridge creek pastures. Both burn projects were successful in decreasing decadent sagebrush plants and increasing perennial grass cover. Both sites are now naturally increasing in young high vigor sagebrush and rabbitbrush species and look to be in mid seral status. Upland vegetation in the south spring pasture is mountain big sagebrush and looking at long-term trend photos some juniper treatments were implemented and overall the pasture is in late seral status.

Environmental Consequences

The impacts of livestock grazing on vegetation within the Lakeview Resource Area were analyzed in the *Lakeview Proposed RMP/Final EIS* and that analysis is incorporated herein by reference in its entirety. In summary, the vegetation composition of key species is expected to be maintained or improved over time under the rest rotation grazing system (BLM 2003a; pages 4-5 and 4-9).

Upland Vegetation Effects Common to Alternatives 1 and 2:

The upland vegetation communities would continue to be negatively impacted, primarily in livestock concentration areas near water sources and cattle trails under these alternatives. The use pattern maps (located in allotment file) and low livestock density (21 acres/AUM) in this

allotment indicate cattle use would be concentrated within 0.1 mile around existing water sources (see impact discussion in Soils and Biological Soil Crust section). An estimated 502 acres (8% of the allotment) of concentrated vegetation use or trampling would continue around associated water developments (in average years), and along fences.

These alternatives would continue to result in moderate forage utilization (vegetation removal) while continuing to provide for soil health and vegetation productivity across the majority of the allotment. The upland plant community and species composition would be maintained

Under the current grazing management (Alternative 1), the allotment is meeting Rangeland Health Standards 1 and 3 related to upland watershed function and general ecological condition (BLM 2004b, BLM 2013b). Continuing to graze as described for Alternatives 1 and 2 would be expected to continue to meet these standards. Grazing would be adjusted through the flexibility provided in the annual application process when needed to control livestock distribution, grazing utilization levels, and provide rest. The rest rotation grazing management would continue to include rest to all pastures every third or fourth year. This grazing strategy would sustain the current plant cover and species diversity. Grazing at moderate intensities would result in a continued diversity of residual grass cover heights across the allotment and continue the stable or upward trends of long-term monitoring plots on the allotment.

Upland Vegetation Effects for Alternative 3: No Grazing

Plant community shifts occur slowly in the high desert climate without the influence of a major disturbance such as fire, weed invasion, or other catastrophic event (Holechek *et al.* 2006). Under the No Grazing Alternative, there would be little or no noticeable difference in plant communities in the short-term (5 years) and only slight shifts in vegetation would occur over the long-term (10-years). The concentrated livestock use areas (502 acres) associated with fences and water sources would reclaim naturally over the long-term (10 years). Over the long-term, small changes would most likely to occur in the Middle and Bridge Creek Pastures which have the largest acreage in mid-seral stage. The changes would be an increase in shrub species, including increased mountain big sagebrush and decreases in rabbitbrush with natural successional process occurring post fire. Very minimal changes to upland vegetation are likely to occur in the Emery Seeding Pasture and the South Spring Pasture as these communities are already in a late seral stage.

Overall, the allotment would continue to provide healthy, productive, and diverse upland plant communities and would continue to meet rangeland health standards 1 and 3 over the 10-year analysis timeframe.

Stream Channels, Lotic Riparian Vegetation, and Water Quality

Affected Environment

Perennial streams are lacking and as a result, there is no fish or special status aquatic habitat within the allotment. Bridge Creek Draw is an intermittent tributary to Bridge Creek that runs through the South Spring Pasture and is the primary creek in the allotment (Map 2). South

Spring is immediately tributary to Bridge Creek Draw at the south end of the allotment; together they form the allotment's only perennial water (in the immediate vicinity of South Spring) and lotic riparian area (Map 3). The majority of Bridge Creek Draw is intermittent, but does include a narrow lotic riparian zone dominated by riparian vegetation, from the southern allotment boundary downstream about 0.25 miles, just below the confluence with South Spring; within 0.1 miles below the South Spring/Bridge Creek Draw confluence, the channel dries out and is dominated by upland vegetation.

Bridge Creek Draw through the South Spring Pasture showed evidence of degraded stream conditions by the early 1980s. Several factors contributed to these conditions including a road existing along the creek bottom, juniper invasion, and livestock grazing. A road closure along the creek bottom was implemented in the early 1990s and was coupled with the placement of woody debris in Bridge Creek Draw to trap sediment. In 1993, willows were planted on the stream banks. The pasture was rested for approximately 3 years beginning in 1993 and grazing was changed to a rest rotation system within the allotment. As a result of the restoration work and management changes, riparian conditions along the creek improved vastly. Previous areas of raw banks were re-vegetated with sedges and rushes. Some of the willow plantings were successful and established well in the riparian area. Grazing resumed in 1996 and riparian conditions have continued to improve along much of the creek. In 1997, a PFC assessment was completed on Bridge Creek Draw and found the creek to be functional at risk (FAR) with an upward trend (Table 9).

Moderate to heavy use of riparian vegetation in the South Spring Pasture was observed three times in the last 10 years, although the pasture was also rested several times. Heavy use was observed in 2009 and 2011 on this pasture. In 2012, the pasture was rested. In 2013, grazing was observed to be heavy on the riparian area. Due to the very dry conditions in 2013 and late season grazing of this pasture, vegetation grazed by livestock quickly lost moisture creating a high risk potential for deterioration of stream conditions in a small localized area. Increased exposure of bare soil along stream banks and a few nick points where possible head cuts could occur were observed. Willow plants were severely grazed within a very short period of time with no leaves present and most new shoot growth removed. This was the first year in many when grazing occurred in the fall.

In 2013, an ID team completed another PFC survey of Bridge Creek Draw and determined it to be FAR with a downward trend due to heavy livestock use in recent years on the moist meadow area (Table 9). The ID team recommended a change to the season of livestock use and construction of a protective enclosure to resolve the problem. This recommendation became the basis for consideration of Alternative 2 (Map 3).

Bridge Creek Draw is not on the Oregon Department of Environmental Quality's (ODEQ) current list of 303(d) streams or stream segments with known water quality problems. However, no water quality data exists within the allotment. Based on a recent field visit, it is likely that water quality in the immediate vicinity of South Spring has been reduced due to current grazing and the resulting riparian issue described above.

The ODEQ lists all freshwater streams in the surrounding basin as providing a number of

beneficial uses including: public domestic water, private domestic water, industrial water, irrigation, livestock water, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetics. However, no known public domestic, private domestic, or industrial water use actually occurs. South Spring (tributary to Bridge Creek Draw) does provide water for livestock and wildlife use. However, the intermittent nature of Bridge Creek Draw limits or impacts its ability to provide other listed beneficial uses in any given year.

Environmental Consequences

Effects of Alternative 1 - No Action

Under Alternative 1, no changes would be made to the current grazing strategy. Since the current strategy has led to a downward trend in riparian conditions at the most important riparian area in the allotment (South Spring/Bridge Creek Draw), the current downward trend in riparian conditions would be expected to continue with implementation of this alternative. In addition, water quality near South Spring would continue to be negatively impacted by livestock use during those years when livestock graze the South Spring Pasture.

Effects of Alternative 2 – Riparian Protection

Alternative 2 would remove grazing from the most important riparian area in the allotment (South Spring/Bridge Creek Draw), which would lead to rapid improvement in stream channel, riparian, and water quality conditions in that location.

Effects of Alternative 3: No Grazing

Alternative 3 would provide the most rapid rate of recovery of stream channel, riparian, and water quality conditions near South Spring/Bridge Creek Draw of the three alternatives, as all grazing related impacts would be alleviated.

Noxious Weeds and Invasive Nonnative Plant Species

Affected Environment

Two noxious weed species are present in or near the allotment. A small infestation (approximately 5 plants) of Canada thistle was found within the riparian area near South Spring. Canada thistle is a colony-forming perennial that spreads both from deep and extensive horizontal roots and from seeds. This species is common to many riparian areas and disturbed areas across the Lakeview Resource Area; however it is less common in the general vicinity of the Buck Creek-Bridge Creek Allotment.

The second potential noxious weed threat to the allotment is medusahead rye. There are currently no known medusahead sites within the allotment, however, it is slowly invading many surrounding areas. Historically medusahead has been more competitive in heavy clay soils. However, during the past five years it has been invading many new areas, even those with

productive soil types such as the cobbly ashy sandy loam and well-drained soils typical in the allotment.

The BLM has an on-going integrated noxious weed management program (BLM 2004a) that would continue to be implemented regardless of the alternative selected as the final decision. The impacts of that program are discussed further in the cumulative effects section of this EA. The following section focuses on the impacts of the livestock grazing management actions proposed in the three alternatives on the potential for weed invasion and expansion within the allotment.

Impacts Common to Alternatives 1 and 2:

Good range conditions decrease the likelihood of weed establishment and increase the resiliency to weed invasion. The current lack of noxious weeds within majority of the allotment indicates that the current grazing management strategy is providing for healthy native plant communities capable of limiting the invasion or spread of weeds within the majority of the allotment and this trend would be expected to continue under both Alternatives 1 and 2.

However, more and new noxious weeds invade the Lakeview Resource Area every year. New noxious weeds could potentially invade if the cattle graze weed infested areas prior to entering the allotment. Noxious weeds seeds have the ability stick on the hairs of livestock and wildlife allowing transport to other areas. The areas of highest risk would be where livestock concentrate near water sources and cattle trails which results in bare soils and provides potential sites for weed establishment. If established, weeds could spread to other un-infested areas.

There is one small infestation of Canada thistle that was found in the South Spring riparian area in 2013. Continued disturbance of this riparian area under Alternative 1 may have the potential to cause this infestation to expand within the riparian area, as well as other areas within the allotment. However, BLM staff have observed many locations in the Lakeview Resource Area where Canada thistle was present and grazing was subsequently excluded, that Canada thistle actually increased inside the exclosure. This appears to be due to livestock eating the flower heads and reducing or preventing seed production, and limiting weed spread to colonization and movement of root fragments. This appears to reduce the risk of long distance spread of seeds due to wind/water movement, as well as lower the potential for the seeds to spread on the hair of livestock and wildlife.

Under Alternative 2 livestock disturbance would be removed from the riparian area, allowing the native vegetation to recover and compete with the Canada thistle in the South Spring riparian area. The improved vigor of the vegetation inside the exclosure would also assist with preventing other noxious weeds from invading the area. However, the removal of cattle from this area would not necessarily prevent the Canada thistle from spreading within the riparian area, as discussed above. Without cattle grazing off the flower heads, the thistle would have an increased ability to produce seed, which could be carried to other locations due to the high winds and intermittent water flow through the Bridge Creek Draw area.

Alternative 3: No Grazing

The impacts of the No Grazing Alternative on the potential for weed invasion and spread would be mixed. The removal of grazing would provide less opportunity for weed introduction, spread, or establishment across the majority of the allotment. Further, the areas of concentrated livestock use near water sources trailing areas would gradually recover over the long-term (10 years) providing less bare ground for potential weed establishment. However, the impacts near the South Spring riparian area would likely be similar to Alternative 2.

Wildlife and Special Status Species

Affected Environment

The Rangeland Health Assessment for the Buck Creek/Bridge Creek Allotment determined that Rangeland Health Standards 3 and 5 related to ecological conditions and wildlife habitat were being met (BLM 2004b). A mix of mountain big sagebrush communities intermingled with Western Juniper Communities with smaller areas of low sagebrush, basin big sagebrush, and rabbitbrush make up the overstory vegetation of the allotment. Minimal native grasses and forbs, as well as, nonnative grass species compose the vegetative understory. Competition for water can occur between wildlife and livestock in areas where water is scarce. However, water for wildlife is available from livestock water developments (waterholes, reservoirs, and developed springs), along with intermittent flows in Buck Creek and Bridge Creek Draw.

The allotment falls within the larger Oregon Department of Fish and Wildlife (ODFW 2003) 974-square mile Silver Lake big game habitat management unit. The allotment comprises a small percentage of the unit and provides habitat capable of supporting mule deer. Mule deer populations are relatively stable within this unit and continue to fluctuate at or slightly above ODFW's population management objectives for the unit (ODFW 2003). Of this Herd Unit, the area within the allotment provides spring-fall habitat for mule deer, including fawning habitat. An expanding population of Rocky Mountain elk also occurs within the allotment, but is limited by disease mortality currently being monitored by the ODFW. There are currently 172 AUMs of forage allocated for big game and other wildlife species within the allotment (BLM 2003b, pages A-102). Based on previous consultation with ODFW biologists, this forage allocation is adequate to support big game populations within the allotment.

Other typical mammals likely within the allotment include jackrabbits, cottontails, coyotes, ground squirrels, chipmunks, marmots, bobcats, mountain lions, badgers, bats, and other common shrub-steppe mammal species. In some areas porcupines and bears have been seen.

Some migratory birds use all habitat types found in the allotment for nesting, foraging, and resting as they pass through on their yearly migrations. There has been no formal monitoring of migratory birds on this allotment. Common species observed or expected to occur based on species range and vegetation in the allotment are included in the following table (birds identified under the Migratory Bird Treaty Act of 1918, as amended).

Birds of Conservation Concern for the Great Basin Region that may inhabit the allotment are also included in Table 8. Waterfowl may frequent the allotment during migration and a few pairs may breed on the private reservoirs in the area. The 1988 amendment to the Fish and Wildlife Conservation Act mandates the U.S. Fish and Wildlife Service (USFWS) to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species

Table 8. Wildlife Species with Special Management Considerations

Species	General Habitat	Species Status	Birds of Conservation Concern	Migratory Birds	Focal Species	Game Birds Below Desired Condition	Eagle Act
Prairie Falcon	Cliff-open habitat				x		
Ferruginous Hawk	Sagebrush-shrub steppe	**SSS	x	x	x		
Golden Eagle	Elevated nest sites in open country		x	x			x
Kit Fox	Arid shrub-steppe	**SSS	x	x	x		
Peregrine Falcon	Cliff-open habitat	**SSS	x	x			
Loggerhead Shrike	Open country/scattered trees/shrubs		x	x	x		
Swainson’s Hawk	Open Habitat			x			
Bald Eagle	Wetlands/River Systems/Lakes	**SSS	x				x
Burrowing Owl	Grasslands-shrub steppe	**SSS		x	x		
Brewer’s Sparrow	Sagebrush clearings in bitterbrush		x	x	x		
Pygmy Rabbit	Sagebrush with deep soils	**SSS					
Pallid Bat	Arid regions/rocky outcroppings	**SSS					
Townsend’s Big-eared Bat	Lava fields /Rocky Cliffs /Abandoned Structures	**SSS					
Northern Harrier	Wetlands/Ponds/Riparian Areas			x			

*FC – Federal Candidate Species

**SSS – Special Status Species

Act (ESA) of 1973.” *Birds of Conservation Concern 2008* (USFWS 2008) is the most recent effort to carry out this mandate.

Partners in Flight use the focal species approach to set biological objectives and link priority species with specific conservation recommendations. It is a multi-species approach in which the ecological requirements of a suite of focal species are used to define an 'ideal landscape' to maintain the range of habitat conditions and ecological processes required by landbirds and many other species. Focal species are considered most sensitive to or limited by certain ecological processes (*e.g.* fire or nest predation) or habitat attributes (*e.g.* patch size or snags). The requirements of a suite of focal species are then used to help guide management activities.

Migratory game bird species identified by the USFWS that represents species whose population is below long-term averages or management goals, or for which there is evidence of declining

population trends, and may be present in the allotment, are also included in Table 8. Golden and bald eagles are 2 species given special protection under the Bald Eagle Protection Act of 1940 (as amended).

There are also numerous amphibian and reptile species that may occur within the allotment including fence lizards, sagebrush lizards, gopher snakes, rattlesnakes, horned-lizards, and other common shrub-steppe species.

Special Status Wildlife Species

BLM policy on special status species (listed in Table 8) is to conserve those species and the ecosystems upon which they depend (BLM 2008c). There are no wildlife species classified as federally-listed Threatened or Endangered or proposed or designated critical habitat within the project area. In addition, the allotment does not provide habitat for the Greater sage-grouse. Therefore, these species will not be analyzed further.

The allotment lies within the northern range of the kit fox, a bureau sensitive species, in Oregon. No kit fox have been documented within the Lakeview Resource Area; however, potential habitat does exist. No surveys have been conducted for kit fox in the allotment and due to the low potential for occurrence of denning/foraging habitat, none of the alternatives would likely have any measurable impacts to kit fox. Therefore, they are not carried forward for further analysis.

While potential habitat for pygmy rabbits (BLM sensitive species) was identified in the Rangeland Health Assessment (BLM 2004b), this species has not been confirmed in the allotment to date.

Potential Burrowing owl habitat exists within the allotment and owls have been observed at several locations within the general area.

Peregrine falcons (BLM sensitive Species) have been observed in the general area due to releases from the Summer Lake hack site; however, no nesting has been documented within the allotment and therefore, this species will not be carried forward for further analysis.

Foraging habitat for Ferruginous hawks may exist within the allotment. However, no surveys have been conducted to confirm its presence within the allotment (BLM 2004b). Due to its habitat preferences, no nesting habitat likely exists in the allotment.

Currently, there are no known nests or nesting habitat for Bald eagles within the allotment. However, there are two nests within the vicinity of this allotment. One nest occurs on Forest Service land and one on private land. They are commonly seen foraging on carrion and roosting along Buck Creek in the winter. There are no confirmed Golden eagle nests within the allotment, however, they can be seen at most times of the year foraging in the area.

Special status bats may occur within the allotment, but likely only involve occasional migrating individuals or animals foraging or passing through from adjacent habitat. There are no known

caves, adits, shafts, or outbuildings on the BLM portion of the allotment capable of providing hibernacula for bats. Habitat is unknown on adjacent private and Forest Service lands. Due to the low potential for occurrence and lack of roosting/resting habitat, none of the alternatives would likely have any measurable impacts to bats. Therefore, they are not carried forward for further analysis.

Environmental Consequences

Effects for Alternative 1 – No Action

An estimated 502 acres (8%) of predominantly sagebrush/bitterbrush habitat types within the allotment would continue to be impacted by concentrated livestock use associated with trailing and congregating near existing water sources, while impacts to habitats across the majority of the allotment would be dispersed and much less concentrated. The existing vegetation communities contain a diversity of native grasses, forbs, and shrubs that would be maintained across the allotment through continuation of the current grazing management (Refer to the Upland Vegetation section). Current livestock grazing management does not appear to be substantially affecting this habitat. The allotment would continue to provide adequate quality wildlife habitat that is capable of supporting an appropriate assemblage of sagebrush-dependent wildlife species, including migratory birds, and special status wildlife species. Rangeland Health Standards 3 and 5 (BLM 2004b, 2013b) would continue to be met over the 10-year life of the permit.

However, riparian wildlife habitat conditions in the South Spring area would continue to be limited or negatively impacted by livestock grazing use.

Effects for Alternative 2 – Riparian Protection

Under this alternative, about 2 acres of riparian habitat in the South Spring area would improve over time and provide improved habitat for wildlife in the future. All other impacts to wildlife species and their habitat would be similar to Alternative 1.

Effects for Alternative 3 -No Grazing

Under this alternative there would be very little change in the existing quality or quantity of wildlife (including migratory birds and special status species) habitat available in the allotment in the short-term (5 years) compared to the Alternative 1.

An estimated 502 acres (8%) of sagebrush habitat within the allotment formerly impacted by livestock trailing and concentration near existing water sources would improve over the long-term (10-years) and provide some increased forage availability for wildlife.

The allotment currently meets Rangeland Health Standards 3 and 5, and provides quality wildlife habitat and forage, and would continue to do so over the 10-year analysis timeframe.

Livestock Grazing Management

Affected Environment

The Buck Creek-Bridge Creek Allotment is categorized as an “M” or “maintain” category allotment and this category is determined by the following set of criteria in 1986:

- Present range condition is satisfactory
- Allotment has moderate to high production potential and is currently producing near potential
- No serious conflicts or controversy exists
- Opportunity may exist for positive economic returns
- Present management is satisfactory

The Buck Creek-Bridge Creek Allotment has 5,910 acres of public land and 459 acres of private land. The allotment is currently grazed with a total of 309 AUMs from 5/1-10/15. The current stocking rate is 21 acres/AUM which is within the productivity range for the range sites within the allotment. Use prior to 1950 was allotted at 339 AUMs. A range survey completed in 1957 estimated forage on the allotment at 369 AUMs. However, due to increased abundance of wildlife (mule deer and elk) on the allotment livestock permitted use was decreased to 229 AUMs. After crested wheatgrass was planted in 1958 and forage conditions improved, an increase in AUMs was approved in 1965 to the current stocking rate of 309 AUMs. Based on long-term trend and recent utilization data (BLM 2013b), this stocking rate continues to be appropriate today.

A draft allotment management plan (AMP) included 5 management objectives to increase bitterbrush, reduce soil erosion on Bridge Creek Draw, increase forage production, and increase AUMs on the allotment (BLM undated). Although the AMP did not progress past the draft stage, much of the plan was implemented. This included implementation of a rest rotational grazing system, changes in increased rest to the south spring pasture to improve soil erosion, and juniper and prescribe fire treatments to improve forage conditions. The AUMs were never increased.

There are 4 pastures in the allotment grazed in a rest-rotational system (Table 9). The Emery Seeding Pasture was planted with crested wheatgrass in 1958. This pasture has typically been used later in the fall as livestock come home and has averaged moderate utilization in the pasture. The Middle and Bridge Creek Pastures were treated with prescribed fire in the 1990s to increase perennial grass vigor and abundance, and reduce decadent sagebrush. These burns were successful and both pastures are grazed summer and fall and average moderate utilization levels. The South Spring Pasture has typically received early summer use and occasional some fall use. This pasture has received moderate utilization levels averaged for the last 10 years.

Table 9. Rotational Grazing system example on the Buck Creek Bridge Creek Allotment

	Year 1	Year 2	Year 3	Year 4	Year 5
South Spring	Rest	5/1-6/15	Rest	5/1-6/15	5/1-6/15
Middle	5/1-6/15	Rest	6/16-8/1	9/1-10/15	6/16-8/1
Bridge Creek	6/16-8/1	6/16-8/1	5/1-6/15	Rest	8/2-9/15
Emery Seeding	8/2-10/15	8/2-10/15	8/2-10/15	6/16-8/31	Rest

The rest-rotation grazing system has generally been successful in providing needed rest for vegetation health. A rangeland health assessment was performed (BLM 2004b) to determine if management met the *Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington* (BLM 1997a). The RHA was reviewed again as part of this environmental analysis. The assessment found that existing grazing management practices and levels of grazing use in the Buck Creek-Bridge Creek Allotment (#00702) met four out of the five standards. The findings of the assessments for this allotment are summarized in Table 10 and are incorporated in their entirety herein by reference (BLM 2004b, 2013b).

In 2013, an ID team identified a small riparian area of concern in the South Spring Pasture with heavy grazing on the riparian plants in the fall along Bridge Creek Draw. This area has historically had issues with erosion and riparian degradation. Much improvement along Bridge Creek Draw has occurred between from 1980 to today photos taken during this timeframe. However, during the last 5 years drought conditions have persisted and some heavy livestock use occurred in the pasture in 2009, 2011, and 2013. Willows use in 2013 was observed to be 70%. As a result, the area failed to meet rangeland health standard 2. The ID team recommended a change to the season of livestock use and construction of a protective enclosure to resolve the problem. This recommendation became the basis for consideration of Alternative 2 (Map 3).

Environmental Consequences:

Livestock Grazing Effects for Alternative 1: No Action

Actual use, utilization, and climate data have been summarized in the allotment monitoring file and indicate livestock grazing levels are sustainable at the current forage allocation (309 AUMs) for the allotment. The average use for the last 10 years has been 301 AUMs based on actual use reports. Trend photos on five long-term trend transects indicate a stable trend in vegetation communities across the majority of the allotment (Table 7). Current livestock grazing management is maintaining a vegetative community that supports other resources objectives and uses. Existing range improvements would be maintained as needed to support continued livestock management objectives.

The current rest rotation grazing system is meeting most rangeland health standards (Table 10) and would continue to do so over the 10-year life of the permit. However, riparian conditions near South Spring would not improve and the allotment would likely continue to fail to meet rangeland health standard 2 for this reason.

Livestock Grazing Effects for Alternative 2: Riparian Protection

Effects to livestock grazing under Alternative 2 would be very similar to Alternative 1 across the majority of the allotment. In Alternative 2, livestock use in the South Spring Pasture would be limited to the spring and summer seasons and would be completely excluded from approximately 2 acres of moist meadow on Bridge Creek Draw near South Spring. The allotment would make significant progress toward meeting and within approximately 5 years possible meet Standard 2

Table 10. Summary of Rangeland Health Assessment for Buck Creek-Bridge Creek Allotment (BLM 2004b, 2013b)

Standard	2004	2013	Comments
1. Watershed Function – Uplands	Met	Met	Upland soils in the Buck Creek Bridge Creek Allotment exhibit infiltration and permeability rates, moisture storage, and stability appropriate for soil, climate, and land form. Root occupancy for the soil is appropriate. The plant composition and community structure is defined by the soil type and precipitation zone. The entire allotment has a soil surface factor rating of slight, with the majority of the allotment in a static observed apparent trend, and the majority of vegetation in the late seral stage based on Ecological Site Inventory (ESI) data.
2. Watershed Function Riparian/ Wetland Areas	Met	Not Met	<p>South Spring and a portion of Bridge Creek Draw runs through the South Pasture of this allotment. In 1997, a PFC assessment was completed on Bridge Creek Draw and found the creek to be FAR with an upward trend. In 2013, a PFC assessment rated Bridge Creek Draw to be FAR with a downward trend due to heavy use in recent years on the moist meadow area. Otherwise, this lentic system is in balance with the water and sediment being supplied and continues to have vegetative species present to maintain riparian and wetland soil characteristics. A change to the season of livestock use and protective enclosure are recommended to resolve the downward trend in PFC in this location.</p> <p>In the 2004 RHA, over 500 acres of palustrine wetlands were described collectively within the 00700-00716 series of allotments (which included 00702) as being in PFC. Based on a review of the USFWS National Wetland Inventory dataset, there are 7 polygons scattered across the allotment classified as palustrine wetlands which total less than 3 acres. (Two of these occur at South Spring and have already been discussed above). Based on a comparison with BLM’s water development dataset, 4 of these which the USFWS classified as “freshwater ponds” actually represent constructed livestock waterholes (Seeding, Lake, and Staked) or reservoirs (Ted) devoid of wetland vegetation. The fifth is erroneously classified as a “freshwater emergent” wetland, but is actually an unvegetated playa. None of these 5 areas actually meet the definition of a wetland and were, therefore, not reassessed in 2013.</p>
3. Ecological Processes	Met	Met	There is a diverse and vigorous plant composition and community structure of forbs, grasses and shrubs. Prior to 2013 there were no noxious weeds documented within the allotment. During an ID Team tour a small infestation of Canada thistle was found at the proposed enclosure site. The allotment provides important wintering habitat for populations of mule deer. There is adequate species diversity of wildlife within this allotment.
4. Water Quality	NA	NA	This standard is not applicable as there are no perennial streams in this allotment. Bridge Creek Draw within this allotment is intermittent and is not on the ODEQ’s current list of 303(d) streams with known water quality problems. Buck Creek and Bridge Creek follow along the edge of the allotment on private property only.
5. Native, Threatened or Endangered, and Locally Important Species	Met	Met	No known locally important or sensitive plants species are currently known to occur on the allotment. It is suspected that peregrine falcons are occasional visitors to the allotment although no good foraging area exists on the allotment. Ferruginous hawk may occur and some foraging areas do occur within the allotment. Mule deer populations and some elk occur on the allotment. No resource conflicts currently occur between wildlife species and livestock grazing on this allotment.

with an increased rate of recovery to moist meadow and riparian vegetation located within the enclosure.

Livestock Grazing Effects for Alternative 3: No Grazing

Under this alternative, livestock grazing would not be authorized on the allotment. The permittee would need to replace the 309 AUMs of lost forage at his own expense. These costs are discussed further in the social and economic section.

The permittee could continue to graze approximately 459 acres of private land within the allotment. However, without the benefit of new management fences along the property line, livestock grazing would be uncontrolled and unauthorized livestock use would be likely to increase. Existing range improvement projects on public land within the allotment would not be maintained.

The allotment would continue to meet Rangeland Health Standards 1, 3, 4 and 5 for the next 10 years. The allotment would make substantial progress towards meeting Rangeland Health Standard 2 more quickly under this alternative than all the other alternatives, possibly less than 5 years.

Social and Economic Values

Affected Environment

The economy of Lake County is based primarily on agriculture, timber, livestock, and government sectors. Livestock grazing and associated feed production industries are major contributors to the economy of Lake County. The most common is the raising of cattle and calves for beef. In 2012, an estimated 54,000 cow/calves were in Lake County Oregon (Pete Schreder, Personal Communication, Lake County Agricultural Extension Agent, November 14, 2012). In 2012, Lake County ranchers sold an estimated \$38,000,000 worth of cattle and calves or related beef products from public lands.

The allotment accounts for a total of 309 AUMs. This would produce enough forage for approximately 26 animals. Assuming 2 are bulls and an 85% calf crop this number of AUMs could produce about 20 calves for market each year.

Environmental Consequences

Effects Common to Alternatives 1-3:

Public lands in and around the allotment would continue to contribute social amenities such as open space and recreational opportunities. These amenities encourage tourism in the surrounding region and provide economic benefits to the nearby community of Silver Lake, though the specific contribution of this small allotment cannot be accurately estimated.

Effects Common to Alternatives 1 and 2:

Under Alternative 1 and 2 the Federal Government would continue to collect grazing fees (309 AUMs X \$1.35) which amounts to about \$417 annual revenue. The permittee would continue to

produce about 20 calves each year providing continued economic stability for the livestock operator. This would contribute less than 1% of the total county-wide annual cattle production.

Effects for Alternative 3: No Grazing

A loss of about \$417 would occur to the Federal Government due to the loss of grazing fees collected from the permittee. This alternative would also result in the loss of suitable grazing land for the local rancher who would then need to find suitable pasture or hay elsewhere. The current cost of hay is approximately \$153/ton (Oregon-Washington weekly hay report). It would take approximately 0.23 tons of forage to feed one 600 pound stocker calf for one month (based on a cow eats approximately 2.5% of their body weight each day). This equals to approximately \$34 of feed per cow per month. The average pasture rate for private land forage in Oregon is \$15 AUM (DOI price for non-willful grazing charge based on current private land pasture rate). The additional annual cost to the rancher for renting private pasture land would be approximately \$4,635.

If the rancher was required to sell his livestock and run 26 fewer cows and lose 20 calves of annual production, he would lose annual revenue of about \$120,000 (Based on the 2013 April report of \$160/cwt.; Stockmans Journal, 2013). This estimate would vary every year depending on the price of beef and the weight/condition of the calves at the time of sale.

Native American Traditional Practices and Cultural Resources

Affected Environment

Traditional Use Areas: The allotment is within the area which would have been used by either the Klamath or the Yahooskin Band of the Northern Paiute, or possibly both. These groups may have used the area at the same time or at separate times. There are no known traditional use areas within the allotment. The area of Silver Creek is reported to be of interest to the Klamath Tribes, but no specific locations have been identified. Primarily they appear to be interested in the obsidian source in the region and the numerous archaeological sites found along Silver Creek. Potentially interested tribes will be notified of the availability of this EA and provided an opportunity to provide input on potential traditional uses within the allotment.

Cultural Resources: Only about 10% of the allotment has been surveyed for cultural resources. Surveys have been done around range developments, fire rehab projects, and other past ground-disturbing projects in the general area. This represents a resource for which there is “incomplete or unavailable information”. According to the CEQ’s NEPA regulations (40 CFR Part 1502.22), when an agency is evaluating impacts and there is incomplete or unavailable information, the agency must make clear that such information is lacking. Further, if the information “cannot be obtained because the cost of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include.... (1) a statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts....; (3) a summary of the existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant

impacts... and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community...”.

The DOI NEPA regulations state that these costs are not just monetary, but can also include “social costs, delays, opportunity costs, and non-fulfillment or non-timely fulfillment of statutory mandates” (43 CFR Part 46.125). The costs of obtaining a comprehensive survey of cultural resources across the five allotments is estimated at \$800 to \$1080 per acre based upon current costs for contract survey work. Surveying the remaining 6,000 acres unsurveyed acres within the allotment would cost approximately \$4,800,000 to \$6,480,000 and is considered to be exorbitant. Nevertheless, the following section describes what is known about existing cultural/historic resources in the allotment based on past surveys, followed by a discussion of potential impacts to those resources.

Five cultural resources sites have been recorded in the allotment to date. Due to the nature of the environment and the occurrence of obsidian in the area, it is expected that many more sites would be recorded if a complete survey of the area were feasible. Sites expected to be found in the area would likely include lithic scatters, temporary campsites or occupation sites, obsidian quarry sites, stone house rings, rock art and hunting locations.

Environmental Consequences

Effects Common to Alternatives 1 and 2:

Since no Traditional Cultural Properties are known for the area, continued livestock grazing under Alternatives 1 and 2 would not likely have an impact upon traditional cultural resources which are of National Register Quality or are listed on the National Register.

Since a complete cultural inventory of the allotment is not feasible, the overall impact from the current level of grazing under Alternatives 1 and 2 upon cultural sites cannot be precisely determined at this time. It is unknown to what extent livestock may currently be impacting cultural resource sites within the allotment. There have been few, if any, studies of livestock trampling impacts to cultural resources, but based on field observations by BLM cultural resources staff, concentrated livestock use can impact cultural materials located in the soil profile. These effects could include ground cover removal, surface scuffing, and hoof shear. Cultural materials within the top 12 inches of soil are the most susceptible to exposure and trampling damage, potentially resulting in reduced site integrity. The deepest disturbance is typically seen at wet sites located in congregation areas (near water sources and trailing areas) where concentrated hoof shear and soil layer mixing is common. Artifacts can be mixed between layers of the soil profile, moved both vertically and horizontally, or broken and chipped. These effects would be most evident in the 502 acres of highest livestock concentration, if sites are actually present in these areas. In addition, removal of vegetation, especially within concentration areas can lead to erosion by wind and water, further exposing cultural materials near the surface. Dispersed grazing, across the vast majority of dry uplands (away from natural water sources) may cause light hoof shear and surface scuffing over time.

The area around South Spring, where the proposed fence is located under Alternative 2, has been surveyed for cultural resources and none were found. Therefore, the proposed enclosure fence would have no effect upon cultural resources.

Maintenance of existing range developments would have little or no additional impact on cultural resources beyond those that may have occurred when the improvement was originally constructed.

Effects of Alternative 3: No Grazing

This alternative would eliminate all trampling impacts to cultural sites within the allotment. It would remove the impacts of hoof punching in wet soils near water sources which may be impacting some cultural sites within the allotment.

Recreation

Affected Environment

The allotment is part of the North Lake Special Recreation Management Area (SRMA), which focuses recreation management resources in an area with a greater concentration of recreation sites and associated demand for off-highway vehicle (OHV) use, as compared to the rest of the Lakeview Resource Area. Use of motorized vehicles in the SRMA is generally “Limited to Existing Roads and Trails”, where cross-country travel is prohibited. Additionally, the allotment is within the Mule Deer Winter Range Closure, which further restricts motor vehicles use seasonally to designated roads and trails December 1st through March 31st (see Map R-7, BLM 2003b).

Recreation along the Bear Flat Lane (County Road 4-10), within a half mile, is currently managed for “Rural” recreational activities, opportunities, and experiences within the allotment (1,177 ac./20%). Outside of this corridor, recreation is managed primarily for “Semi-Primitive Motorized” activities, opportunities, and experiences (4,702 ac./ 80%) (see Map R-3, BLM 2003b).

Pockets of vegetation and topographic screening provide opportunities for some degree of solitude within the allotment where a visitor could avoid the presence of others. The primary recreation activities are upland game bird (e.g., chukar and quail) and big game (e.g., elk, and mule deer) hunting. Other recreation activities that may occasionally occur in the allotment include: wildlife viewing, photography, hiking, horseback riding, ATV riding, and target shooting. There are currently no developed recreation sites within the allotment, nor are any planned for the future.

Environmental Consequences

Effects of Alternative 1; No Action

Continuing grazing management under the No-Action Alternative would continue to have minimal effects to recreation opportunities across the allotment. Current levels of recreation activities, opportunities, and experiences would remain relatively constant into the foreseeable future.

Effects of Alternative 2: Riparian Protection

Generally, the effects of Alternative 2 would be similar to Alternative 1 across the majority of the allotment. The proposed fence would create a new barrier to those hiking or riding horses across the allotment. This would somewhat diminish the recreational experiences related to activities dependent on unconfined space. However, due to the proposed location at the southernmost boundary of the allotment, small size (2 acres), and the relatively short length, this impact would likely have little if any impact to those recreating in the area. In the long run, the improved ecological condition of the riparian area would benefit users seeking a more natural functioning environment in which to pursue recreational activities.

Effects of Alternative 3: No Grazing

The No-Grazing Alternative would enhance some recreation activities, opportunities, and experiences in the allotment, while possibly diminishing others. Those seeking more natural or primitive recreation experiences would benefit by the removal of livestock grazing due to the permanent absence of the sights and sounds of cattle, the eventual improved ecological condition of the allotment (particularly associated with cattle trails and impacts around watering/gathering areas), and the potential for some livestock facilities to be deemphasized and begin to blend more into the landscape due to lack of use. Conversely, this alternative would reduce opportunities and experiences for wildlife viewers and hunters, if existing water developments become less effective at holding water for wildlife due to lack of maintenance.

Visual Resources

Affected Environment

The visual setting of allotment consists of a flat, gently sloping southwest to northeast (4,990 - 4,420 ft.) flank of Yamsay Mountain, between Buck and Bridge Creeks, terminating at the western edge of Paulina Marsh. The allotment is primarily dry, and is comprised of dark yellows, tans, greys, and dark greens of Juniper, mountain big sagebrush, grey rabbit brush, Thurber's needlegrass, squirelltail, and crested wheatgrass (see Upland Vegetation section).

Observable developments in the area include 5 waterholes, 1 reservoir, 1 well, and 1 developed spring, 2.1 miles of double-lane county roads, 18.4 miles of open BLM roads and primitive motorized routes (which include 2 cattle guards), 1 miles of reclaiming motorized routes, 0.5 miles of reclaiming cat lines (from past fire suppression), 1,695 acres of prescribed burning

(completed in early 1990s), 802 acres of seeding, and 2 small mineral pits on BLM land (see also cumulative effects section).

The allotment is also within the Oregon Outback National Scenic Byway corridor along State Highway 31. Management direction generally requires all projects within visible portions of the corridor be designed to maximize scenic quality and minimize scenic intrusions (BLM 2003a, page 88). Furthermore, the allotment is managed according to Visual Resource Management classes VRM III and VRM IV (Table 11).

Table 11. Visual Resource Management Classes in the Allotment

Allotment	VRM III* (acres/%)	VRM IV** (acres/%)	Scenic Corridor (acres/%)
Buck/Bridge Creek	1,614 / 27	4,265 / 73	2,136 / 36

*VRM III is to “partially retain the existing character of the landscape, moderate levels of change are acceptable.”

**VRM IV is managed to allow for “major modifications to the landscape,” though “every effort should be made to ... minimize disturbances and design projects to conform to the characteristic landscape” (BLM 2001, page 290).

Environmental Consequences

Effects of Alternative 1; No Action

Continued livestock grazing management under this alternative would continue to have minimal effects to existing visual quality. Current visual objectives for VRM Classes III and IV, as well as the area’s scenic corridor standards would continue to be achieved.

Visual Resource Effects to Alternative 2: Riparian Protection

Generally, the effects of Alternative 2 on visual quality would be similar to Alternative 1 across the majority of the allotment. The proposed exclosure fence would have slightly negative localized impacts to visual resources in the South Spring Pasture. However, negative impacts would to the scenic corridor be alleviated due to the proposed location having both topographical and vegetative screening. Additionally, the eventual visual benefits of a natural and esthetically pleasing, properly functioning riparian area would benefit the overall visual quality of the area in the long run. Visual objectives for VRM Classes III and IV, as well as the area’s scenic corridor standards, would continue to be achieved.

Effects of Alternative 3: No Grazing

The No-Grazing Alternative would moderately enhance visual resources in the allotment by the improvement in esthetically pleasing upland plant ecosystem (e.g. naturally recovering cattle trails and trampled areas around water sources). The visual impacts of observable developments (motorized routes, fences, and water developments) scattered across the allotment would likely remain indefinitely until such time that they either deteriorate or funds and resources were made available to facilitate their removal. Visual objectives for VRM Classes III and IV, as well as the area’s scenic corridor standards, would continue to be achieved.

Cumulative Effects

Analysis Scale and Timeframe

For the purposes of this analysis, cumulative impacts are generally addressed at the allotment scale. The reason for choosing this analysis scale is issuing a permit affects the entire allotment and BLM has perspective on other potential reasonably foreseeable actions that may occur within the allotment due to management direction identified in the *Lakeview RMP/ROD* (see Appendix E, as maintained, BLM 2003b). However, the analysis spatial scales could vary somewhat depending upon the resource value/use being addressed. The timeframe of analysis is defined as the same 15-20 year expected life of the *Lakeview RMP/ROD*. The reason for choosing this timeframe is it represents the same analysis timeframe considered in the *Lakeview Proposed RMP/Final EIS* (BLM 2003a) and portions of that analysis may be appropriate for tiering purposes. However, it is important to realize that the RMP/ROD has already been in effect for 11 years of its planned 15-20 year plan life-expectancy. The grazing permit renewal period covers a 10-year period, making the end of the permit period correspond closely with the end of the analysis period already addressed in the *Lakeview Proposed RMP/Final EIS* (BLM 2003a).

Known Past Activities

The Council on Environmental Quality (CEQ) issued cumulative impact guidance on June 24, 2005, that states the “environmental analysis required under NEPA is forward-looking,” and review of past actions is required only “to the extent that this review informs agency decision-making regarding the proposed action.” Use of information on the effects of past action may be useful in two ways: one is for consideration of the proposed action’s cumulative effects, and secondly as a basis for identifying the proposed action’s direct and indirect effects.

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

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

The Department of Interior issued some additional guidance related to past actions which state,

“when considering the effects of past actions as part of a cumulative effects analysis, the Responsible Official must analyze the effects in accordance with 40 CFR 1508.7 and in accordance with relevant guidance issued by the Council on Environmental Quality, such as “The Council on Environmental Quality Guidance Memorandum on Consideration of Past Actions in Cumulative Effects Analysis” dated June 24, 2005, or any superseding Council on Environmental Quality guidance (see 43 CFR 46.115)”.

Based on this guidance, BLM has summarized known disturbances from past or on-going management activities that have occurred on BLM-administered lands which may contribute to cumulative effects within the allotment. These include: livestock grazing, range improvement construction and maintenance, fire and fire suppression and rehabilitation activities (including seeding), road maintenance, and dispersed recreational use. These same kinds of activities have also occurred on private and Forest Service lands within or immediately adjacent to the allotment.

The area within the allotment has historically been grazed by cattle. Prior to the Taylor Grazing Act of 1935, grazing on public lands was essentially uncontrolled. After the Taylor Grazing Act, allotments were established tied to private base property owned by a permittee, and were initially under the management responsibility of the Grazing Service. The current stocking level on the Buck Creek-Bridge Creek Allotment has remained the same since 1968.

As described previously, there are approximately 502 acres of ground disturbance associated with high concentration livestock use (8% of the allotment) near existing fences, 4 reliable water developments, and one intermittent stream segment. While there are a total of 5 waterholes, 1 reservoir, 1 well, and 1 developed spring in the allotment, there is an estimated additional 10 acres of disturbance at the 4 less-reliable water sources (Table 12).

Based on a GIS analysis of current data for the allotment, there are also approximately 2.1 miles of double-lane county roads representing about 4.6 acres ($2.1 \text{ miles} * 18 \text{ ft. width} * 5280 \text{ ft./mile} / 43560 \text{ ft.}^2/\text{acre}$) of disturbance, 18.4 miles of open BLM roads and primitive motorized routes which include 2 cattle guards (representing an additional 26.7 acres ($18.4 \text{ miles of roads} * 12 \text{ ft. width} * 5280 \text{ ft./mile} / 43560 \text{ ft.}^2/\text{acre}$) of disturbance, 2.3 miles of private roads representing about 3.3 acres ($2.3 \text{ miles} * 12 \text{ ft. width} * 5280 \text{ ft./mile} / 43560 \text{ ft.}^2/\text{acre}$) of disturbance, 1 miles of reclaiming motorized routes, 0.5 miles of reclaiming cat lines (from past fire suppression), 1,695 acres of prescribed burning (completed in early 1990s), 802 acres of seeding, 2 mineral pits on BLM and 1 borrow pit on private land (representing about 2.5 acres).

All of these past or on-going activities have affected or shaped the landscape within the allotment into what it is today. Current resource conditions are described previously in the “Affected Environment” portions of this chapter, as well as in the Rangeland Health Assessments for the allotment (BLM 2004b, 2013b).

Reasonably Foreseeable Future Actions

Foreseeable future actions in these allotments would likely include road and range improvement maintenance on an as-needed basis, weed treatments, and hunting and other dispersed recreation activities.

Cumulative Effects Common to All Alternatives

For purposes of this analysis, total acres of concentrated ground surface disturbance or potential for surface recovery served as the main indicator of cumulative impacts. None of the alternatives would have any measureable or substantial incremental cumulative effects on Native American traditional practices, recreation, or visual quality, as the analysis contained earlier in this chapter revealed that there would be little or no direct or indirect effects on these values/issues.

Road and range improvement maintenance activities would occur on an as needed basis and generally would not cause additional surface disturbance beyond what already exists on the ground. Further, such activities are considered to be so minor as to be categorically excluded from NEPA analysis (BLM 2008b). Total road maintenance related ground disturbances under all alternatives would be similar and is estimated to remain at about 34.7 acres.

Table 12. Cumulative Incremental Acres of Disturbance Associated with Alternatives 1-3

	Alternative 1	Alternative 2	Alternative 3
Roads	34.7	34.7	34.7
Seeding	800	800	800
Prescribed Fire	1,695	1,695	1,695
Mines	2.5	2.5	2.5
Livestock Management	512	512	0
Weed Treatment	2	2	2
Total	3,046	3,046	2,534

Existing or new infestations of noxious weeds would be treated in accordance with the most current Integrated Weed Treatment Plan(s) and related policies (such as BLM 2004a, 2007b, 2007c). It is difficult to predict the aerial extent of these potential future impacts, but the 2-acre site at South Spring would likely be treated in the near future. The impacts of weed treatments have already been analyzed and these analyses are incorporated by reference in their entirety. Such impacts could include: short-term increases in surface disturbance and soil erosion, coupled with reduction in weed distribution, native vegetation recovery, protection or restoration of wildlife habitats, maintenance of recreation experiences, maintenance of livestock forage production, maintenance of visual quality, and minimal risk to human health over the long-term (BLM 2004a, Pages 10-20).

Generally, management actions that encourage mid-to late seral vegetation and good condition rangelands would encourage native plants to continue occupying existing habitat niches and greatly reduce the potential invasion of new noxious weeds into the allotment or expansion of the one known weed site at South Spring. Resource activities or management activities which

results in new ground disturbance could increase the risk of weed invasion or establishment. Maintenance of existing projects and roads, use of heavy equipment, fire suppression, livestock grazing, and recreation activities could all contribute to the spread of existing weeds or introduction of new species. Noxious weed seeds have the ability stick on the hairs of livestock and wildlife and clothes of people. The seeds also have the ability to stick into the tread of tires or on the undercarriage of vehicles. For these reasons, people, vehicles, equipment, livestock, and wildlife coming from outside the allotment could bring weed seeds with them, as well as spread the existing infestation.

While until recently the allotment was weed-free and no weed treatments have yet been conducted, more and new noxious weeds invade the Lakeview Resource Area every year. Due to this risk, a weed inventory/survey program would continue to be implemented to find and treat sites when they are small and reduce the risk of new, large infestations developing.

Under each alternative, weeds would be controlled in an integrated weed program which includes prevention, education, and cultural, physical, biological and chemical treatments (BLM 2004a). Chemical treatments at this time, would be limited by the court-ordered herbicide injunction to the four active ingredients (dicamba, picloram, glyphosate, and 2,4-D) for noxious weed control only. The known Canada thistle infestation would be controlled using 2,4-D. Herbicides available for use may change in the future as new vegetation treatment plans are completed. However, the effects of those proposals would be speculative at the present time and would be addressed when a new environmental assessment(s) is completed.

The amount and location of future dispersed recreational activities are difficult to estimate, but are not expected to result in any additional, measurable long-term surface disturbance in the allotment.

While there is also a risk of a future wildfire within the allotment, it is impossible to predict how much area would likely burn, how intensely the area would burn, how much fire suppression would be employed, and how much area may need to be actively rehabilitated after the fire. For this reason, fire disturbances are not considered further in this analysis.

Cumulative Effects Common to Alternatives 1 and 2

The total acres of heavy ground disturbance associated with livestock grazing management activities on soils and BSCs, upland vegetation, wetland and riparian areas, cultural resources, and wildlife and special status species habitat are estimated at about 512 acres. The total estimated area of ground disturbance from all past, present, and reasonably foreseeable future action would be about 3,046 acres (Table 12). However, due to the time that has passed since the prescribed burn and seeding projects (2,495 acres) were completed and the recovery that has occurred during this time, these areas have a relatively natural appearance today and no longer appear as an obvious disturbance on the landscape.

Cumulative Effects of Alternative 3

The total acres of heavy ground disturbance associated with livestock grazing management activities on soils and BSCs, upland vegetation, wetland and riparian areas, cultural resources, and wildlife and special status species habitat would be reduced over the analysis timeframe by about 512 acres as these disturbances naturally reclaim. The total estimated area of ground disturbance from all past, present, and reasonably foreseeable future action would be about 2,534 acres (Table 12).

CHAPTER IV - PUBLIC NOTIFICATION AND TRIBAL CONSULTATION

The EA was made available for a 30-day comment period. Interested public, groups, agencies, and tribal interests were notified of this review opportunity. A mailing list is contained in the file.

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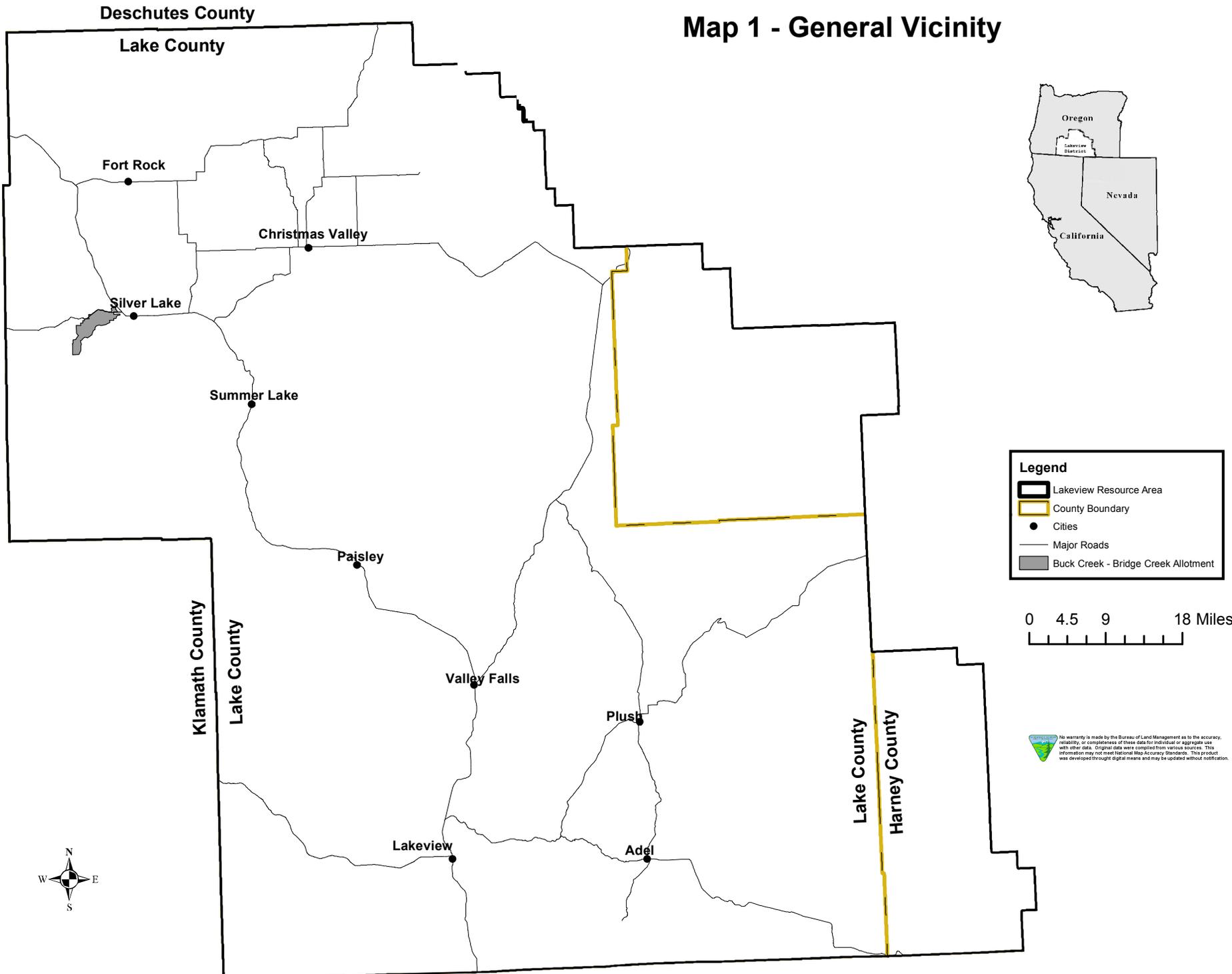
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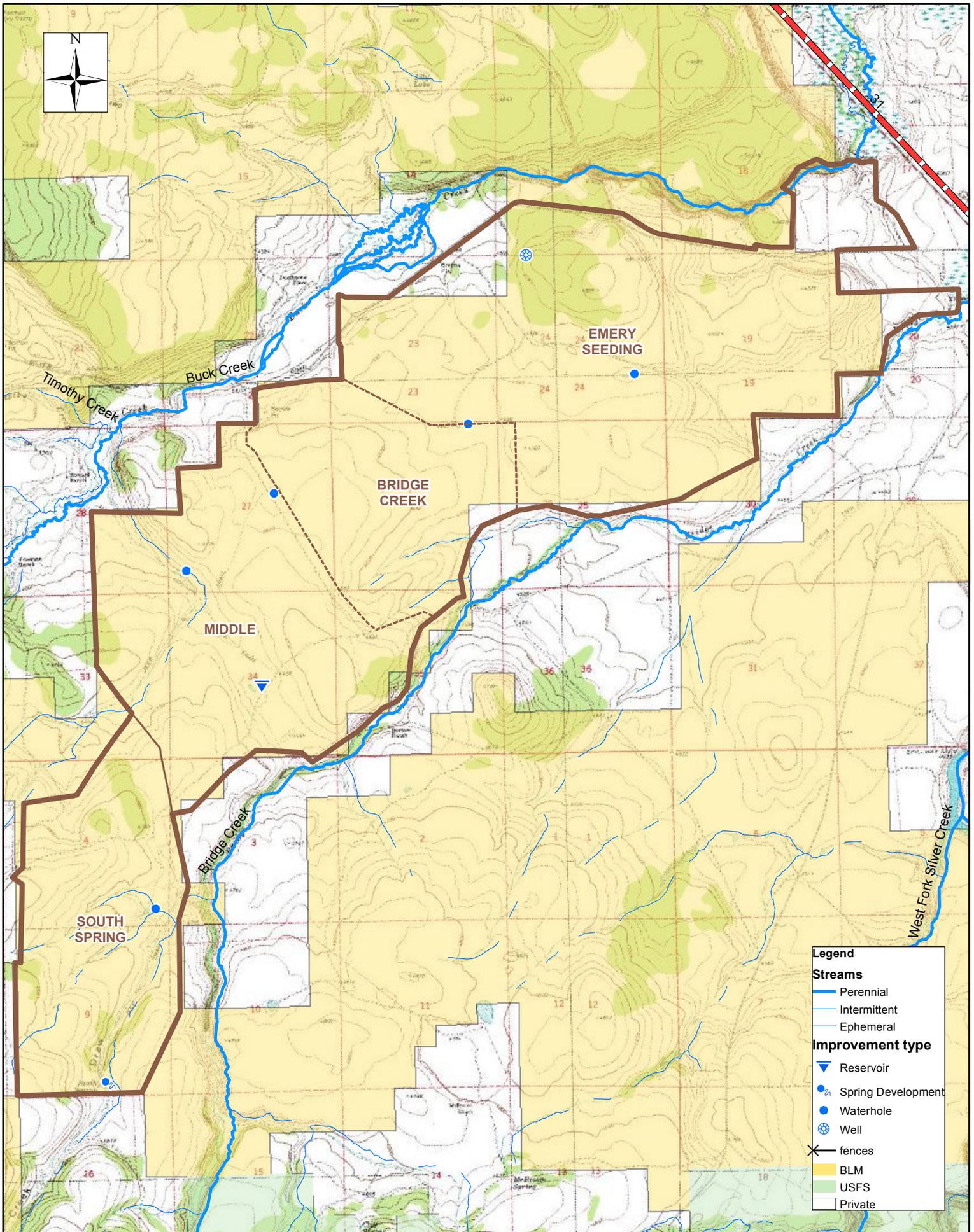
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Map 1 - General Vicinity

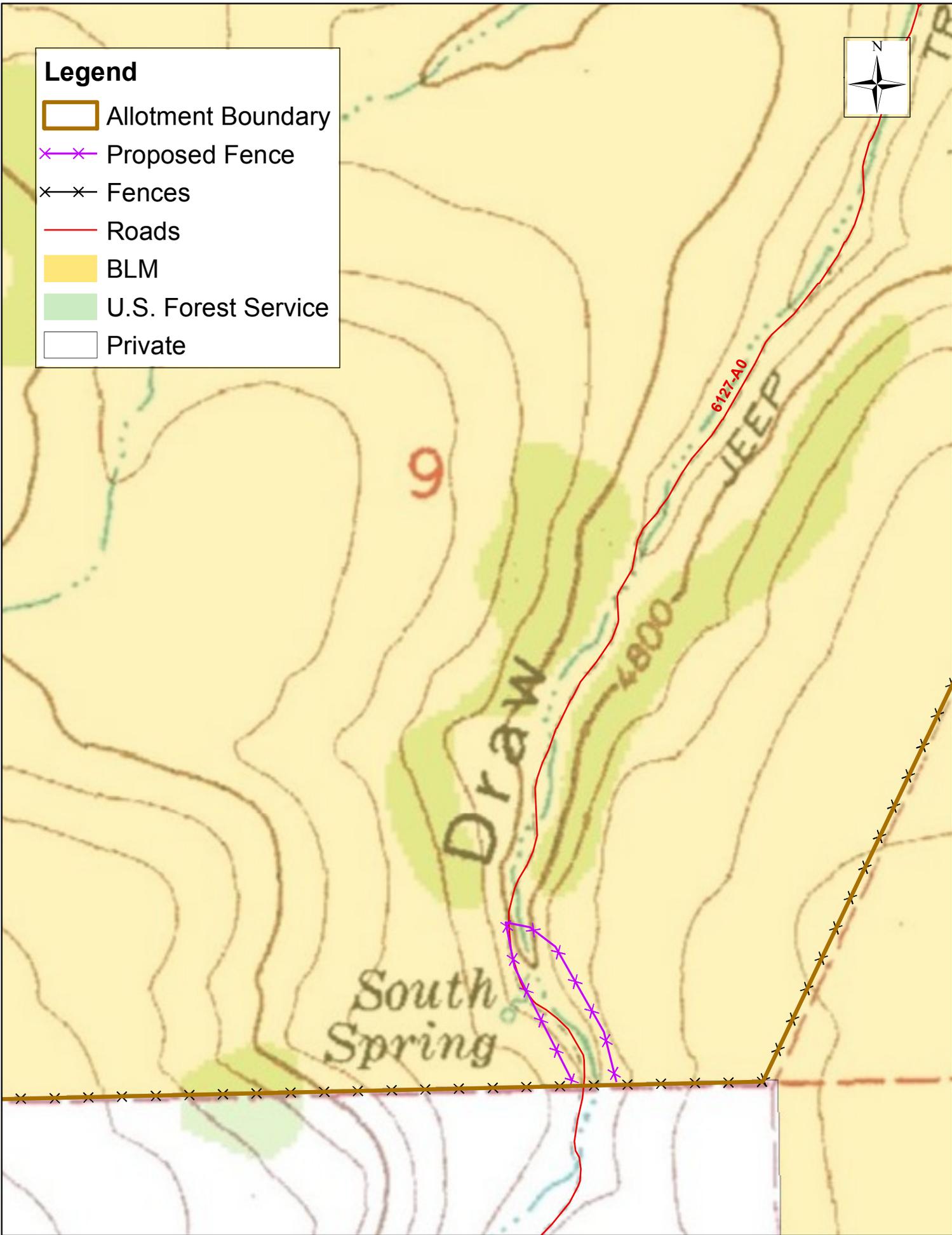


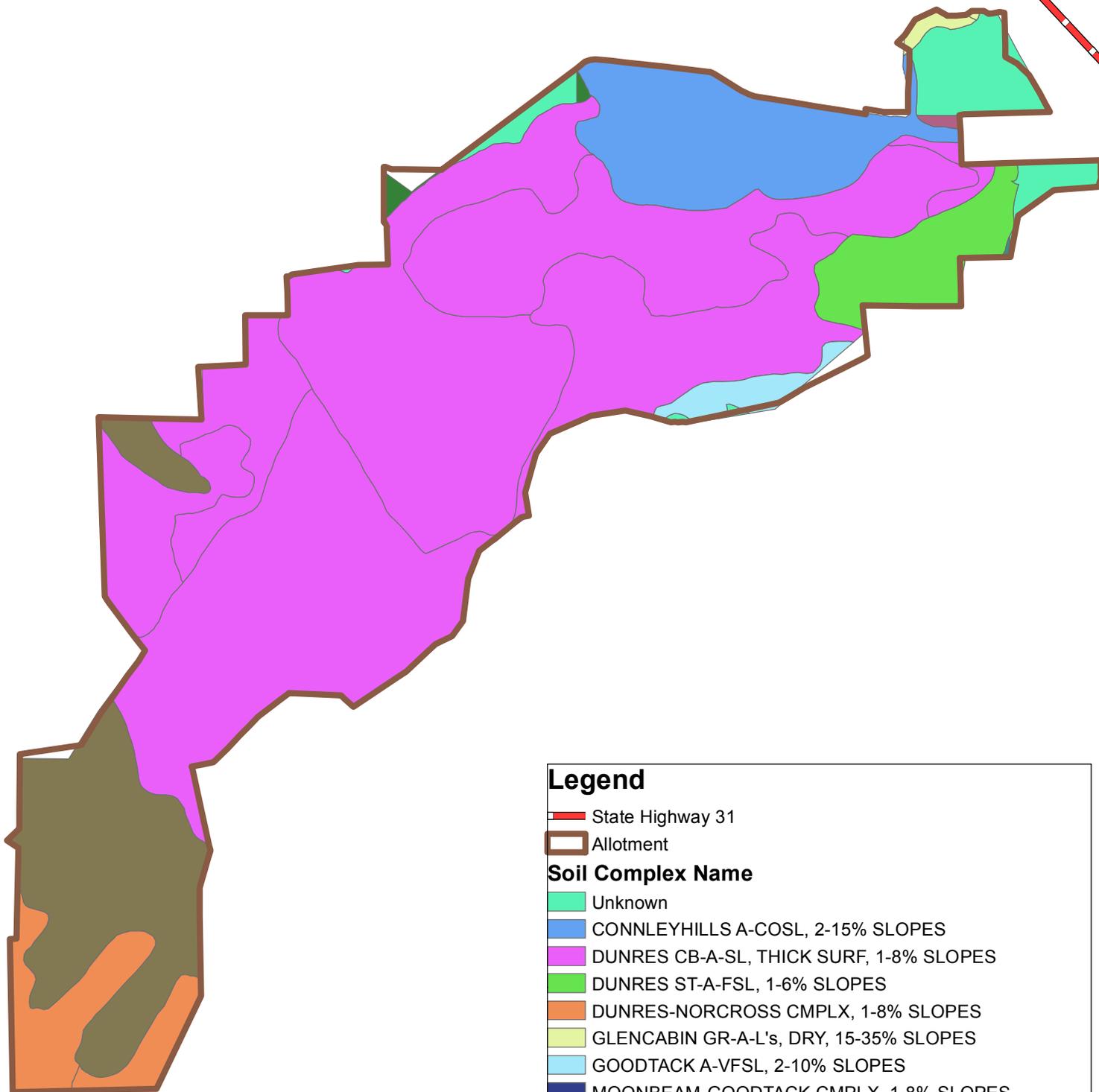


**Map 2 - Pastures and Existing Range Improvements
in the Buck Creek-Bridge Creek Allotment**

0.125 0.25 0.5 0.75 1 Miles

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. The information presented here is for general information only. This product was developed through digital means and may be updated without notification.





Legend

State Highway 31

Allotment

Soil Complex Name

Unknown

CONNLEYHILLS A-COSL, 2-15% SLOPES

DUNRES CB-A-SL, THICK SURF, 1-8% SLOPES

DUNRES ST-A-FSL, 1-6% SLOPES

DUNRES-NORCROSS CMLPX, 1-8% SLOPES

GLENCABIN GR-A-L's, DRY, 15-35% SLOPES

GOODTACK A-VFSL, 2-10% SLOPES

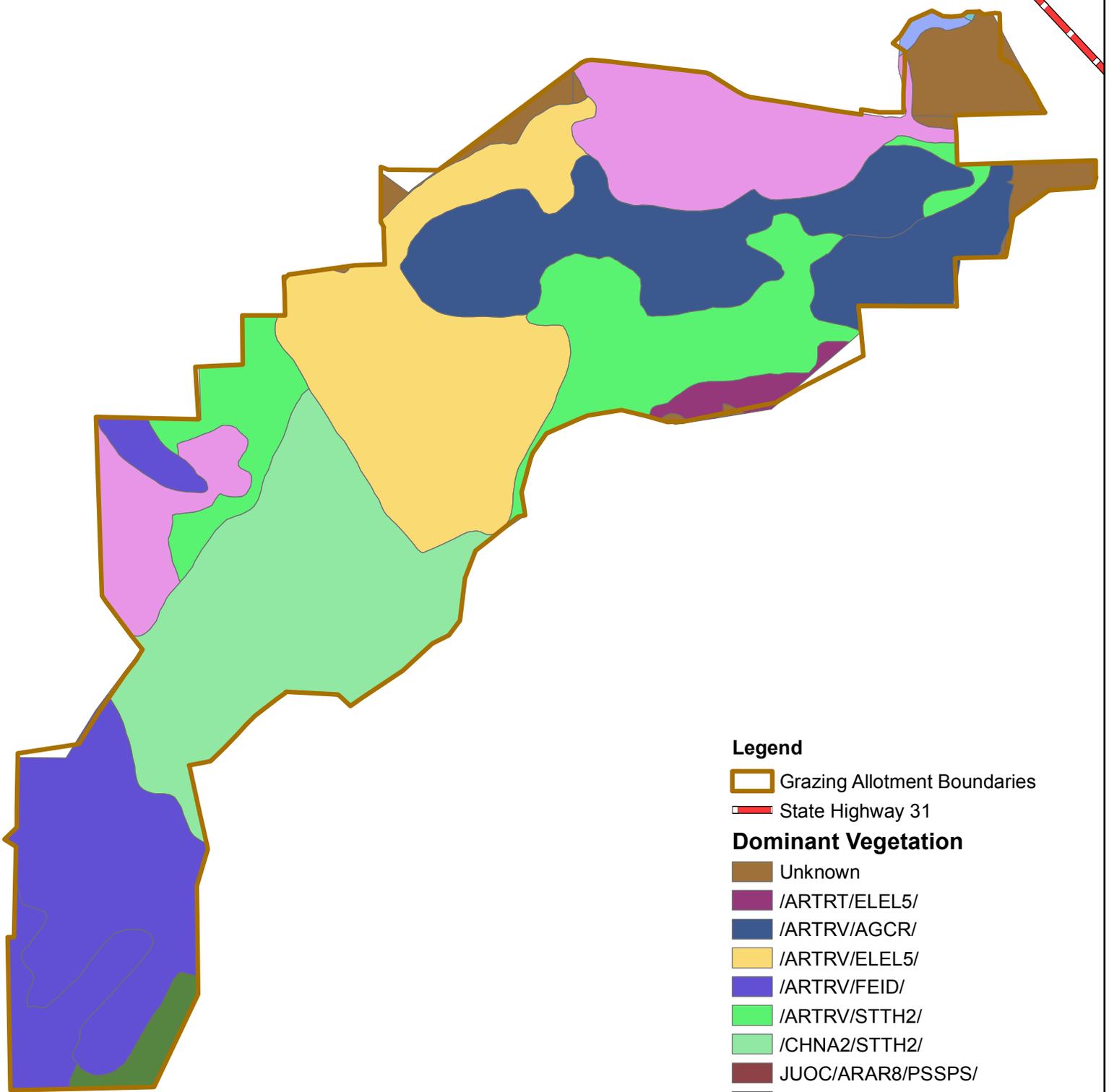
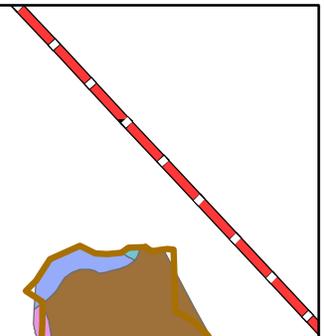
MOONBEAM-GOODTACK CMLPX, 1-8% SLOPES

MOREHOUSE A-S, 2-20% SLOPES

SUCKERFLAT-RO CMLPX, 8-15% SLOPES

WEGERT-KUNCEIDER CMLPX, 0-3% SLOPES

WEGERT-KUNCEIDER CMLPX, HIGH PPT, 0-15% SLOPES



Legend

Grazing Allotment Boundaries

State Highway 31

Dominant Vegetation

- Unknown
- /ARTRT/ELEL5/
- /ARTRV/AGCR/
- /ARTRV/ELEL5/
- /ARTRV/FEID/
- /ARTRV/STTH2/
- /CHNA2/STTH2/
- JUOC/ARAR8/PSSPS/
- JUOC/ARTRV/BRTE/
- JUOC/ARTRV/PSSPS/
- JUOC/ARTRV/STTH2/
- JUOC/PUTR2/BRTE/ANTEN