Bully Creek Landscape Area Management Project
Environmental Assessment No. OR-030-99-019

Table of Contents

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1. INTRODUCTION

1.0 PURPOSE AND NEED

This Environmental Assessment (EA) has been developed to inform the public and the BLM decision maker of the environmental, technical and economic factors involved with implementing any one of three management strategies within the Bully Creek Landscape Area Management Project (LAMP). See Section I of the LAMP for a complete discussion of these topics.

1.1 CONFORMANCE WITH LAND USE PLANS

The Proposed Action is consistent with the analysis of significant impacts in several large-scale planning documents: the *Northern Malheur Management Framework Plan* (USDI/BLM 1979); the *Ironside Grazing Management Environmental Impact Statement* (USDI/BLM 1980a, 1980b); the *Rangeland Program Summary* (USDI/BLM 1982); and with the intent and management direction identified in the draft Interior Columbia Basin Ecosystem Management Project (ICBEMP) (USDI/BLM 1997), and the draft Southeastern Oregon Resource Management Plan/Environmental Impact Statement (SEORMP/EIS) (USDI/BLM 1998). The *Scientific Assessment* (USDA 1996a) and *Summary of Scientific Findings* (USDA 1996b) from the draft ICBEMP (USDA/USDI 1997) provided the broad-scale science used during the landscape area assessment in the LAMP. The 'science' was also used to develop subbasin level findings for the *Bully Creek, Willow Creek and Lower Malheur River Subbasin Review* (USDI/BLM 1998a). The *Bully Creek Watershed Assessment and Strategy* (BCWC 1997) and the draft *Malheur Basin Watershed Action Plan and Assessment* (MOWC 1998), two documents addressing watershed management activities on private land within the Bully Creek subbasin, were consulted and referenced during development of the Proposed Action.

1.2 RELATIONSHIP TO OTHER PLANS

The Bully Creek Watershed Coalition (BCWC) and the Malheur-Owyhee Watershed Council (MOWC) have prepared watershed assessments or strategies (BCWC 1997; MOWC 1998) which address resource concerns on adjoining and surrounding private land within the Bully Creek subbasin. The goals, objectives and resource concerns in these two documents are similar to those identified in the LAMP. Although BLM is the largest land manager within the landscape area, the success of ecosystem restoration relies on coordinating activities between all interested parties.

1.3 MANAGEMENT DIRECTIONS COMMON TO ALL ALTERNATIVES

Compliance with policy and direction for livestock grazing on public lands would follow the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and

Washington (SRH) (USDI/BLM 1997; USDI/BLM 1998b-Appendix Q). The authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining, through assessment or monitoring, that a standard is not being achieved and that livestock are a significant contributing factor to the failure to achieve the standards and conform with the guidelines (43 CFR 4180.2).

Desired wildlife habitat conditions and mitigation measures, as described in the draft SEORMP/EIS Appendix F (USDI/BLM 1998b), would be followed to ensure projects and other management activities are designed and carried out to minimize negative impacts to wildlife species and their dependent habitats in the landscape area. This involves wildlife habitat security and human disturbances, impacts from structural projects, and vegetation management.

Best Management Practices (BMPs), as described in the draft SEORMP/EIS Appendix O (USDI/BLM 1998b), would be followed for activities involving road design and maintenance, surface-disturbing activities, rights-of-way and utility corridors, forest management, fire suppression, prescribed fires, livestock grazing management, mining, wildlife habitat protection, noxious weed management, and developed recreation. BMPs are designed to maximize beneficial results and minimize negative impacts of management actions. Interdisciplinary site-specific analysis may identify modifications necessary to minimize the potential for negative impacts.

Rangeland improvement projects would follow standards and design elements described in the draft SEORMP/EIS Appendix S (USDI/BLM 1998b). Design elements have been standardized over time to mitigate impacts encountered during construction. Specific design features have been developed for reservoir construction, well drilling, spring development, pipelines, fences, wildlife guzzlers, and prescribed fire.

2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Alternative A - Proposed Action/Implement the Bully Creek LAMP

The Proposed Action would be to implement the recommendations as described in the Bully Creek LAMP (Section 7.0). Resource conditions are largely due to historic and current livestock grazing practices and associated activities, in addition to changes in fire patterns, behavior and frequency. Because livestock grazing has been the dominant use across the landscape, continued livestock grazing would be used as one of the management tools to achieve resource objectives. Therefore, the majority of the recommendations developed enable more effective livestock management. For example, allotment and pasture division fencing allows greater control of livestock within critical riparian areas, improves livestock distribution in uplands and seedings to encourage better forage utilization, helps improve overall habitat conditions, and alleviates impacts to sage grouse strutting, nesting and wintering areas. To further protect sensitive resources and focus on resource needs, specific forage utilization levels, season-of-use, and duration of use for livestock would be prescribed on a pasture-by-pasture basis. In addition, range-readiness criteria, and wildlife habitat restrictions have been designed to address sensitive resources (LAMP Appendix A, Tables A-11).

The recommendations proposed in the LAMP include a variety of activities where standardized descriptions and methods for implementation have been analyzed and adopted in existing land use plans and EIS's (USDI/BLM 1980a, 1980b, 1982, 1998b). The activities would include: (1) implementing a grazing management strategy for 20 allotments; (2) constructing rangeland improvement projects (springs, pipelines and water troughs, fences, reservoirs and windmills; conducting maintenance and reconstruction on existing projects); (3) upland (including forest ecosystems) and riparian habitat rehabilitation activities such as treating vegetation using prescribed fire, mechanical, chemical and biological control; and (4) various other follow-up monitoring, data collection and administrative activities to be conducted during the course of the project. These activities are also directly and indirectly related to other actions such as access management and revegetation.

Grazing schedules were developed considering pasture carrying capacity levels and are shown in the LAMP, Appendix C. These schedules would be implemented beginning in Fiscal Year (FY) 2000. To effectively implement the grazing schedules, specific rangeland improvement projects have been identified for construction beginning in FY1999. Those projects would be critical to maintaining a grazing program while protecting resources. Proposed projects and site-specific information would be further refined in subsequent years, prior to their implementation. The list of proposed projects and their anticipated construction/implementation year(s) is shown in the LAMP, Appendix A, Table A-10. This project list is based on current resource conditions, and is subject to additions or deletions, as conditions warrant, to meet stated objectives.

2.2 Alternative B - Suspension of Use

In 24 pastures within 8 allotments (see Table 1) where SRH (USDI/BLM 1997) are not being met, and current livestock grazing is determined to be the primary cause, livestock grazing would be suspended. This suspended use would be for a minimum of 3 years or until monitoring shows resource conditions are moving towards meeting the standards as defined in SRH guidelines and in the objectives described for the LAMP. Resumption of livestock grazing in those pastures would only be permitted where there is a reasonable expectation that grazing could occur without setbacks in recovery. Grazing schedules, forage utilization levels, and season of use in those pastures where grazing use is not suspended would be similar to the Proposed Action. In the pastures in each allotment still available for grazing, schedules would be developed to address the same resource objectives, concerns and issues as used for the Proposed Action.

Table 1. Allotments/Pastures Not Meeting SRH, Caused by Current Livestock Grazing Practices

Allotment	Pasture	Pasture Acreage	Allotment Acreage	AUMs suspended
Allotment #2	Mountain	10,916		
		Pasture Total 10,916	48,500	2,772
Allotment #3	Jones	10,320		
	North Black Canyon	5,488		
	Swamp Creek Seeding	4,012		
	North Studhorse	9,277		
	South Black Canyon	8,108		
	Upper Pole Creek	4,502		
	Lower Pole Creek	2,205		
	E. Cottonwood Seeding	2,506		
	W. Cottonwood Seeding	4,754		
		Pasture Total 51,172	77,694	7,357
Rail Canyon	Kitten Canyon	Pasture Total 6,115	22,639	0
Brian Creek	North NG Seeding	1,151		
	South NG Seeding	889		
	Mountain (N and S)	2,776		
		Pasture Totals 4,816	4,816	1,090
Buckbrush	Mountain	5,103		
	Buckbrush Seeding	2,795		
		Pasture Totals 7,898	20,067	951
Willow Basin	Juniper Springs	6,736		
	Willow Basin Creek	9,005		
	Bully Creek	10,015		
	Indian Creek	5,306		
	Panhandle	3,009		
		Pasture Totals 34,071	43,455	4,775
Lava Ridge	South Bully Creek	1,758		
	North Bully Creek	2,999		
		Pasture Totals 4,757	11,069	614
West bench	East	Pasture Total 626	1605	39
Total active AUMs in LAMP area allocated to livestock		42,366		
Total AUMs Proposed for Suspension		17,598		
% of Total AUMs Proposed for Suspension		41%		
Total Acreage Proposed for Suspension		120,371		
Total Acreage Currently being Grazed		266,579		
% of Total Acreage Proposed for Suspension		45%		
Number of Operators Potentially Impacted by Proposed Suspension		12		

Source : Malheur Resource Area Interdisciplinary Team, Vale District BLM, 1998.

Projects constructed with implementation of Alternative B would be similar to Alternative A, Proposed Action (see the LAMP Appendix A, Table A-10). The projected year of construction would differ between the two alternatives. The priority of implementing vegetation manipulation projects (e.g., prescribed fire in communities dominated by juniper and seeding in cheatgrass range) would be unchanged so as to achieve SRH in vegetation communities dominated by woody or annual species. The priority of implementing structural rangeland projects (e.g., pasture division fences and water developments) in pastures which meet or are progressing toward meeting SRH would also not differ from the Proposed Action, since many of these projects are proposed to accelerate progress toward meeting SRH or meeting management objectives. The priority of constructing projects in pastures where SRH are not met or substantial progress has not been made would differ from the Proposed Action in that these projects would not be necessary until progress toward meeting SRH has been attained through livestock exclusion. Structural project construction in pastures where livestock are temporarily excluded would become a priority once the decision has been made to reintroduce livestock grazing.

2.3 Alternative C - No Action

Current management would continue within the landscape area as described in Section 5.0 of the LAMP. Livestock grazing would continue as described in existing Allotment Management Plans (AMPs), subject to evaluation, SRH assessment and modification in regular cycles. Implementation of rangeland improvement projects and other activities would occur as in the past on a site-specific basis as needed without considering the implications (positive or negative) the action(s) may have on the interconnected parts of the landscape area, including adjoining private land. Existing pasture-specific objectives stated in AMPs are outdated, and in some cases have not been met. For analysis purposes for this alternative, current management will be considered as that which is now occurring and will not attempt to define changes that may or may not occur as a result of evaluation and SRH assessment. Rangeland projects would occur at the same rate and extent as in the last 10 years in allotments in the landscape area.

2.4 Alternatives Considered But Not Analyzed in Detail

Additional actions were considered but will not be further analyzed. These are actions that either would not be consistent with current Land Use Plans, identified objectives, current law or policy or are not viable. Actions considered but not carried forward include the following:

- Complete elimination of livestock grazing. A No Grazing Alternative was analyzed in the Ironside Grazing EIS and was not selected for implementation and does not need to be analyzed again.

- Suspension of all activities within the landscape area. This would not be consistent with the current land use plans, laws or policy.

- More extensive rangeland improvement development beyond that which is financially viable.

3. AFFECTED ENVIRONMENT

The affected environment is described in the LAMP, Section 5.0.

4. ENVIRONMENTAL CONSEQUENCES

This section analyzes the potential beneficial and adverse environmental direct, indirect and cumulative impacts to resources by implementing any one of the three alternatives. This chapter is arranged by resources with each alternative discussed under each resource value. The baseline used for impacts is the current condition or situation as described in the LAMP, Section 5.0. More pasture-specific resource conditions are described in the LAMP, Appendix C. Impacts are projected to be short-term (0-10 years) and long-term (10-20 years). Refer to Appendix 1 for a comparative summary of the impacts affecting each resource by alternative.

4.1 AIR RESOURCES

4.1.1 Alternative A (Proposed Action)

The airshed rating in the landscape area is Class II *(Clean Air Act as amended 1990)*. Direct and indirect impacts from project implementation related to dust and smoke emissions would be localized and transitory in nature, even during peak use periods. Prescribed fire to restore ecosystem function in some vegetative communities (juniper woodlands and sagebrush habitats) would be conducted over the course of LAMP implementation. This activity is expected to increase the release of overall emissions, but would not exceed the impacts as addressed under Alternative C of the Draft SEORMP/EIS (USDI/BLM 1998b). The exact acreage, location and timing of prescribed fire would be specified and impacts addressed, as necessary, in subsequent NEPA analysis and in fire management plans. Any prescribed fire would be conducted to conform to applicable State and Federal air quality standards, and no long-term smoke impacts are expected. The Rail Canyon prescribed fire would be initiated, as approved, during 1999 (EA No. OR-030-98-014).

4.1.2 Alternative B (Suspended Use)

Under this alternative, the direct and indirect impacts from project implementation would be slightly less due to less prescribed burns.

4.1.3 Alternative C (No Action)

Minor short term impacts to air quality may occur during the Rail Canyon prescribed fire scheduled for implementation in 1999 (EA No. OR-030-98-014). Under this alternative, impacts to air quality would be less than under Alternative A (Proposed Action) due to fewer prescribed burns.

4.2 GEOLOGY, ENERGY and MINERAL RESOURCES

4.2.1 All Alternatives

As none of the alternatives propose to restrict opportunities for energy and mineral exploration and development in the landscape area, there would be no adverse impacts to these resources, regardless of the alternative implemented.

4.3 SOILS

4.3.1 Alternative A (Proposed Action)

Analysis of the data collected during the SRH assessment process determined that 40-100 percent of the sites assessed within 20 pastures showed deficiencies in meeting Standard 1 (see Table 2 of the LAMP) dealing with the upland watershed functions (see Appendix C of the LAMP). Soils at these sites showed deficiencies in either infiltration and permeability rates, moisture storage or stability from appropriate levels expected for this climate and landform.

Eighty-nine pastures of the total 109 assessed within the LAMP where soil processes are meeting the standards would continue to improve towards desired range of future conditions (DRFCs). In the 20 pastures where soils are preventing the attainment of Standard 1 (Upland Watershed Function), the Proposed Action would allow progress towards meeting the standard and DRFCs. Proposed grazing schedules with vegetation utilization limits developed with the Proposed Action would allow more vegetation to remain in areas thereby retaining adequate plant litter to maintain soil productivity and limit accelerated erosion.

Implementation of maximum allowable utilization levels and stubble heights (Table 7 of the LAMP) (measured at the end of the grazing or growing season (whichever comes first)) would provide adequate ground cover to protect soils from spring runoff. Range readiness criteria for early turnout and drought conditions (Table 8 of the LAMP) designed to protect soils from compaction and erosion would also ensure that upland and riparian soils could withstand grazing pressure.

Short-term direct and indirect impacts, as well as, long-term impacts are expected to occur from prescribed burns or other mechanical/chemical treatments to vegetation. Short-term direct impacts include increased soil compaction and displacement from any off-road vehicle use and increased sediment and soil movement from runoff entering watersheds and decreased water quality. Short-term indirect impacts could include the possibility of increased silt production into streams. The increased silt load would cover fish eggs and suffocate fry affecting populations of fish and amphibians until silt loads were scoured out of these stream reaches. Long-term impacts would be positive to soil conditions as desired vegetation would begin to reestablish and provide protection. Soil-water storage would improve with the reestablishment of native grasses and reduction of undesirable woody species in parts of the landscape area.

Implementation of the projects in the Proposed Action are expected to have short-term impacts to soils (erosion) due to soil and vegetation disturbance. Long-term impacts would be positive to soil conditions as desired vegetation begins to reestablish and provide protection. Soil-water storage would improve with the reestablishment of native grasses and reduction in encroaching juniper in parts of the landscape area. Surface disturbance would be kept to a minimum, and soils would be rehabilitated to blend into surrounding areas. Revegetation would occur as needed, with adapted perennial species to stabilize soils and preclude invasion and dominance of undesirable and weedy species. Existing roads and ways would be used, whenever possible. Any necessary off-road travel would be done to minimize impacts to soils and other resources. Where feasible, off-highway vehicles with large, low

pressure tires would be used. Traveling through riparian areas would be avoided wherever possible.

Recreation activities (camping and off-highway vehicle use) and vehicle access would continue to cause moderate to low soil impacts in localized areas. Impacts result from compaction, surface runoff, and wind erosion. In several areas (Pole Creek and Rail Canyon), roads cross through riparian and aquatic habitats. There has been no proposal to relocate or close roads, and direct and indirect impacts to soils and downstream water quality is expected to continue in these areas.

4.3.2 Alternative B (Suspended Use)

Impacts to soil resources would be similar to Alternative A (Proposed Action). In areas where grazing is suspended for 3 years, soil resources would be positively impacted by the ungrazed vegetative cover and lack of surface disturbance. Those 89 pastures where soil processes are meeting the standards would continue to improve towards DRFCs. Where soils are preventing the attainment of the standards (20 pastures), Alternative B would allow progress towards meeting the standards and DRFCs. Long-term impacts to soil resources would be similar to the Proposed Action as grazing is allowed after attaining the standards. Implementation of the projects under this alternative would have similar impacts to soil resources as Alternative A (Proposed Action).

4.3.3 Alternative C (No Action)

Under current management strategies, impacts to soils resources would exist as they do at the present time. Those 89 pastures meeting Standard 1 and in functioning condition would remain as they are. Degraded conditions would continue in 20 pastures not meeting Standard 1. Grazing systems would need to be developed (through AMP revisions) which address resource problems, including recommendations to stabilize soils. Prescribed fire would not be as aggressive as Alternative A (Proposed Action), which may reduce short-term soil impacts, but may actually cause increased erosion in the long-term.

4.4 VEGETATION

4.4.1 Alternative A (Proposed Action)

4.4.1.1 Impacts to Upland Vegetation

Implementation of forage utilization limits and grazing schedules with periodic rest or deferment from critical growing season grazing would allow vegetation types with native and introduced perennial grasses to improve or remain stable. These actions would promote plant vigor, seed production, seedling establishment, root production, and litter accumulation for herbaceous plants in upland ecosystems. As a result, 22 of the 36 upland trend studies moving towards current upland objectives would continue to do so over the short-tern (10 years). Little change in vegetation composition would be expected in types now dominated by annual species except where some type of vegetation manipulation and seeding would be applied.

Sagebrush and western juniper cover would be expected to decrease slightly and grass cover to increase correspondingly due to wildfire and vegetative manipulation projects such as prescribed fire,

brush beating and seeding with native and desirable non-native species. Prescribed fire would cause a short-term decrease in vegetative cover with a long-term increase in herbaceous cover, species diversity, and forage production. Brush beating would alter species composition and increase herbaceous species composition and cover while increasing forage production. Seeding with native and desirable non-native species would improve perennial species diversity where a forb mixture is used and would improve cover and forage production. The combination of these type of projects would lead to more diverse and healthy vegetative communities, especially as areas that are dominated by annual or single species are converted to more diverse perennial species.

Sustained or slightly reduced livestock grazing would return plant litter to the soil. Long-term vigor and health of vegetation, including maintenance of soil stability and energy, nutrient, and water cycling, would be maintained across the landscape, except at localized areas of livestock concentrations and areas impacted by project development. Project development would directly impact and displace vegetative communities in the localized area of the project and cause increased trampling with associated impacts immediately adjacent to projects such as fences and water developments. In the long-term, project development will allow for implementation and maintenance of grazing schedules necessary to foster vegetative health and maintenance.

4.4.1.2 Impacts to Riparian Vegetation

An assessed 48 miles of lotic riparian vegetation communities adjacent to perennial or intermittent streams determined to be in proper functioning condition would remain functioning with proposed grazing schedules which limit hot season grazing use or implement utilization limits when fall or hot season grazing would be scheduled. Approximately 49 miles of riparian communities determined to be in functioning at risk with an upward trend would continue to improve, while a portion of 57 miles of riparian communities functioning at risk with a trend not apparent would improve. Implementation of appropriate grazing schedules or application of riparian utilization limits would improve trends in 35 miles of riparian vegetation communities found to be functioning at risk with a downward trend and 21 miles of riparian vegetation communities found to be non-functional where livestock use was identified as a factor limiting attainment of function. These same stretches of riparian vegetation communities occupy 56 of the total 109 pastures within the landscape area. Forty seven of these 56 pastures are not currently meeting standard 2 with current grazing management practices being the main factor within 18 of the pastures.

The rate of recovery of riparian function would be greatest where livestock grazing practices are currently limiting functionality[1]. Factors which may limit the attainment of riparian function and the progress of meeting riparian objectives include road placement and maintenance, stream flow affected by upstream reservoirs, upstream or downstream influences from private land, or juniper

[1]Current livestock management practices are limiting riparian function in Mountain Pasture of Allotment #2; North Black Canyon, East Cottonwood Seeding, West Cottonwood Seeding, Swamp Creek Seeding, North Studhorse, and Lower Pole Creek pastures of Allotment #3; Kitten Canyon Pasture of Rail Canyon Allotment; Mountain Pasture of Brian Creek Allotment; Buckbrush Seeding and Mountain pastures of Buckbrush Allotment; and Juniper Springs, Indian Creek, Panhandle, and Bully Creek pastures of Willow Basin Allotment.

encroachment into riparian vegetation communities. Many incised stream reaches in nonfunctioning condition or functioning at risk with a downward trend due to historic or current livestock management practices would continue to downcut to a hard layer as a result of the continuation of hydraulic processes, regardless of proposed grazing practices. These stream reaches would improve in condition once hydraulic processes establish a new floodplain at the entrenched elevation. The time frame for improvement with dissipation of the energy within the stream and rebuilding of a floodplain may be in excess of 20 to 50 years.

Construction of Frog Riparian Fence, East Cottonwood Pasture Fence, West Cottonwood Pasture Fence, Kitten Canyon Pasture Fence, an allotment division fence in Rail Canyon Allotment, and a pasture fence in Brian Creek Allotment as well as the realignment of existing fences to create Rocke Riparian Pasture would provide management units where grazing schedules would be implemented in a manner consistent with maintenance and improvement of riparian resource values. Reconstruction or maintenance of exclusion fencing at NG Creek Exclosure, Zotto Reservoir, and Pence Spring Reservoir and livestock exclusion fencing at Pole Creek Spring would provide protection for the riparian resources and allow for the recovery of vegetation communities.

Under this Alternative, short-term improvement in forbs and perennial grass species, including Kentucky bluegrass and red top, would occur with limitations set on summer and fall grazing in riparian communities. The establishment and increased dominance of stream bank stabilizing sedges and rushes would occur in the mid-term provided that hot season and unauthorized grazing use did not occur. Over the long-term, dominance of late seral sedges and rushes would occur as extensive root systems bind stream bank soils.

The incidence of browsing on young woody species would be reduced, improving the survival of seedlings and suckers of riparian shrub species and desirable trees including aspens, willows, birch, and cottonwoods. Where potential exists, multi-aged shrub and deciduous tree composition within riparian vegetation communities would result. This would provide structural diversity perpetuating the physical and biotic benefits of long-lived riparian woody species. More of the soil profile would be occupied with roots providing more stabilization to the stream banks.

Coarse above-ground growth provided by herbaceous and woody species would provide increased stream bank and floodplain roughness and reduce the energy within the stream, thus stabilizing stream banks while holding water on site longer and recharging the aquifer. Sediment loads carried by the stream would be allowed time to settle out, building banks and providing seed-beds for further development of riparian species. Aquifer recharge, coupled with stream shading provided primarily by woody species together with overhanging banks, would extend stream flow through the year. As a result of the sponge action of functioning riparian communities, the extremes of high spring flow and downstream flooding would be minimized, while sustained flows during late summer are maintained when groundwater held in riparian communities re-enters the stream channel. Stream channel width to depth ratios would be reduced as a result of greater binding of the soil profile by woody and herbaceous species roots reducing the water surface area subject to solar radiation ans subsequently water temperature increase.

Implementation of grazing schedules would have little effect on the dominance of western juniper in vegetation communities. Western juniper establishment and dominance is primarily a result of natural succession in the absence of periodic fire and will occur even in healthy upland and riparian vegetation communities where soils are not saturated. Juniper and sagebrush (woody species not associated with saturated riparian soils) would decline in dominance within wide lotic riparian vegetation communities over the long-term as root access to aerated soils is limited when aquifers are recharged and maintained. Proposed management actions to manipulate vegetation communities, including reduction in the dominance of western juniper in riparian communities, would occur in the South Gregory and Lower Pole Creek pastures of Allotment #3 and Juniper Springs, Willow Basin Creek, and Bully Creek pastures of the Willow Basin Allotment. Removal of western juniper trees from riparian communities would enhance stream bank stability and improve the soil-water balance by allowing for soil stabilization through increased dominance of more mesic herbaceous and woody species. Juniper reduction within the upland communities of these pastures would similarly improve the soil-water balance by providing opportunity for maintenance of diverse multi-layered vegetation communities which include scattered western juniper and limit sediment loads delivered to streams to natural levels. Additional projects which limit juniper occurrence in riparian vegetation communities of the Bully Creek geographic area (identified through the life of the plan using the adaptive management process) would similarly affect resource values when implemented.

Any additional vegetation manipulation projects which increase ground cover provided by herbaceous and shrub species would also contribute to development and maintenance of healthy and diverse vegetation communities which would subsequently limit sediment loads delivered to streams to natural levels.

4.4.1.3 Impacts to Special Status Plants

The two special status plant species, ochre-flowered buckwheat and Malheur cryptantha, are located on diatomaceous ash deposits in the subbasin. The two pastures supporting these two species were found deficient for Standards 3 and 5; however, current livestock management practices were not determined to be responsible for the deficiencies. Impacts from BLM's livestock grazing management decisions cause no known impacts to these two species due to the unique soil and topography that comprise their habitat. There has been some recent disturbance from OHV use on the steep, ash soils, but no other impacts have been identified.

There would be no anticipated impacts to the two plant species from proposed changes in grazing practices. Livestock would not utilize the steep slopes where these plants grow under the proposed season of use. No impacts would occur from the proposed seeding treatment, because the habitat supporting the species would not be directly affected, and crested wheatgrass seedlings have not become established on this soil type in the past.

4.4.1.4 Impacts to Aspen

Aspen vegetation is located in 20 of the total109 pastures within the Bully Creek subbasin area. Of the 24 pastures where SRH are not being met and current livestock grazing is determined to be the primary cause, 10 contain aspen vegetation. The proposed grazing systems would have little effect overall on

the aspen communities within the Bully Creek subbasin in the short- or long-term. The proposed 3,200-acre prescribed fire project in Willow Basin and Bully Creek pastures of Willow Basin Allotment would allow moderate short- and long-term benefits to aspen regeneration. This large burn acreage in combination with implementing protective techniques for regenerating aspen would provide sufficient protection from big game and livestock for young aspen to grow. In the other 18 aspen pastures, a continuing decline in aspen health would occur until additional projects, such as prescribed fire, could be planned and implemented through the adaptive management process. These projects would similarly benefit resource values when implemented.

4.4.2 Alternative B (Suspended Use)

4.4.2.1 Impacts to Upland Vegetation

Impacts to vegetation are expected to be similar to Alternative A (Proposed Action) with the exception that short-term improvements to vegetative communities may occur at a slightly faster rate in those pastures where livestock are excluded. Fourteen of the 36 upland trend studies not meeting upland objectives would be expected to move towards meeting objectives in 3 years. Impacts as a result of vegetation manipulation projects and project development would be similar to Alternative A, although the timing and sequence of specific development may be somewhat different. Impacts to sagebrush and western juniper communities would be slightly greater under this alternative due to the expected increase in wildfire. Impacts to upland vegetative communities on private land would increase, in some cases to a high degree due to the 17,598 AUM reduction and removal of livestock from 24 pastures in 8 allotments comprising 45 percent of the public rangelands. Some operators would have to substantially increase grazing use on private or leased land for 3 years in order to maintain a viable operation. Impacts resulting from this increased use of private land would have adverse impacts to public land located downstream, most notably hydrologic impacts.

4.4.2.2 Impacts to Riparian Vegetation

Impacts of implementation of Alternative B to riparian vegetation communities would be similar to those identified in Alternative A (Proposed Action). Short-term recovery rates would be greatest along 57 miles of stream currently functioning at risk with a not apparent trend and along 35 miles of stream functioning at risk with a downward trend. Along 21 miles of stream non-functioning, little short-term improvement would be expected, especially where channels are deeply entrenched. The recovery of these non-functioning riparian reaches would be long-term as stated in the analysis for Alternative A. Adherence to grazing schedules would be similar to Alternative A for pastures where current livestock management was not leading to the failure to meet SRH. Rates of recovery would be similar to Alternative A. Following temporary exclusion of livestock from the 18 pastures identified above, continued recovery of riparian vegetation communities would occur at faster rates than Alternatives A and C.

Temporary removal of livestock from 18 pastures in Bully Creek geographic area in which Standard 2 was not met due to current livestock management practices (Table 1) would result in an improved short-term rate of riparian recovery as compared to Alterative A. Similarly, temporary removal of livestock from an additional 6 pastures in which Standards 1, 3, 4 and/or 5 were not met

due to current livestock management practices would result in an improved short-term rate of recovery of riparian vegetation as compared to Alternative A.

Riparian vegetation recovery resulting from proposed projects would be similar to those identified in Alternative A. Site-specific recovery would be different from Alternative A with scheduled livestock exclusion from 18 pastures containing riparian resources. The difference would be a result of project implementation priorities.

4.4.2.3 Impacts to Special Status Plants

Two pastures supporting two special status plant species were found to be deficient for Standards 3 and 5; however, current livestock management practices were not determined to be responsible for the deficiencies. Consequently, 3 years of non-use would not be implemented under this alternative within the habitat of these species, and effects would be the same as described in Alternative A (Proposed Action).

4.4.2.4 Impacts to Aspen

Livestock would be excluded for a minimum of 3 years from 24 pastures, 10 of which contain aspen stands in poor condition caused by livestock grazing practices. In the Willow Basin and Bully Creek pastures, where a 3,200-acre prescribed fire has been proposed, moderate aspen regeneration would occur in the short- and long-term. The other 10 rested pastures with aspen, would not likely show substantial improvement in the short- or long-term since other factors besides livestock grazing practices have been identified as causing the aspen to be in poor condition. In these aspen pastures livestock grazing would continue and the health of aspen likely continue to decline under the new grazing systems until additional projects, such as prescribed fire, could be planned and implemented through the adaptive management process. These projects would benefit resource values when implemented.

4.4.3 Alternative C (No Action)

4.4.3.1 Impacts to Upland Vegetation

Trends and conditions identified in Section 6.0 and Appendix C of the LAMP would be expected to continue under current management strategies. Twenty two of the total 36 upland trend studies meeting objectives would remain stable with favorable climatic conditions. The remaining 14 upland trend studies not meeting upland standards and in a degraded condition, would continue in the same state. Negative impacts to these vegetative communities would continue until adjustments would be made to management practices. Impacts from vegetation manipulation projects would be similar to those in Alternative A (Proposed Action), but reduced as less projects are likely to implemented. Impacts from project development would be similar to Alternative A but may occur in different locations and at different rates.

4.4.3.2 Impacts to Riparian Vegetation

Forty eight miles of lotic riparian vegetation communities adjacent to perennial or intermittent streams determined to be in proper functioning condition, 49 miles of riparian communities determined to be in

functioning at risk with an upward trend, and portions of 57 miles of riparian communities functioning at risk with a trend not apparent would continue as assessed. Thirty five miles of riparian vegetation communities found to be functioning at risk with a downward trend and 21 miles of riparian vegetation communities found to be non-functional where livestock use was identified as a factor limiting attainment of function would also continue as assessed.

Riparian function within stream reaches in 18 pastures not currently managed to maintain or improve riparian values and where Standard 2 was not met due to current livestock management would continue to function at risk or become nonfunctional and would support limited dominance of mesic sedges, rushes, shrubs and trees.

Development of projects would continue to occur with implementation of existing activity plans and authorizations, as needs would be identified. Impacts to riparian vegetation from implementing rangeland improvement projects, including fencing, water development, and vegetation manipulation, would be assessed on a project-specific basis as proposals for development would be received.

4.4.3.3 Impacts to Special Status Plants

Habitat for two special status plant species has not been affected by livestock grazing in the past due to the steep topography and soil type supporting these species. Continuation of current livestock grazing management would not affect the plants.

4.4.3.4 Impacts to Aspen

Under current management, aspen health would continue to decline throughout the subbasin. This decline would occur regardless of elevation, aspect, presence of juniper or current grazing systems. In recent years, three pastures (North Bully Creek, and East and West Crow Creek) were closed for 2 to 3 years to aid aspen regeneration. Elk and deer browsing was estimated at 80 percent of the current year's aspen leader growth in pastures where no livestock were present. The Rail Canyon prescribed fire project was initiated in 1999 to begin comprehensive treatment of aspen, uplands, forest stands and riparian areas in an attempt to stimulate aspen sprouting while reducing wildlife impacts and controlling livestock until aspen regrowth was well- established. Results will not be known for several years, but an integrated approach to this problem is believed to have the best chance for success for aspen regeneration.

4.5 WEEDS

4.5.1 Alternative A (Proposed Action)

The Proposed Action calls for controlling the proliferation of noxious weeds on an annual basis. This is expected to slow the spread of established stands of noxious weeds and reduce the establishment of new infestations. Mechanical, chemical, and biological control would be done in compliance with the integrated weed management policies and would not be expected to cause adverse impacts to desirable resources. Improving habitat conditions may result in fewer weed infestations; however, this benefit may not be realized on a landscape scale during the first 10 years of LAMP implementation.

4.5.2 Alternative B (Suspended Use)

Impacts of weed management would be similar to those identified in the Proposed Action. Suspended use of livestock alone would have very little effect on the overall weed populations. Without intervention, using herbicide treatment and seeding of desirable, competitive species, noxious perennial and annual weeds would continue to expand in heavily degraded areas. In areas where perennial grasses and shrubs can respond from no grazing pressure, competition from the healthier communities may retard new establishments of invading noxious weeds.

4.5.3 Alternative C (No Action)

Impacts of weed management would be the same as identified under Alternative A (Proposed Action).

4.6 FIRE HISTORY AND MANAGEMENT

4.6.1 Alternative A (Proposed Action)

With the exception of drought years, it is expected that there will be adequate fine fuels to carry wildfire. It is expected that average annual wildfire numbers and acreage would continue to fluctuate as in the past.

Under the Proposed Action, prescribed fires would be conducted in areas of the landscape where vegetation communities are not meeting resource objectives for diversity, composition, structure, and wildlife habitat needs. The use of prescribed fire would increase slightly over current levels. Prescribed fire would reduce the amount of burnable fine fuels which, in turn, may slightly reduce the number of large wildfires and average annual acres burned.

4.6.2 Alternative B (Suspended Use)

The amount of fine fuels available to carry wildfire would increase in the short-term due to no grazing on 45 percent (see Table 1) of the landscape. This in turn is expected to increase the number of large wildfires and the average annual acres burned. The impacts to resources from prescribed burning under this alternative would be the similar to those described for the Proposed Action.

4.6.3 Alternative C (No Action)

Under current management strategies, additional prescribed burns have not been proposed, although this still remains an option. The Rail Canyon Prescribed Fire, initiated in 1999, would be completed in the next one to two years. The impacts from any prescribed burns would be the same as described for the Proposed Action.

4.7 HYDROLOGY AND WATER QUALITY

4.7.1 Alternative A (Proposed Action)

Implementation of the Proposed Action would improve water quality through increased health of uplands and riparian areas. Grazing management strategies, including construction of pasture division fences to create riparian pastures, developing water sources outside of riparian corridors, herding livestock, and utilization limits, particularly in riparian zones, would increase vegetation and soil stability which contribute directly to water quality. Proposed grazing schedule changes limiting grazing in riparian areas during the hot season and late in the fall season (LAMP, Appendix C) would increase woody vegetation, creating better shade which would lower water temperatures. Limited and early season use of herbaceous riparian vegetation would allow for regrowth of the vegetation by mid-summer, stabilizing streambanks and increasing the filtering of sediments. Limited use of riparian areas would also decrease coliform input and erosion due to hoof action. With the Proposed Action, water quality would continue to improve towards DRFCs in those areas meeting standards. Where water quality is limited, the Proposed Action would allow progress towards meeting the standards and DRFCs.

The hydrologic function and water quality of streams is expected to improve over current levels in both the short- and long-term. Short-term negative impacts to surface water quality would result from projects outlined in the LAMP. Infiltration rates are likely to decline immediately following prescribed burns, seedings, and brush controls causing an increase in overland flows. Prior to vegetation regrowth, areas subjected to high intensity storms would contribute to flashy runoff, and erosion and sediment transport would be increased. Fence projects would contribute to short-term soil instability that would negatively impact water quality. Fences aimed at lessening grazing impacts to riparian areas would increase riparian vegetation communities positively influencing water quality and hydrology. Over the long-term, vegetation treatments would increase desirable herbaceous, shrub, and tree species which would contribute to landscape stability and improve water quality.

Major access roads which cross through streams would continue to negatively impact hydrologic functions and water quality. Crossings which are not hardened, repeated crossing points, and high frequency access points would cause an increase in localized disturbances and downstream sediments. These impacts are expected to continue under the Proposed Action.

4.7.2 Alternative B (Suspended Use)

Implementation of Alternative B would have similar impacts as the Proposed Action. In areas where grazing is suspended for 3 years, water quality would be accelerated. The removal of livestock would eliminate fecal coliform inputs for 3 years. Erosion would decrease due to the lack of soil disturbances, creating less sediment loading in streams over the short-term. Grazing impacts on riparian vegetation would be eliminated over the short-term allowing the vegetation to positively impact stream temperatures and provide bank stability. Alternative B would continue to improve water quality towards DRFCs in those areas meeting SRH. Where water quality is limited, the Proposed Action would allow progress towards meeting the SRH and DRFCs. Short-term and long-term impacts to water quality as a result of projects would be similar to those in the Proposed Action.

4.7.3 Alternative C (No Action)

The impacts to hydrology and water quality would be similar to those described for Alternative A and solutions to resource problems would occur over a longer period of time. The condition of streams would continue to degrade in areas not meeting SRH. With continued degradation of the streams, the stream reaches with poor water quality would have the potential to negatively impact those stream reaches which are currently meeting SRH. Effects from upstream pollutants, excessive sediment, and streambank instability would influence the functionality of a stream. Erosion and stream instability would also contribute to negative upstream impacts.

Under this alternative, the level of prescribed fire may be less and result in more frequent and widespread wildland fires. This scenario has the potential to impact more acreage, causing increases in overland flows, soil erosion, and direct and indirect impacts to water resources and water quality.

Current grazing management has been based upon existing AMPs where riparian objectives were established for only 12 of the 65 pastures defined as riparian following FY1998 assessments. Consequently, the current conditions of riparian habitats, and the hydrologic function of streams and water quality has degraded in many areas accessible to livestock.

4.8 FISHERIES, WILDLIFE, AND SPECIAL STATUS ANIMALS

4.8.1 Fisheries

4.8.1.1 Alternative A (Proposed Action)

Short-term aquatic habitat conditions along all streams would show slight to moderate improvement due to changes in grazing systems and projects that reduced livestock impacts to riparian areas. Early season livestock use and limited hot season grazing would allow riparian vegetation to increase. Most fish habitat improvement would be due to increased riparian vegetation shading along streams and the stabilization of streambanks. Slight water quality improvement would occur as increased upland vegetation and litter reduced silt transport from upland areas. Habitat for hatchery rainbow trout would improve in three reservoirs where Livestock were excluded due to reduced siltation and fecal material, and increased bank vegetation.

Long-term improvements in fish habitat would be moderate, as woody riparian vegetation grew taller and provided more shade than currently exists. Better livestock management in upland habitat would provide additional benefits. Increased herbaceous vegetation and litter would decrease silt input to streams.

4.8.1.2 Alternative B (Suspended Use)

Livestock grazing would be suspended for 3 years in 18 pastures with riparian/aquatic habitat, many of which have fish-bearing streams. Existing riparian shrubs would grow taller and thicker at a faster rate than under the Proposed Action and the additional shade may lower water temperatures somewhat more effectively. Additional root growth from woody and herbaceous vegetation would capture more silt and, therefore slightly improve water quality. As Livestock would return to these pastures, the new

grazing systems would allow aquatic habitat improvement to occur at a faster pace than the Proposed Action due to the improved health of riparian plants. Some rested pastures without fish habitat are upstream of fish-bearing segments. Resting these upstream pastures would slightly improve upland vegetation, reducing silt delivery to riparian areas, and thereby improving fish habitat downstream. Slight improvement to fish habitat would occur in the short and long-term due to increased growth of upland and riparian vegetation.

Fisheries would be at risk if silt and ash generated by fires in the watershed entered the inhabited streams. There would be a slight increase in the risk of fire due to additional fine fuels accumulating during 3 years of suspended use. However, most rested pastures currently are deficient in grasses and forbs, and the rest period would only raise the fire risk to that of proper functioning pastures. Should a pasture within or upstream of a fish bearing segment burn, there would be a short-term decline in fish habitat conditions due to silt and ash entering the system.

Long-term fish habitat conditions would improve faster due to a faster rate of improvement in riparian vegetation in the 18 rested pastures. Slightly improved conditions would occur in stream segments downstream of rested pastures due to better functioning conditions upstream. Additional fish habitat improvement would occur due to secondary improvements in upland habitat as additional accumulation of grasses and forbs reduced erosion. This additional accumulation of grasses and forbs could also lead to an increase in the incidence of fire decreasing juniper dominance. The eventual regrowth of grasses and forbs following these fires could reduce soil erosion into streams and improve the habitat quality for fish.

4.8.1.3 Alternative C (No Action)

Fisheries habitat would slightly improve in those stream segments currently at proper functioning condition or in upward trend. Current riparian conditions are not satisfactory, and trends are not upward in at least one stream segment composed of 33 pastures. Unsatisfactory fish habitat conditions would persist in these stream segments in the short and long-term.

4.8.2 Wildlife

4.8.2.1 Alternative A (Proposed Action)

Effects to wildlife habitat would occur from changes in grazing seasons of use, projects and secondary factors resulting in changes in vegetation. Because of different habitat needs of various wildlife species, proposed management actions and projects would benefit some species, and be neutral or detrimental to others. Important wildlife habitats were identified in the LAMP and included lower elevation winter habitat critical for mule deer and pronghorn, sagebrush-steppe and aspen/juniper woodlands used by breeding neotropical migratory birds, and riparian areas

Proposed grazing systems would slightly improving habitat conditions in the short-term by increasing annual grasses and forb understory in pastures important to wintering big game species. Little long-term improvement would occur in these annual rangelands from livestock management practices. Changes in grazing seasons would occur in several pastures where mountain shrub communities were

impacted by livestock. Reduced grazing pressure during critical seasons would allow increased plant growth and seedling survival, benefitting most wildlife species. Improved livestock management in riparian areas would result in moderate wildlife habitat improvement in the short- and long-terms due to increased woody vegetation and longer availability of surface water in some drainages.

Proposed projects in 13 pastures designed to rehabilitate portions of old crested wheatgrass seedings and annual-dominated rangelands would moderately improve herbaceous understory while leaving sufficient sagebrush for wildlife. Proposed fencing would not affect wildlife habitat since Bureau fencing standards would be followed. Other construction projects would have little effect on wildlife habitat at the time of construction. Where new water projects concentrate livestock in areas not previously grazed, a moderate loss of habitat for song birds and some small mammals would occur. Mule deer and pronghorn would be able to travel through impacted areas and would slightly benefit for additional water sources.

Proposed projects designed to burn aspen or juniper communities in four pastures would decrease habitat needed by mule deer, elk and several songbird species for several years due to the loss of structure and cover. Within the short-term there would be recovery of the understory sufficient to provide habitat for several wildlife species adapted to grassland habitat, and increased forage preferred by elk, mule deer, and pronghorn. Different wildlife species would begin using burned areas as shrubs invaded in the mid- to long-term. Over the long-term, prescribed fires would improve wildlife habitat by providing a mosaic of habitat conditions for a diversity of species.

4.8.2.2 Alternative B (Suspended Use)

Livestock would be removed from12 pastures deficient in grasses or forbs used by wintering pronghorn and mule deer and breeding neotropical migratory birds. Slight to moderate short-term improvement in habitat would occur as the vigor of established plants and seed production increased. Better nutrition and additional hiding cover would slightly increase reproductive success of most wildlife species. Increased seedlings establishment would result in slight, long-term habitat improvements that would be perpetuated by new grazing systems.

Livestock use would be suspended in 18 pastures with riparian vegetation. The faster growth of woody vegetation, more residual cover and reduced disturbance would increase big game and songbird use of this community in the short-term. Slight improvement would continue into the long-term. In two pastures with poor quality bitterbrush or other mountain shrub communities, suspended livestock grazing would increase plant vigor and establishment of seedlings. In the long-term, the faster initial recovery rate would be perpetuated by improved grazing schedules in subsequent years. In two other rested pastures, the aspen community currently affected by livestock would not improve due to a high elk population. Elk would likely increase their aspen consumption proportionate to the reduction in livestock use during the 3 years of non-use.

A slight increase in wildfire potential would occur due to the increased amount of fine fuel in all 24 rested pastures. However, the risk of fire would be similar to that of pastures currently meeting grazing standards. Fires in the eight pastures with juniper would decrease the habitat for songbirds species

requiring more structure while improving conditions for those preferring grasslands. In the long-term, sagebrush would reestablish in burned areas and provide additional habitat for other songbird species. Removing juniper vegetation in burned areas would eliminate some hiding and thermal cover for deer and elk in the short-term, but would greatly improve forage conditions within two growing seasons. Localized, short and long-term habitat improvement is expected from 3 years of livestock suspension in eight pastures with juniper.

Reduced disturbance to wildlife from livestock and ranch management activities would occur in all 24 rested pastures. This would result in a slight increase in reproductive success of songbirds due to reduced trampling, and the increased residual cover would reduce predation. Other effects from the grazing systems established following livestock suspension and the completion of proposed projects would be similar to those in the Proposed Action in the short and long-term.

4.8.2.3 Alternative C (No Action)

Continuation of current management strategies would allow unacceptable habitat conditions to be perpetuated in 57 pastures in I and M allotments not meeting the minimum standards necessary for healthy fisheries, wildlife and native plant species (see Appendix C of the LAMP). Currently only 15 pastures have wildlife objectives identified in AMPs. Unsatisfactory conditions in 13 low elevation pastures with decadent crested wheatgrass seedings or locked-in annual rangeland important to wintering big game would be perpetuated. Mountain shrub communities important to wildlife would remain in unsatisfactory condition where the cause was the current grazing season of use. Riparian areas currently not properly functioning or in upward trend would not provide potential habitat for wildlife. Juniper coverage in pastures with proposed prescribed fires would not be burned allowing young junipers to encroach into sagebrush, aspen and riparian communities, adversely affecting wildlife species intolerant of increased structure.

4.8.3 Special Status Animals

4.8.3.1 Alternative A (Proposed Action)

Special status species include riparian/aquatic (Northern bald eagle, Columbia spotted frog, and redband trout) and upland (Western sage grouse and Northern goshawk) species. Effects on special status wildlife and fish dependent on riparian/aquatic habitat would be similar to the effects on fisheries and wildlife in both the short- and long-term. The proposed grazing systems and projects would improve riparian and upland vegetation, increasing the quality of water running off the watershed and stability of stream flows. Improved water quality and quantities would provide slight to moderate improvements in habitat for spotted frogs, redband trout and bald eagles in the short-term and moderate improvement in the long-term.

Sage grouse on leks would benefit moderately where Livestock are not allowed in pastures until after the courtship period. Sage grouse nesting habitat would benefit moderately by the new grazing systems that maintained 7-9 inches of herbaceous cover within 2 miles of leks. Proposed prescribed fires would remove encroaching juniper trees from nesting and brood rearing habitat in three treated pastures providing slight short-term and moderate long-term benefits within these pastures. Slight to no adverse

impacts would occur to sage grouse winter habitat where

sagebrush was killed in old seedings or where annual rangeland was reseeded. These projects would affect only a small percentage of available sagebrush habitat.

4.8.3.2 Alternative B (Suspended Use)

Effects of Alternative B upon habitat important to upland and riparian special status species generally would be similar to other wildlife. A partial exception would be effects on sage grouse. Three years of non-use in 6 rested pastures within 2 miles of sage grouse leks would rapidly increase the vigor of existing grasses and forbs improving the protection of grouse nests from predation. In 3 pastures with proposed prescribed fire projects and 3 other pastures without proposed burning the 3 years of non-use would increase the fire potential. Fires in these six pastures would reduce juniper encroachment and provide slight to moderate habitat improvement for sage grouse. Improved habitat conditions for Western sage grouse would increase reproductive success and slightly reduce the need for listing this species under the Endangered Species Act (ESA).

4.8.3.3 Alternative C (No Action)

Implementation of the No Action Alternative would maintain current habitat conditions for special status species. Species dependent on riparian and aquatic habitats would continue to benefit from improvements in the 12 pastures with riparian objectives and in the other pastures with riparian vegetation in functioning condition or in upward trend. Riparian areas in unsatisfactory condition or in a downward trend would continue to not meet special status species needs. Sage grouse nesting and brood rearing habitat would continue to deteriorate in all pastures with juniper. Grazing systems in pastures with sage grouse leks impacted by early spring grazing and nesting habitat with insufficient herbaceous understory would continue to negatively impact grouse habitat.

4.9 RANGELAND/GRAZING USE

4.9.1 Alternative A (Proposed Action)

The Proposed Action recommends changes to existing grazing schedules which would be implemented beginning in FY2000. This program would continue to provide for a sustained level of livestock grazing consistent with other resource objectives and public land use allocations. These grazing schedules, which incorporate season-of-use modifications, utilization levels, duration of use, and distribution, all address specific resource concerns, including on-going recreation activities, special management areas, and access. The focus of the grazing program would be to improve or maintain resource conditions related to watershed functions in the uplands and riparian areas, ecological processes, and for native, threatened and endangered, and locally important species.

There would be no immediate reductions in active grazing use, although more stringent utilization limits may in some cases require early removal of livestock from public rangelands. There would be short-term negative impacts to some permittees from implementing prescribed fire which requires, at a minimum, two growing seasons of rest to ensure vegetation recovery. In the long-term, permittees would benefit due to increased and improved forage conditions.

Permittees would see slight increases in operation and labor costs due to the increased herding requirements under the Proposed Action.

4.9.2 Alternative B (Suspended Use)

Under this alternative, grazing use would decrease by 17,598 AUMs representing 45 percent of the landscape area. Loss of AUMs are shown by allotment in Table 1**.** It is expected that some current grazing operations would not be viable under this alternative. Impacts to operators would depend on the rate of recovery of the vegetation communities within the pasture(s) as they relate to meeting SRH or LAMP objectives and the amount of suspended AUMs. Short-term and long-term impacts due to wildland and prescribed fire would be similar to the Proposed Action, but would slightly increase due to the expected increase in number and size of wildfire.

4.9.3 Alternative C (No Action)

There would be no immediate impact to permittees in the short-term. In the long-term, adjustments would be made to individual permits and grazing schedules in order to meet resource objectives and SRH. These adjustments could include reductions in active AUMs or changes in season of use. Prescribed fire may not be as aggressive as under the Proposed Action and permittees may not experience as many short-term suspensions of grazing use in burned areas. Although short-term direct impacts to continuous livestock grazing may be minimal, long-term impacts would be realized due to continued declines in forage conditions.

4.10 RECREATION AND VISUAL RESOURCES

4.10.1 Alternative A (Proposed Action)

The development of 19 miles of livestock fences would have an insignificant impact on dispersed recreation activities such as hunting, hiking and wildlife observation. The additional fence placement in areas open to off-highway vehicle use would result in an insignificant hindrance to recreation use.

Various prescribed burns or other vegetation manipulation projects would cause short-term site-specific decreases in certain dispersed recreation activities such as big game hunting. With prescribed burns occurring throughout much of the life of the plan, such site-specific impacts would be long-term, but with individual burn sites affected only short-term. Improved riparian and upland native habitats, and increased wildlife forage would slightly enhance hunting and wildlife viewing opportunities in the long-term. The loss of habitat biodiversity caused by newly established seedings would create site-specific short- and long-term adverse impacts on some wildlife viewing and hunting opportunities, but would be insignificant within the landscape area as a whole. The limited number of management actions improving aspen health and recovery would result in a long-term degradation in the level of quality recreation experiences for some activities (e.g., hunting, wildlife viewing, and dispersed camping) which rely on such settings.

Most management actions would meet visual resource management (VRM) objectives within either VRM III or IV classified areas. Cumulatively, construction of new rangeland facilities would result in relatively small visual changes to the landscape.

Fire blackened areas would have a short-term, temporary adverse visual impact to affected settings until desired vegetation is re-established. New areas of crested wheatgrass seedings and brush beating actions would meet only VRM class IV management objectives. Tree stumps remaining from juniper cutting would create a long-term change in visual setting, yet meet VRM Class IV objectives. Juniper stumps would meet VRM Class III objectives where juniper cutting or other woody vegetation projects are kept small in size, dead vegetation is substantially eliminated on-site, where projects are spatially separated from each other, and located in a mosaic pattern in relation to topography and other natural features. Visual quality would be enhanced by other actions which improve natural resource and habitat conditions.

4.10.2 Alternative B (Suspended Use)

Impacts to dispersed recreation use opportunities would be similar to the Proposed Action. In pastures where livestock use is suspended, the quality of a recreation experience would be enhanced for recreationists who prefer to avoid livestock. Within riparian areas and aspen groves with suspended livestock use, certain recreation opportunities (e.g., hunting, wildlife viewing, and camping) would be enhanced at a faster rate.

Impacts to visual resources would be as described under the Proposed Action. Additionally, suspended livestock use would allow for accelerated enhancement of scenic quality in affected areas; particularly within riparian corridors and aspen groves. Overall, visual enhancements within the landscape area would occur at a more accelerated rate under this alternative.

4.10.3 Alternative C (No Use)

Dispersed recreation uses and opportunities would remain available, but limited compared to Alternatives A and B. Under this alternative, enhancement of recreation uses and opportunities would take the greatest period of time, if accomplished at all. Where livestock uses are presently adversely affecting recreation, improvement would be delayed until individual allotment management plans are updated. Any enhancement of recreation opportunities would occur in a more sporadic manner than under Alternatives A and B with no continuity or connectiveness within the landscape area. Wherever dispersed recreation-dependent resource conditions deteriorated, there would be a gradual short- to mid- term decline in the quality of dispersed recreation uses and opportunities.

Under this alternative, the enhancement of visual quality would occur the slowest rate compared to Alternatives A and B. Improvement of visual quality at visually sensitive locations, such as riparian areas, would occur sporadically and would take longer. The extent of vegetative manipulation and prescribed fire would be the least under this alternative, with associated visual impacts from these actions being less evident through time.

4.11 SPECIAL MANAGEMENT AREAS - WILDERNESS STUDY AREAS, ACEC/RNAS, WILD AND SCENIC RIVERS

4.11.1 Alternative A (Proposed Action)

The Proposed Action is not expected to have any additional impacts to the Beaver Dam Creek WSA or the two proposed ACEC/RNAs beyond those under current management strategies. If the WSA is designated, the primary and secondary wilderness values would be preserved and protected (see Section VI of the LAMP). Currently, four grazing allotments lie within the WSA; livestock grazing would be allowed to continue. Maintenance of existing rangeland improvement projects would still occur. At this time, two additional fences have been proposed within the WSA. The Proposed Action would continue to improve habitat conditions for wildlife species.

No impacts would be anticipated to two ACEC/RNAs proposed for designation in the Draft SEORMP. Proposed projects in the area would be evaluated for impacts to relevant and important values and would be permitted where those values would be maintained or enhanced. The grazing system proposed for these pastures would continue to maintain the excellent vegetative conditions found in the area.

4.11.2 Alternative B (Suspended Use)

For the Beaver Dam WSA and South Fork Indian Creek study stream, the impacts and management requirements would be the same as described under Alternative A (Proposed Action). The analysis of the two ACEC/RNAs proposed for designation in the Draft SEORMP would also be the same as Alternative A (Proposed Action). No reduction in grazing use for 3 years would occur in these pastures because both pastures met standards for rangeland health.

4.11.3 Alternative C (No Action)

For the Beaver Dam WSA and South Fork Indian Creek study stream, the impacts and management requirements would be the same as described under the Proposed Action. The analysis of the two ACEC/RNAs proposed for designation in the Draft SEORMP would also be the same as Alternative A (Proposed Action).

4.12 SOCIO-ECONOMIC VALUES

4.12.1 Alternative A (Proposed Action)

Under the Proposed Action, there would be little to no expected change in the socio-economic values within the landscape area. All land use activities would occur as in the past. The major impact of this alternative would be changes in grazing schedules in pastures where grazing was determined to be the primary cause for not meeting SRH or other resources values of concern. This alternative could result in small decreases in local economic activity, employment, and income generated by BLM managed resources. Minor impacts of short-term duration may affect recreational activities, wildlife and livestock grazing operations during periods of prescribed burns, or rangeland rehabilitation projects. This alternative is not expected to adversely impact recreational activities or visual resource values.

4.12.2 Alternative B (Suspended Use)

Under this alternative, the expected economic impact would be substantial to those permittees affected by the suspension of use in all pastures where SRH were not being met, and current livestock grazing was determined to be the primary cause. Livestock operators would be required to run fewer numbers on public land or to move livestock to other pastures or private land once utilization levels or the pasture objectives have been met. The suspension of use would affect 45 percent of the landscape area and 12 operators. The resumption of livestock grazing in those pastures would only be permitted where there was a reasonable expectation that grazing could occur without setbacks to the recovery of the ecosystem.

Under this alternative, some livestock operators could go out of business. Recreational use may increase in those pastures where livestock grazing has been removed, and the habitat improves the hunting, fishing and other recreational opportunities. Visual resource values are also expected to improve in areas where habitat conditions are currently not functioning properly.

Where prescribed burns have been proposed, the short-term impacts to visual resources due to the blackened nature of the landscape would be minimal. Prescribed fire would be conducted to minimize the impacts to all resources in both the short- and long-term, and appropriate mitigation measures would be taken to protect resources while achieving the desired goals and objectives of the burn.

4.12.3 Alternative C (No Action)

Under this alternative, there would be little to no change in the socio-economic values within the landscape area. Long-term impacts to the livestock industry would occur as a result of the steady downward trend of upland and riparian vegetation. Also, increasing juniper may result in forage losses for livestock and a possible reduction in livestock numbers and grazing duration. This habitat decline would also have a negative effect on the recreational and visual resource values of the area. The impacts from prescribed burns would be the same as Alternative A.

4.13 CULTURAL RESOURCES

4.13.1 Alternative A (Proposed Action)

Rock art, rock shelters and structures, habitation sites around springs, small camps at stream-side meadows and on alluvial deposits, quarries, transportation corridors, and the remains of homesteads, stage and telegraph stations comprise the types of pre-historic and historic cultural sites found scattered across the landscape area.

The management proposed for riparian areas to improve water quality and aquatic habitat while reducing soil erosion would benefit cultural resources. Establishing riparian buffer zones and restricting livestock grazing along streams would also maintain cultural site conditions. Livestock congregation and trampling around streambanks and springs has the potential to adversely impact cultural resources; however, the Proposed Action addresses this concern by improved grazing systems, changes in livestock distribution by constructing pasture division fences combined with riding, and in spring

protection and building alternate water sources.

Prescribed burns and wildland fires of low intensity would have little to no effect on prehistoric lithic scatter sites, unless heavy equipment is used to blade fire lines. Conversely, high intensity fires can adversely effect these sites when extreme heat damages toolstone and debitage as well as historic buildings that might be present.

Cultural Resource surveys would be conducted to locate any unknown resources, and potential impacts would be mitigated by avoidance, prior to surface disturbance.

4.13.2 Alternative B (Suspended Use)

The impacts from this alternative and mitigation measures are expected to be similar as for the Proposed Action. There may be a temporary reduction in impacts to cultural resources from livestock grazing and congregation in those areas where use is suspended. There would be less impacts to cultural resources because of the increased vegetation growth and cover, which would decrease the visibility of prehistoric and historic sites. Increasing vegetation cover would also benefit cultural resources by decreasing the effects of soil and wind erosion and other site deformation processes.

Prescribed burns and wildland fires of low intensity would have little to no effect on prehistoric lithic scatter sites, unless heavy equipment is used to blade fire lines. Conversely, high intensity fires can adversely effect these sites when extreme heat damages toolstone and debitage as well as historic buildings that might be present.

As with the Proposed Action, prior to project construction, surveys for cultural resources would be conducted to locate any unknown resources and potential impacts would be mitigated for by avoidance.

4.13.3 Alternative C (No Action)

The impacts to cultural resources under this alternative would continue as at present. As with the Proposed Action, prior to project construction, surveys for cultural resources would be conducted to locate any unknown resources and potential impacts would be mitigated for by avoidance.

4.14 PALEONTOLOGY

4.14.1 Alternative A (Proposed Action)

No systematic paleontological inventories have been conducted within the Bully Creek Landscape Area for fossil flora and fauna. Prior to any project construction, surveys for fossil resources would be conducted to locate any unknown resources and potential impacts would be mitigated for.

4.14.2 Alternative B (Suspended Use)

Same as Alternative A (Proposed Action).

4.14.3 Alternative C (No Action)

Same as Alternative A (Proposed Action).

4.15 ACCESS

4.15.1 Alternative A (Proposed Action)

The acquisition of non-exclusive easements for those portions of 553, Gregory, Pole Creek and Spring Roads which have been identified, would afford BLM and its licensees and permittees access to the public land served by these roads. This would ensure adequate administrative access for the effective administration of the land.

The acquisition of exclusive easements on these road segments would allow the public to use them. However, the public may not be able to legally reach these segments because BLM holds only non-exclusive easements on portions of roads in the LAMP area.

If one or more of these roads is claimed as a public road by Malheur County through the assertion of rights under Revised Statute 2477, or by some other means, full and free access would be enjoyed by members of the public. BLM has no control over the County's decision to make claims as to the public nature of roads within its boundaries. However, the likelihood of the occurrence of such claims should be a factor in BLM's decision as to whether to acquire a particular access easement.

4.15.2 Alternative B (Suspended Use)

Same as Alternative A (Proposed Action).

4.15.3 Alternative C (No Action)

Same as Alternative A (Proposed Action).

4.16 CUMULATIVE IMPACTS

4.16.1 Alternative A (Proposed Action)

During data analysis for the landscape area, the effects of historic and current uses were assessed and taken into consideration in developing management recommendations which would lead to reasonable time frames for habitat improvements. The management prescriptions for the LAMP are consistent with the intent and direction described in the Draft SEORMP/EIS, which is designed to enhance natural values and preserve options for future management.

The Proposed Action forecasts the need to engage various activities during implementation of the LAMP. Because the exact location, timing and duration of future (beyond FY1999) activities is unknown at this time, the need to implement any activities would be assessed to ensure they are within the scope of the LAMP, and do not exceed thresholds (cumulative impacts) for disturbances as described in the Draft SEORMP/EIS (USDI/BLM 1998b). Activities would be prioritized based on the analysis completed for the Subbasin Review (USDI/BLM 1998a), as amended (considering current data and management direction). This would be done through the Administrative Determination process, which evaluates the requirement for additional environmental analysis.

Under the Proposed Action, livestock grazing would continue at current levels; however, grazing schedules, utilization rates, duration of use, and other actions such as riding and fencing to improve livestock distribution would move resources towards meeting the standards for rangeland health and desired range of future conditions. There are no proposals to construct recreation facilities or new roads; it is expected that maintenance of existing projects (reservoirs, cattleguards, fences, water developments, roads, etc.) would continue as in the past without causing any addition impacts to the landscape area. The use of prescribed fire is expected to increase over past and current levels. Future minerals exploration and development is expected to remain unchanged over past and present levels. Wildlife populations are expected to rise over current numbers, corresponding with habitat improvement. The effects of increasing numbers of big game may be positive (in terms of recreation opportunities) and negative (contributing to vegetation, soil, water quality degradation). Recreation activities (hunting, fishing, sightseeing) are expected to increase over past and present levels.

Private land adjoining public land within the landscape area are currently being grazed or are under agricultural production (alfalfa, wheat). Livestock grazing (feeding) occurs on private land during the winter, and permittees rely on public land for forage during the spring, summer and fall. There is no change expected in the future under this alternative. No other developments or uses are anticipated.

4.16.2 Alternative B (Suspended Use)

If livestock use is suspended, this would represent a change in past and present grazing activities within the landscape area. It would be difficult to assess the magnitude of future impacts; with a 41 percent reduction in livestock AUMs occurring in 8 of the 12 I and M allotments, this may have an impact on the local and county economy. Although livestock grazing would be still be permitted in certain pastures, and grazing may be resumed in those suspended from use once resource conditions begin to improve, this may potentially put as many as 12 operators out of business.

Resource conditions are expected to show improvement in the short-term. This would result in an overall improvement of soils, vegetation, water quality, and dependent wildlife species. Increases in wildlife populations may result in more hunting opportunities, and may cause additional pressure on resources (particularly riparian/wetland areas), both from big game and the public.

4.16.3 Alternative C (No Action)

As with the Proposed Action, management prescriptions under this alternative would be consistent with the intent and direction described in the Draft SEORMP/EIS, which is designed to enhance natural values and preserve options for future management. Under current management practices, livestock grazing has been identified as the cause of resource problems in 8 of the 12 I and M allotments (or 45 percent of grazed public land in the landscape area). Although this is an improvement over historic management, implementing changes within these 8 allotments is required by FY2000. The likelihood that those grazing schedules developed for the Proposed Action would be adopted under this alternative is unknown. Those schedules, in part, depended on taking a landscape look at all allotments, including private land. Permittees may or may not be willing to incorporate other options (i.e., grazing private land with public land, running livestock in common with other permittees, using other pastures in different allotments) into their current grazing operations. This alternative keeps alive

the piece-meal approach to resource management, and does not adequately address cumulative impacts to all actions.

There are no changes expected for minerals exploration and development, recreation, and access needs. Prescribed fire may not be as aggressive as with the Proposed Action, since burning often takes coordination among adjoining landowners to achieve effective results. Wildlife populations are expected to increase, although big game may not be as wide-spread as under Alternatives A and B. There are no short-term impacts expected to the local economy; long-term impacts may be static or even down due to an inability to coordinate habitat recovery actions across the landscape area.

4.17 UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse impacts are those residual impacts that would likely remain after mitigation. The effects from proposed project implementation would be similar for all 3 alternatives since the same projects would be constructed in all 3 alternatives. The time in which the effects would occur is the only difference between the 3 alternatives. If Alternative A were approved, project work could begin as soon as the fall of 1999 and proceed annually based on the availability of funding. Alternative B would evaluate the resource needs after a minimum of 3 years, so proposed project work would not occur until the fall of 2002. Alternative C would implement project work at a slower rate annually and take a longer time to complete the proposed project list. Unavoidable adverse impacts would include:

1) Localized trampling of soil around newly developed water sources.

2) Localized wildlife mortality associated with collisions or entanglement in 19 miles of new fence. Fence construction would follow BLM guidelines designed to facilitate the movement of wildlife through fencing but some mortality would still occur.

3) Erosion from climatic events following planned prescribed burns.

4) Many incised stream reaches currently in nonfunctional condition or functioning at risk with a downward trend would continue to downcut to a hard layer as a result of the continuation of hydrologic processes, regardless of the alternative selected. Correspondingly, those upland and riparian pastures that are currently nonfunctional with a downward trend risk passing the threshold where they can no longer be returned to a productive state.

4.18 RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The balance (trade-offs) between short-term uses and long term productivity is discussed below for each Alternative.

4.18.1 Alternative A (Proposed Action)

The dominant land use throughout the landscape area is livestock grazing, which occurs on all but 2,200 of the 269,000-acre public land base. The recommendations and monitoring as described in the LAMP are designed to achieve the identified goals and objectives to improve or maintain ecosystem function, ensuring the landscape area moves towards the desired range of future conditions. Implementing the LAMP would also comply with SRH requirements.

In the short-term (within 10 years), the proposed action would generally reduce dominance by woody species and increase mosaics of diverse structures of multiple-aged shrubs, forbs, and perennial grasses in the upland communities with the use of prescribed fire. In riparian areas, the dominance of woody species would be increased creating a diverse structures of multiple-aged shrubs, forbs, and perennial grasses. This would result in greater productivity, and improved natural functions and watershed stability in both vegetation communities. Shrub reintroduction into burned sites would maintain diversity at a moderate scale, especially within habitat of sagebrush-dependent wildlife species. The objectives of maintaining or improving ecosystem function so that resource values would move towards DRFC would continue at a slower rate than Alternatives B but faster than Alternative C.

In the long-term (20 years plus), vigor and health of vegetation communities, which includes maintenance of soil stability and energy, nutrient, and water cycling, would be improved across the landscape. Water quality, vegetation, soils and dependent fish and wildlife species would all benefit from the proposed action.

4.18.2 Alternative B (Suspended Use)

Under this alternative, the expected economic impact would be substantial to those 12 permittees affected by the suspension of use in 24 pastures where SRH were not being met, and current livestock grazing was determined to be the primary cause. Livestock operators would be required to run fewer numbers on public land or to move livestock to other pastures or private land once utilization levels or the pasture objectives have been met. The suspension of use would affect 45 percent of the landscape area (266,579 acres) and 41 percent (120,371) of the AUMs available to be leased. Some of the 12 livestock operators could go out of business. Concentrating livestock on private lands could heighten the impact to resources, including riparian resources, which in turn would affect adjoining land. The resumption of livestock grazing in those pastures would only be permitted where there was a reasonable expectation that grazing could occur without setbacks to the recovery of the ecosystem. Proposed grazing schedules developed for Alternative A would likely be used with this Alternative.

In the short-term (within 10 years), Alternative B would have the same positive impacts to the vegetation communities as Alternative A but occur at a faster rate. In the upland communities, there would generally be a reduction in the dominance of woody species and increase mosaics of diverse structures of multiple-aged shrubs, forbs, and perennial grasses with the increased use of prescribed fire. In riparian areas, the dominance of woody species would be increased creating a diverse structures of multiple-aged shrubs, forbs, and perennial grasses. This would result in greater productivity, and improved natural functions and watershed stability in both vegetation communities. Shrub reintroduction into burned sites would maintain diversity at a moderate scale, especially within habitat of

sagebrush-dependent wildlife species. The objectives of maintaining or improving ecosystem function so that resource values would move towards DRFC would continue at the fastest rate of the 3 Alternatives.

Recreational use may increase in those pastures where livestock grazing has been removed and the habitat improves for hunting, fishing and other recreational opportunities. Visual resource values are also expected to improve in areas where habitat conditions are currently not functioning properly. Where prescribed burns have been proposed, the short-term impacts to visual resources due to the blackened nature of the landscape would be minimal. Prescribed fire would be conducted to minimize the impacts to all resources in both the short- and long-term, and appropriate mitigation measures would be taken to protect resources while achieving the desired goals and objectives of the burn.

In the long-term (20 years plus), vigor and health of vegetation communities, which includes maintenance of soil stability and energy, nutrient, and water cycling, would be improved across the landscape. Water quality, vegetation, soils and dependent fish and wildlife species would all benefit from Alternative B.

4.18.3 Alternative C (No Action)

Short-term (within 10 years) use of the area would continue with current activities such as grazing, recreation, and wildlife proceeding at present levels. Revisions of 8 allotment grazing schedules by the end of FY2000 would be required to comply with SRH. Proposed grazing schedules developed for Alternative A would likely be used with this Alternative. The objectives of maintaining or improving ecosystem function so that resource values would move towards DRFC would continue at a slower rate than Alternatives A and B.

Long-term (20 years) vigor and health of vegetation communities, which includes maintenance of soil stability and energy, nutrient, and water cycling, would still be the goal across the landscape. The rate at which this might be achieved is the slowest of the 3 alternatives.

4.19 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Irreversible commitments of resources are those that cannot be reversed, except perhaps in the extreme long-term. Many incised stream reaches currently in nonfunctional condition or functioning at risk with a downward trend would continue to downcut to a hard layer as a result of the continuation of hydro-logic processes, regardless of the alternative selected. This would be an irreversible loss of soils in those incised stream stretches. Correspondingly, those upland and riparian pastures that are currently non-functional with a downward trend risk passing the threshold where they can no longer be returned to a productive state. The rate of recovery for these vegetation communities would be the fastest under Alternative B (Suspended Use) followed by Alternative A (Proposed Action) and Alternative C (No Action).

All three alternatives would require that a cultural clearance be completed prior to project implementation. The possibility still remains that cultural resources could be damaged or destroyed during project implementation which would be an irreversible loss of the resource.

There were no other irreversible commitments of resources identified with any of the 3 alternatives.

Irretrievable commitments of resources are those that are lost for a period of time. In analyzing the 3 Alternatives, all would have irretrievable commitments of resources. The gap between those pastures in poor condition not meeting one or more of the 5 SRH and their potential productivity is an ongoing irretrievable loss. Alternative C (No Action) would have the greater likelihood of irretrievable commitment of resources due to the longer timeframe involved with implementing the changes needed to improve resource values.

4.20 SUMMARY OF ENVIRONMENTAL EFFECTS

A summary of environmental effects is contained in Appendix 1 of this document.

5. List of Preparers

Bob Alward - Recreation, Wild and Scenic Rivers, Wilderness Study Areas
Al Bammann - Wildlife, T and E Animals, Vegetation
Cynthia Tait - Fisheries, T and E Animals
Jean Findley - Botany, Vegetation, T and E Plants, ACECs/RNAs
Lynne Silva - Weeds
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Randy Eyre - Range Management, Vegetation
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Bill Holsheimer - Geology, Minerals
Diane Pritchard - Cultural Resource Management, socio-economic, editor
Tom Dabbs- Editor
Barb Masinton - Team Leader

6. List of Agencies and Persons Consulted

Public involvement was an ongoing process which occurred prior to and during LAMP development. During scheduled public scoping meetings, public informational meetings, and during public review of the Draft LAMP, the public was provided a platform to address their concerns and comments on resource issues, management objectives and recommendations.

Responsible participants and their level of involvement in this LAMP was determined by land

ownership and the position and pattern of property within the landscape area. More than 120 individuals were involved with the development of the LAMP. Alist of participants is on file at the BLM Vale District Office. This included:

- Malheur County Soil and Water Conservation District
- Malheur-Owyhee Watershed Council, Bully Creek Watershed Coalition
- Oregon Department of Fish and Wildlife
- Natural Resources Conservation Service (NRCS)
- Environmental organizations
- Livestock operators and other willing private landowners having interests within this landscape area.

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APPENDIX 1 - SUMMARY OF IMPACTS BY ALTERNATIVE BY RESOURCE VALUE

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Air Resources	Meets Class II Airshed Standards.	Same as Alternative A except: - Direct and indirect impacts to the air resources from project imple- mentation would be slightly less than Alternative A due to less prescribed burning.	Same as Alternative B.
Geology , Energy, and Mineral Resources	No impacts.	Same as Alternative A.	Same as Alternative A.
Soils	Of the total 109 pastures in the landscape area: - 89 pastures are meeting Standard 1 of SRH and would move towards DRFC - 20 pastures where soils are preventing the attainment of Standard 1 would progress towards meeting Standard 1 of SRH and DRFC	Same as Alternative A.	Of the total 109 pastures in the landscape area: - 89 pastures currently meeting Standard 1 of SRH would remain as they are - 20 pastures in a degraded condition would remain as they are -Long term increase in erosion rates from lack of fire in juniper vegetation

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Vegetation Uplands	- 22 of the total 36 upland trend studies moving towards current upland objectives would continue over the short term (10 years). - Herbaceous species composition increases - Plant vigor, seed production, seedling establishment, root production and litter accumulation promoted - Forage production increases - Sagebrush and juniper cover decreases slightly - Trampling of vegetation next to fences and water developments - Increased use of vegetation on private land	Same as Alternative A except - Improvement to vegetation community increases at a faster rate - 14 of the total 36 upland trend studies not meeting objectives would be expected to move towards meeting objectives in 3 years. - Large increase of upland vegetation use on private land due to the 17,598 AUM reduction on BLM managed land in first 3 years	- 22 of the total 36 upland trend studies meeting objectives would remain as they are - Degraded conditions in 14 of the total 36 upland trend study areas would continue - Grazing schedules would need to be developed on the pastures where the 14 upland studies showing degraded conditions are located with recommendations to improve.
Riparian	- 48 miles of riparian vegetation in PFC would remain in PFC - 49 miles of riparian vegetation FAR with an upward trend would continue to improve - Portions of 57 miles of riparian vegetation FAR with trend not apparent would improve - 35 miles of riparian vegetation FARD would improve. - 21 miles of stream that are NF where livestock use has been identified as a factor limiting attainment of PFC would improve. In some areas recovery may require a longer time frame but recovery would occur. - 47 of the 56 pastures identified as having riparian resources are currently not meeting Standard 2 of SRH. 18 are caused by current grazing management practices and would move towards meeting standards in the short-term.	Same as Alternative A except: - Portions of 57 miles of streams currently FAR with an unapparent trend, 35 miles FARD and 21 miles of stream that are NF where livestock use has been identified as a factor limiting attainment of PFC would have a greater short- term rate of recovery than Alternative A and C. - The 18 riparian pastures in which SRH Standard 2 was not met due to grazing management practices would have a faster rate of recovery than Alternatives A and C.	Same as Alternative A except: - 48 miles of riparian vegetation in PFC, 49 miles of riparian vegetation FAR with an upward trend, portions of 57 miles of riparian vegetation FAR with trend not apparent would continue as assessed. - 35 miles FARD and 21 miles of stream that are NF where livestock use has been identified as a factor limiting attainment of PFC would also continue as assessed. In some areas recovery may require a longer time frame but recovery would occur. -- The 18 riparian pastures in which SRH Standard 2 was not met due to grazing management practices would continue to FAR or become NF

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Special Status Plants	No impacts.	Same as Alternative A.	Same as Alternative A.
Aspen - 20 pastures containing aspen	- Proposed 3200-acre prescribed fire in Willow Basin and Bully Creek pastures of the Willow Basin allotment would benefit aspen regeneration - Remaining 18 pastures that have an aspen vegetation community would continue to decline but beneficial projects to improve them would be initiated in later years of implementation.	Same as Alternative A except: -Of the 24 pastures not meeting SRH caused by livestock grazing practices, 10 contain aspen vegetation. Cattle would be excluded for a minimum of 3 years from these 10 pastures resulting in moderate aspen regeneration in the short-term. - In 10 aspen pastures not deferred from livestock grazing the health of aspen would continue to decline until projects could be implemented to improve them	Same as Alternative A except rate of implementing new projects to improve aspen stands would be much slower.
Weeds	- Proliferation of weeds controlled on an annual basis which is expected to slow the spread of established stands and reduce the establishment of new infestations.	Same as Alternative A except: - In areas where perennial grasses and shrubs can respond from no grazing for a minimum of 3 years, competition from the perennials may retard the establishment of new infestations faster than Alternative A.	Same as Alternative A.
Fire History and Management	- Prescribed fire would be conducted in the landscape area where vegetation communities are not meeting resource objectives for diversity, composition, structure, and wildlife habitat needs. - The number of large wildfires and acres burned may be slightly reduced with prescribed fires reducing the amount of burnable fine fuels needed to carry larger fires.	- The number of large wildfires and acres burned is expected to increase with the increase of the amount of fine fuels present as a result of no grazing on 45 percent of the landscape area (120,371 acres). Refer to Table 1.	- The Rail Canyon prescribed fire begun in 1999 would be completed in the next 1-2 years. Additional prescribed fires have not been identified although this still remains an option.

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Hydrology and Water Quality	- Water quality would be improved with increased vegetation and soil stability. - Water temperatures would lower with increased riparian vegetation shading. - Streambanks would begin to stabilize and there would be an increased filtering of sediments as early season grazing schedules are implemented which promotes regrowth of riparian vegetation after livestock leave the area. - Development of riparian pastures would help to reduce coliform counts and erosion from hoof action. - Major roads crossing streams that are not hardened would continue to cause localized disturbances and downstream sediment flow.	Same as Alternative A except: -The rate of improvement would be accelerated with the suspension of livestock use for a minimum of 3 years.	Same as Alternative A except: - Solutions to resource problems may not consider the entire landscape area and may occur later in time. - The conditions of streams would continue to degrade in areas not meeting Standards which could impact downstream areas. -The level of prescribed fire may be less under this alternative which could result in more frequent and widespread , wildland fires. This scenario could result in increased soil erosion with negative impacts to hydrology and water quality. - 8 of 12 I and M allotments would require AMP revisions to be in compliance with SRH prior to March 1, 2000.
Fisheries	-Fish habitat (improved water quality and lowered temperatures) would improve on all streams from increased riparian vegetation shading along streams and stabilization of streambanks. - 3 reservoirs where cattle would be excluded would have improved habitat for hatchery rainbow trout due to reduced siltation and fecal material and increased bank vegetation.	Same as Alternative A except: - The rate of change would be faster than Alternative A and C. - Fish habitat conditions would decline over the short term from the expected increase in the number of large wildfires and acres burned. This is anticipated as a result of the increase in the amount of fine fuels present as a result of no grazing on 45 percent of the landscape area (120,371 acres).	- Fish habitat would slightly improve in 48 miles of the streams in PFC. - unsatisfactory fish habitat conditions would persist in at least one stream segment comprised of 33 pastures

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Wildlife -mule deer and pronghorn critical winter habitat	- Eight of 32 pastures not meeting SRH Standard 5 due to current grazing management practices would move towards meeting the Standard in the short-term (10 years). - Short-term improvement in habitat conditions with improved grass and forb understory. - Changes in grazing seasons in mountain shrub communities would promote plant growth and seedling survival.	- Eight of 32 pastures not meeting SRH Standard 5 due to the current grazing management practices would move towards meeting the Standard within 3 years. - Slight to moderate short term improvement in winter mule deer and pronghorn habitat would occur with the removal of livestock in 12 pastures deficient in grass or forbs. The vigor of established plants and seed production would be expected to increase improving habitat	- Eight of 32 pastures not meeting SRH Standard 5 due to current grazing management practices would remain as they are. - Continuation of current management would leave 57 pastures in I and M allotments not meeting SRH necessary for healthy fisheries and wildlife.
- aspen/juniper woodlands	Proposed prescribed burns in four pastures would decrease structure and cover habitat for mule deer, elk and several songbird species in the short-term. In the long-term following burns, grassland habitats would be enhanced by improving forage for elk, mule deer and pronghorn antelope. Wildlife habitat would also be improved by providing a mosaic of habitat conditions for a diversity of species.	- A slight increase in wildfire potential would occur with the increased amount of fine fuels present as livestock are removed in 24 pastures that would be scheduled for a minimum 3 years of non-use by livestock. Fires in 8 pastures would decrease structure and cover habitat for mule deer, elk and several songbird species in the short- term. - In the long-term following burns grassland habitats would be enhanced by improving forage for elk, mule deer and pronghorn antelope. Wildlife habitat would also be improved by providing a mosaic of habitat conditions for a diversity of species. - Aspen communities would not improve in 2 pastures where live-stock would be removed for a minimum of 3 years due to high elk populations. Elk would likely increase their aspen consumption proportionate to the reduction in livestock use.	- Mountain shrub communities important to wildlife would remain in unsatisfactory condition caused by the current grazing season of use. - Currently only 15 pastures have wildlife objectives identified in allotment management plans. - 13 pastures have decadent crested wheatgrass seedings or locked-in annual rangelands that are in poor condition as big game winter range.
- riparian areas	- moderate wildlife habitat improvement in the short- and long-term due to increased woody vegetation and longer availability of surface water in some drainages.	- Livestock use in 18 pastures with riparian vegetation would be suspended for a minimum of 3 years. This would result in a short-term increase in growth of woody vegetation and residual cover enhancing the habitat for big game and songbird use. In the long-term, the slight improvement to the riparian habitat would continue. .	- Riparian areas currently not in PFC or in an upward trend would not provide potential habitat for wildlife.

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
- special status wildlife	-Slight to moderate improvement of spotted frog, redband trout and bald eagle habitat in the short-term and moderate habitat improvement in the long-term from improved water quality and quantity. - Moderate benefit to sage grouse habitat from: deferment of cattle into pastures with leks until after the courtship period; maintaining 7-9 inches of herbaceous cover within 2 miles of leks; and prescribed fire removing encroaching juniper trees from nesting and brood rearing habitats in 3 pastures. - Slight to no adverse impact to sage grouse winter habitat where sagebrush would be removed to enhance old seedings or reseeding of annual rangelands.	Same as Alternative A except: - 3 years of non-use in 6 pastures within 2 miles of sage grouse leks would improve vigor of existing grasses and forbs enhancing protection of grouse nests from predators. - Potential for increased fire from the buildup of fine fuels with a minimum 3 year exclusion of cattle would reduce juniper encroachment in these same 6 pastures resulting in slight to moderate habitat improvement.	- In the 12 pastures currently managed with objectives with objectives to maintain or improve riparian resources, species dependent on riparian and aquatic habitats would continue to benefit from management actions. The 44 newly identified riparian pastures would not have management objectives developed and would continue to be impacted by current grazing objectives that do not recognize riparian values. -18 pastures where riparian areas FAR or in a downward trend would continue not to meet special status animal species needs. - Sage grouse nesting and brood rearing habitat would continue to decline in all pastures experiencing juniper encroachment.

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Rangeland/Grazing Use - Rangeland Projects			
Livestock Preference	- No decrease in livestock preference.	- Suspension of livestock preference of 17,598 AUMS (41percent) a minimum of 3 years or until SRH met on 8 allotments	Same as Alternative A.
Implementation of new grazing management strategies	- All 20 allotments with landscape area have new grazing management strategies implemented.	- 12 allotments within the landscape area have new grazing manage- ment strategies implemented..	-Two to three allotments might be evaluated under the current schedule with new grazing management strategies developed.
Proposed Projects:			
-Vegetation Treatments	-16,840 acres proposed for vegetation treatment plus those to be planned for Richie Flat Allotment (source LAMP, Appendix A - Table 10) would occur.	Same as Alternative A except: - The priority of constructing projects would not be necessary until progress toward meeting SRH has been attained through livestock exclusion. The proposed projects may not be valid following the exclusion period and would need to be reevaluated based on current resource needs.	Same as Alternative A except the proposed projects would occur later in time.
- Water Developments	-1 windmill constructed, 8 new pipelines/springs constructed, 4 pipeline/springs maintained		
- Fence Construction	- 19 miles of fence constructed plus Willow Creek fence, and 7 exclosures constructed where springs empty into reservoirs.		

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Recreational and Visual Resources	-No short-term impacts to recreation resources or uses. As habitat conditions improve wildlife populations may grow enhancing long-term recreation opportunities. -Visual resources such as visual quality would be enhanced as habitats conditions improve which currently are not functioning properly. Visual impacts from vegetative manipulations would be the greatest under this alternative since the largest number of acres for treatment are proposed.	Same as Alternative A except: -Suspension of livestock use in 8 allotments (24 pastures) encompassing 120,371 acres would enhance the quality of a recreational experience for those who desire not to have their activities influenced by the presence and affects of livestock use. - Within riparian and aspen areas affected by a minimum 3 year livestock suspension of use, recreational opportunities such as hunting and camping would be enhanced. -Visual resource values such as scenic quality would be enhanced at an accelerated rate when compared to Alternatives A and C with the suspension of livestock use for a minimum of 3 years. This would be particularly apparent within riparian corridors and aspen communities. Visual impacts from vegetative manipulations would fall into a range between Alternatives A and C.	- Under this alternative, enhancement of recreation uses and opportunities would take the greatest period of time if accomplished at all. Improvement to dispersed recreation-dependent resources and habitat conditions would be dependent on the rate developing/updating and implementing individual AMPs. Any enhancement of recreational opportunities would occur sporadically with no continuity or connectiveness within the landscape area. -Visual resource values would be enhanced at the slowest rate under this alternative. Improvement of visual quality in riparian and aspen communities would be sporadic and disjointed. Visual impacts from vegetative manipulations would be the least under this alternative and be less evident through time.

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Special Management Areas			
- Wilderness Study Areas, Wild and Scenic Rivers	- No projects are planned for FY1999 within the Beaver Dam Creek WSA. Proposed future projects would need NEPA analysis com- pleted prior to implementation. This would determine if additional analysis would be necessary to meet NEPA and Interim Management Policy (IMP) for Land Under Wilderness Review requirements. Prescribed burns completed in compliance with the IMP could enhance the health of ecological diversity as an identified wilderness value in the Beaver Dam Creek WSA. - There would be no impact to outstandingly remarkable values associated with the South Fork Indian Creek study stream with implementation of this alternative.	Same as Alternative A.	Same as Alternative A.
ACEC's and RNA's	-No impact.	Same as Alternative A.	Same as Alternative A.
Socio-Economic Values	-Little to no impact.	- The suspension of livestock use would negatively affect 12 oper- ators and 45 percent of the landscape area. Under this alternative some livestock operators could go out of business.	Same as Alternative A.

	ALTERNATIVE A - PROPOSED ACTION	ALTERNATIVE B - SUSPENDED USE	ALTERNATIVE C - NO ACTION
Cultural Resources	- The reduction in soil erosion and fencing and reduced use of riparian areas would benefit cultural resources by maintaining site conditions.	Same as Alternative A except: - There would be a temporary reduction in impacts to cultural resources from the minimum 3 year suspension of livestock grazing. Vegetation growth and cover would reduce the visibility of sites and decrease the effects of wind and soil erosion to cultural sites.	- Cultural resource sites would continue to be negatively impacted by soil and wind erosion and continued heavy livestock use in riparian areas.
Paleontology	Unknown impact.	Same as Alternative A.	Same as Alternative A.
Access	Four roads (553, Gregory, Pole Creek and Spring Road) have been identified for the acquisition of non-exclusive easements.	Same as Alternative A.	Same as Alternative A.