

Vale District Bureau of Land Management
EA No. OR-030-08-004
Pedro Mountain Geographic Unit Grazing Permit Renewal Environmental
Assessment

Table of Contents

1	INTRODUCTION.....	1
1.1	PROPOSED ACTION	1
1.2	PURPOSE AND NEED.....	2
1.3	BACKGROUND.....	2
1.4	SCOPING AND RESPONSES TO ASSESSMENT / EVALUATION COMMENTS	2
1.5	CONFORMANCE WITH EXISTING RESOURCE MANAGEMENT PLAN, MANAGEMENT OBJECTIVES ..	2
	<i>Resource Condition Objectives:</i>	3
	<i>Upland Vegetation</i>	3
	<i>Allocations were identified as follows:</i>	3
2	DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES.....	4
2.1	ALTERNATIVE 1 – CONTINUE CURRENT MANAGEMENT (NO ACTION ALTERNATIVE).....	4
2.2	ALTERNATIVE 2 – REDUCE OR ELIMINATE LIVESTOCK GRAZING IN PASTURES THAT DO NOT MEET STANDARDS UNTIL STANDARDS ARE MET PRIOR TO INITIATING NEW GRAZING SYSTEMS	5
2.3	ALTERNATIVE 3 – BLM PROPOSED ACTION	6
2.4	ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL	12
2.5	DESIGN FEATURES COMMON TO ALL ALTERNATIVES	12
3	AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....	14
3.1	CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT.....	14
3.2	SUBJECTS EXCLUDED FROM THE ANALYSIS.....	16
3.3	VEGETATION.....	16
3.3.1	<i>Land Use Plan Management Objectives</i>	16
3.3.2	<i>Affected Environment</i>	16
3.3.3	<i>Alternative 1</i>	16
3.3.4	<i>Alternative 2</i>	17
3.3.5	<i>Alternative 3</i>	17
3.4	SOIL AND HYDROLOGIC RESOURCES AND RIPARIAN/WETLAND AREAS	17
3.4.1	<i>Land Use Plan Management Objectives and Activity Plan Objectives</i>	17
3.4.2	<i>Affected Environment</i>	18
3.4.3	<i>Alternative 1</i>	21
3.4.4	<i>Alternative 2</i>	21
3.4.5	<i>Alternative 3</i>	22
3.5	FISH AND AQUATIC HABITAT.....	25
3.5.1	<i>Land Use Plan Management Objectives and Activity Plan Objectives</i>	25
3.5.2	<i>Affected Environment</i>	26
3.5.3	<i>Alternative 1</i>	33
3.5.4	<i>Alternative 2</i>	34
3.5.5	<i>Alternative 3</i>	34
3.6	WILDLIFE / WILDLIFE HABITAT AND SPECIAL STATUS ANIMALS	35
3.6.1	<i>Land Use Plan Management Objectives and Activity Plan Objectives</i>	35
3.6.2	<i>Affected Environment</i>	35
3.6.3	<i>Alternative 1</i>	39
3.6.4	<i>Alternative 2</i>	40

3.6.5	<i>Alternative 3</i>	41
3.7	RANGELAND/GRAZING USE	43
3.7.1	<i>Land Use Plan Management Objectives</i>	43
3.7.2	<i>Affected Environment</i>	43
3.7.3	<i>Alternative 1</i>	46
3.7.4	<i>Alternative 2</i>	47
3.7.5	<i>Alternative 3</i>	47
3.1	NOXIOUS WEEDS	49
3.1.1	<i>Affected Environment</i>	49
3.1.2	<i>Alternative 1</i>	50
3.1.3	<i>Alternative 2</i>	50
3.1.4	<i>Alternative 3</i>	50
3.2	RECREATION, OFF-HIGHWAY VEHICLES (OHV), WILDERNESS AND VISUAL RESOURCES.....	50
3.2.1	<i>Land Use Plan Management Objectives and Activity Plan Objectives</i>	50
3.2.2	<i>Affected Environment</i>	50
3.2.3	<i>Alternative 1</i>	51
3.2.4	<i>Alternative 2</i>	51
3.2.5	<i>Alternative 3</i>	52
3.3	HUMAN USES AND VALUES (SOCIO-ECONOMIC IMPACTS).....	52
3.3.1	<i>Land Use Plan Management Objectives</i>	52
3.3.2	<i>Affected Environment</i>	52
3.3.3	<i>Alternative 1</i>	54
3.3.4	<i>Alternative 2</i>	54
3.3.5	<i>Alternative 3</i>	55
3.4	CULTURAL RESOURCES	55
3.4.1	<i>Land Use Plan Management Objectives</i>	55
3.4.2	<i>Affected Environment</i>	55
3.4.3	<i>Alternative 1</i>	58
3.4.4	<i>Alternative 2</i>	58
3.4.5	<i>Alternative 3</i>	58
4	CUMULATIVE EFFECTS ANALYSIS	59
5	MITIGATING MEASURES	60
6	IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES	60
7	MONITORING	61
8	PEOPLE, AGENCIES, AND NATIVE AMERICAN TRIBES CONSULTED	61
8.1	SUMMARY OF PUBLIC COMMENTS RECEIVED	62
9	AUTHORS	63
10	LITERATURE CITED	64
11	REFERENCES	66
12	SUPPORTING INFORMATION	68
12.1	APPENDICES.....	68
12.1.1	<i>Appendix 1 – Oregon and Washington BLM Standards and Guidelines (S&Gs)</i>	68
12.1.2	<i>Appendix 2 – Potential Species of Concern for Pedro Mountain GU</i>	70
12.1.3	<i>Appendix 3 – Acronyms</i>	71
12.2	MAPS	72
12.2.1	<i>Map 1</i>	72
12.2.2	<i>Map 2</i>	73
12.2.3	<i>Map 3</i>	74
12.2.4	<i>Map 4</i>	75

12.2.5	Map 5	76
12.2.6	Map 6	77
12.2.7	Map 7	78
12.2.8	Map 8	79
12.2.9	Map 9	80
12.2.10	Map 10	81
12.2.1	Map 11	82
12.2.1	Map 12	83
12.2.2	Map 13	84
12.2.3	Map 14	85

1 Introduction

1.1 Proposed Action

The Bureau of Land Management (BLM) proposes to renew 10-year grazing permits for livestock producers in 10 allotments located in the Baker Resource Area (BRA), Vale District BLM and take appropriate action pursuant to 43CFR 4180.2(c). The allotments are located in Baker County, southeast of Baker City, in the Rye valley area. These allotments are within the Pedro Mountain Geographic Unit (GU), which includes 17 grazing allotments and covers about 23,969 acres of public land as described in the Baker Resource Management Plan (USDI 1989). See Map 1 and 2 in this document for locations of the Pedro Mountain GU and allotments.

Terms and conditions for each grazing permit will be developed to conform with the Standards for Rangeland Health and Guidelines for Livestock Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington, or S&Gs (USDI 1997), the Baker Resource Management Plan or RMP management objectives, and the decisions resulting from this Environmental Assessment (EA). Refer to Appendix 1 for S&G descriptions.

Evaluations of each allotment, based on 2006 field inspections and other available information, were completed in 2007 to determine whether rangeland health standards were being met. These evaluations are available in the Baker Field Office. Determinations were made that seven allotments met all standards and guidelines, and these seven allotments were addressed in Determinations of NEPA Adequacy (DNAs) OR-030-07-007 and OR-030-08-004. The remaining 10 allotments which did not meet all standards and guidelines are addressed in this EA. See Table 1 for results.

Table 1. Summary of Standards not met due to current livestock grazing-

Evaluation and Determinations-Summary Table for Pedro Mountain Geographic Unit: Standards that are not being met due to current livestock grazing are labeled with an asterisk (*) and highlighted					
Allotment Number - Pasture Name	Standard 1- watershed function, uplands	Standard 2- watershed function, riparian	Standard 3- ecological processes	Standard 4- water quality	Standard 5- native, T&E, or locally important species
01072-Summit Spring	Met	Not Met*	Met	Met	Met
01037-Rye Valley East Pasture	Not Met *	Not Met *	Not Met *	Met	Not Met *
West Pasture	Met	Not Met *	Not Met	Not Met *	Not Met
01024-Upper Shirttail	Met	Not Met *	Met	Not Met *	Met
01020-Dixie Creek	Met	Not Met *	Met	Not Met*	Met
01022-Bowman Flat	Met	Not Met *	Not Met *	Met	Met
01023-Rattlesnake Gulch	Met	Not Met *	Met	Not Met *	Met
01032-French Creek	Not Met *	Not Met *	Not Met *	Not Met *	Not Met *
01030-Hollowfield Canyon	Met	Not Met *	Met	Met	Met
01026-North Dixie Cr. Lower Pasture	Met	Met	Met	Not Met *	Met
Upper Pasture	Met	Not Met *	Met	Not Met *	Met
01027-Lost Basin	Met	Not Met *	Met	Not Met *	Not Met *

1.2 Purpose and Need

The purpose of the action is to modify current livestock grazing practices on these allotments by adjusting timing and levels of livestock use so that significant progress can be made toward meeting the rangeland health standards. The need for this action is to achieve rangeland health standards. Currently rangeland health standards are not being met, as described in the existing environment below.

1.3 Background

In accordance with public land grazing regulations (Code of Federal Regulations [CFR] 43 CFR 4130.2), grazing permits authorize use on the public lands and other BLM-administered lands that are designated in land use plans as available for livestock grazing. Permits specify the grazing preference, including active and suspended use. Public land grazing permits also specify terms and conditions. The term of a grazing permit authorizing livestock grazing on the public lands is 10 years, unless exceptions apply.

“Fine-scale” assessments and evaluations were conducted at the pasture level. (Evaluations may be viewed on the Baker BLM website). “Mid-scale” assessments occur at the geographic unit area (GU) scale. A prioritization schedule for initiation of assessments of grazing authorizations within geographic units of the BRA was established in the Planning Update of February 2000. In following this schedule, permits were reviewed in the Pedro Mountain GU as described in the proposed action.

1.4 Scoping and Responses to Assessment / Evaluation Comments

The BLM first established proposed priorities for GU evaluations and for preparations of Coordinated Activity plans in the Baker RMP (1989). These plans would have addressed all resource issues in one plan. The Planning Update of February 2000 refined this direction to focus on the Healthy Rangelands initiative. The Update established the schedule for evaluation of the GUs using the rangeland standards and guidelines process.

The permittees for the Pedro Mountain allotments were informed about the field work being done in their allotments in 2006 and had the opportunity to be involved, which included rangeland utilization and trend monitoring, Proper Functioning Condition (PFC) assessments, and rangeland health assessments. The monitoring and assessments were done by multiple members of BLM’s staff over many different trips to the allotments. The permittees did not participate in these data-gathering efforts.

Letters notifying the public, newspapers, permittees, other agencies, and tribal representatives regarding the process and the upcoming public meeting, were sent out in early November of 2007. The BLM offered to meet individually with the tribes involved. A public meeting was held on November 13, 2007 to provide an overview of the process, distribute the Evaluation and Determinations documents and to answer questions. BLM accepted comments on the Evaluation and Determinations document at the public meeting (and 30 days subsequent to it) and at individual meetings with the permittees in 2007 and 2008. Comments were received about some of the riparian zones, whether they were truly significant enough to be called riparian, and about the fencing and grazing date changes being recommended. No written comments or proposals were provided to BLM; therefore no permittee proposals are being analyzed as an alternative.

1.5 Conformance with Existing Resource Management Plan, Management Objectives

Alternative 2 and Alternative 3 conform with the Baker RMP. Alternative 1 does not conform with the Baker RMP because it does not meet the resource condition objectives.

The following resource condition objectives, allocations, and management actions for Pedro Mountain GU were identified in the Baker RMP and guide this document (USDI 1989). This area contains 23,969 acres of public land.

Resource Condition Objectives:

Upland Vegetation

Manage upland grass-shrub vegetation to achieve a mid-seral plant community.

Improve habitat quality for deer, elk, grouse, turkey.

Riparian Vegetation

Enhance the riparian habitat along Dixie Creek and tributary streams by stabilizing the stream banks and by increasing the vegetation structure.

Wildlife and Fisheries Habitat

Meet forage requirements for big game as recommended by ODFW.

Improve habitat for fisheries.

Maintain/enhance the fishery habitat for trout on Dixie Creek.

Allocations were identified as follows:

Upland Vegetation

Restrict livestock grazing through seasons of use, utilization levels, and livestock numbers and distribution.

Restrict livestock grazing for 3-5 growing seasons on all range rehabilitation projects.

Riparian Vegetation

Restrict livestock use through seasons of use, utilization levels and livestock numbers.

Exclude livestock grazing along identified stream segments, bogs and spring overflows where use is incompatible with riparian management objectives.

Wildlife and Fisheries Habitat

Allow turkey transplants on Pedro Mountain.

Allow Columbian sharp-tailed grouse transplants in suitable habitat in Mormon Basin.

Develop grazing systems that enhance fishery habitat.

Restrict livestock use through seasons of use, utilization levels and livestock numbers.

Restrict development of additional roads.

Management Actions were identified as follows:

Upland Vegetation

Continue to restrict livestock numbers and seasons of use through grazing management systems and allotment management plans.

Monitor and evaluate grazing systems and adjust the systems and stocking levels as appropriate to maintain the upland vegetation objective.

Defer livestock grazing for 3-5 growing seasons on all range rehabilitation project areas.

Riparian Vegetation

Construct exclosure fences along Dixie Creek and tributary streams and around selected bogs and springs.

Rip-rap the banks of identified stream segments.

Plant shrubs in current riparian enclosures.

Conduct riparian inventories on 3.0 miles of stream in this geographic unit. 1.2 miles of existing riparian habitat on Dixie Creek will be improved.

Establish monitoring studies on riparian vegetation in Dixie Creek.

Wildlife and Fisheries Habitat

Provide suitable habitat for transplanting turkey and Columbian sharp-tailed grouse.

Inventory 5.2 miles of fishery habitat.

Use prescribed burning to create habitat diversity.

Plant/seed deer winter range.

Monitor fishery habitat condition and trend.

2 Description of the Proposed Action and Alternatives

Alternative actions were formulated to make significant progress towards meeting management objectives and S&Gs. Three alternatives analyzed include: (1) the no action alternative, (2) the reduce or eliminate livestock in pastures that do not meet Standards alternative, and (3) the BLM proposed livestock management actions and projects alternative.

2.1 Alternative 1 – Continue Current Management (No Action Alternative)

The terms and conditions of grazing use would remain unchanged. The Animal Unit Months (AUMs) and season-of-use would remain at the current active use for each permittee. This would be as follows:

Table 2. Current grazing use for Pedro Mountain GU allotments.

Allotment	AUMs Active	AUMs Private	% Federal Range	Period of Use Under AMP or Grazing Plan
Summit Spring #1072	358	0	100%	4/20-6/15, 10/5-11/30
Rye Valley #1037	263	11	96%	4/16-5/25, 10/24-11/30
Upper Shirttail Cr. #1024	111	30	79%	6/1-6/30, 10/1-11/1
Dixie Creek #1020	404	115	78%	6/1-6/30, 10/1-11/1
Bowman Flat #1022	65	18	78%	NA
Rattlesnake Gulch #1023	92	61	60%	6/1-6/30, 10/1-11/1
French Creek* #1032	143	183	44%	NA
Hollowfield Canyon #1030	42	50	46%	NA
North Dixie Creek #1026	193	300	39%	6/1-6/30, 10/1-11/1
Lost Basin* #1027	281	1360	17%	NA

Alternative 1 would identify the consequences of continuing to authorize livestock grazing in the identified allotments and making no changes to terms and conditions. Details of current management are found in the affected environment.

2.2 Alternative 2 – Reduce or Eliminate Livestock Grazing in Pastures that do not meet Standards until Standards are met prior to Initiating New Grazing Systems

If this alternative is selected, the amount of livestock use and periods of use would be as shown in Table 3 until rangeland health standards are met, then the livestock use would be as in Alternative 3 thereafter. The same projects would be implemented as in Alternative 3 but probably at a slower rate because of more time being available for completing projects prior to reinstating livestock grazing.

Table 3. Reduced grazing use for Pedro Mountain allotments.

Allotment	AUMs Active	AUMs Private	AUMs Total	% Federal Range	Description of Use Allowed
Summit Spring #1072	0	0	0	100%	Rest
Rye Valley #1037	0	11	0	96%	Rest
Upper Shirttail Cr. #1024	0	30	30	79%	Used during moves between Baldy Mountain and Fur Mountain private land
Dixie Creek #1020	0	115	115	78%	Used moving on or off Pedro Mountain
Bowman Flat #1022	0	18	0	78%	Rest
Rattlesnake Gulch #1023	0	48	48	60%	Used moving on or off Dixie Creek and Pedro Mountain
French Creek #1032	0	183	183	44%	Used moving on and off Lost Basin
Hollowfield Canyon #1030	0	50	50	46%	Used moving on and off private land
North Dixie Creek #1026	0	300	300	39%	Used moving on and off Pedro Mountain
Lost Basin #1027	281	Not specified	281	17%	No period of use specified due to large amount of private

Explanation of above table

- Alternative 2 consists of only the number of AUMs available from private land (previously authorized as exchange-of-use) The carrying capacity of the allotment would be calculated as zero AUMs provided by public land.
- Allotments with less than 20 AUMs exchange-of-use are shown as zero AUMs under Alternative 2. Authorizing exchange-of-use in these allotments would make little sense with so few AUMs, except for possibly trailing through (300 cows would use 20 AUMs in only two days). It is logistically possible that they can be left out of the grazing rotation during the years of rest.

Exchange-of-use/ private land issues

The grazing permittees in the Pedro Mountain GU EA have varying amounts of intermingled unfenced private land within their allotments. The estimated grazing capacities of these private lands are added to the estimated grazing capacity of the public lands to determine the amount of livestock use that can be allowed. In some cases, the private lands make up high percentages of the total amount of livestock use. The private land use is authorized as either exchange-of-use or as percent federal range, so that there is no charge for grazing use that takes place on the private land. Either way, the permittee agrees to confine his livestock to the number, kind, periods of use, and areas of use authorized by BLM. And BLM recognizes the private landowner's share of the land base in these allotments. In the allotments with significant

percentages of private land, BLM’s decision making involves a high degree of coordination, cooperation, and consultation with the permittees.

This alternative would provide a few years of reduced livestock use, with the amount of use limited to the number of AUMs available from private land only. This temporary change in grazing would result in 1,683 fewer AUMs on public lands per year being available for cattle grazing during this period. Approximately 70% fewer AUMs would be used in the nine allotments subject to reductions, with the stocking rates being based on private land carrying capacity only. The Lost Basin Allotment, which is 83% private land grazing, would be the only one with no reduction in AUMs of grazing, but this allotment’s aspen and riparian zones would receive added protection through the suggested projects and specified period of use for Upper Reagan Creek.

Determination of whether standards are met would be on an allotment-by-allotment basis, and it is possible that one allotment would be determined as making significant progress after only one year, while another allotment would take ten years or more to make significant progress. Such determinations would be made by the BLM field manager (with input from a BLM interdisciplinary team) using all available information, especially indicators of upward trend. Riparian trend would be determined from key area photopoints, field observations, or multiple indicator monitoring (MIM). If a riparian enclosure is constructed, the protected stretch of stream would not require trend data to prove that significant progress is being made. The BLM rangeland monitoring policy requires a 5 year cycle for evaluation of I Category allotments (USDI 1985). The next scheduled evaluation of these allotments would be in 2011, at which time all would be reviewed for progress in achieving range health standards, but reviews can take place sooner if sufficient information is available.

2.3 Alternative 3 – BLM Proposed Action

The proposed action would entail construction of the following projects (see Maps 3-8):

Table 4. Proposed projects for Alternative 3.

Allotment	Project Name	Quantity	Construction /Funding
Dixie Creek/Pedro Mountain boundary	Pedro Deer Creek Gap Fence	0.7 mile	Permittee construction BLM materials
Rattlesnake Gulch/Dixie Creek boundary	Rattlesnake Gulch Fence	2.0 miles	Permittee construction and materials
Bowman Flat	Poor’s Creek Juniper Falling	2 acres	BLM
French Creek	French Creek Fence	2.0 miles	Permittee construction and materials
French Creek	French Creek Cattleguard	1	BLM
Hollowfield Canyon	Hollowfield Juniper Falling	1 acre	BLM
North Dixie	Lower North Dixie Fence	1.0 mile	Permittee construction and materials
North Dixie	North Dixie Enclosure	1.0 mile	Permittee construction BLM materials
Lost Basin	Lost Basin Juniper Falling	10 acres	BLM
Lost Basin	Lost Basin Spring Fences	0.4 mile	BLM

Table 5. Proposed grazing use for Alternative 3, the amount of livestock use and periods of use would be as follows:

Allotment	AUMs Active	AUMs Private	AUMs Total	Proposed Period of Use on Ten-Year Permit
Summit Spring #1072	358	0	358	4/30-6/23, 10/5-11/30 Alternate years
Rye Valley #1037				
East Pasture	215	9	226	4/23-5/31, 11/1-12/9 in East Pasture, alternate years.
West Pasture	48	2	48	6/1-6/30, 10/1-10/30 in West Pasture, alternate years
Upper Shirttail Cr. #1024	111	30	141	6/1-6/30, 10/1-10/31 Alternate years

Dixie Creek #1020	343	115	458	4/22-6/30 (Lower Pasture 4/22-5/31 and Upper Pasture 6/1-6/30), both pastures 9/28-10/31 in alternate years
Bowman Flat #1022	65	18	83	9/16-10/15, 6/1-6/30 Alternate years
Rattlesnake Gulch #1023	55	48	103	6/1-6/30, 10/1-10/31 Alternate years
French Creek* #1032	143	183	326	If a pasture fence is built, 5/10-6/15 and 10/5-11/10 each year for BLM on north side of line and no restriction for private/minimal BLM on south side of line.
Hollowfield Canyon #1030	42	50	92	9/16-11/30 window, but no more than six weeks within the given time frame
North Dixie Creek #1026	193	300	493	6/1-6/30, 9/28-12/16, but restricted to two weeks spring and fall each year, or four weeks in either spring or fall, until new fences are completed
Lost Basin* #1027	281	1360	*	No period of use specified except for Upper Reagan Creek riparian pasture to be used 1 month within 6/1-7/10 window

All actions are for the purpose of making significant progress toward achieving rangeland health standards through adjusting periods of use, AUMs of use, or utilization levels. The periods of grazing use are chosen to restrict grazing to mostly spring and fall; avoiding hot-season use which negatively affects riparian zones. These changes would be expected to bring about desirable changes in vegetation or streambank characteristics because it will eliminate hot season use of key species, thus allowing for regrowth after spring grazing and allow for seed maturity prior to fall grazing.

Many allotments would have end-of-growing season utilization targets, as specified in Design Feature number 13(f), set in the annual turnout letters. There would be a process of BLM setting trial stubble heights (or browse utilization measures), monitoring to determine results (especially on streambanks), and then adjusting the target utilization to a standard that must be followed or else a rest period is imposed to mitigate for overutilization.

There would also be within-season utilization triggers set in some allotments for when to move cattle, which may result in cattle being moved out of an allotment sooner than scheduled. They would either be moved to the next pasture/allotment or home. These would also be specified in the turnout letters. The end-of-growing season targets would be finalized by the start of the 2011 grazing year in at least five allotments and by the start of the 2012 grazing year in the remaining allotments. This will allow for proper evaluation of utilization targets. Establishment of utilization targets will be done after long term monitoring sites are observed for 1 season to validate appropriate levels. The within-season utilization triggers would be implemented and followed starting the first year, subject to adjustment in following years based on observed results. Proposed actions specific to each allotment are specified below by allotment.

Details of changes by allotment are as follows:

Summit Spring Allotment #1072

1. Change dates on permit: was 10/5-11/30 (spring use inadvertently left off the ten-year permit), change to 4/30-6/23, 10/5-11/30, still alternating between spring use two years in a row and fall use two years in a row. The spring turnout would be changed from 4/20 to 4/30 because usually 4/20 is too early on this high-elevation allotment that contains a high percentage of north slopes.
2. Spring use would always end by June 23, even if turnout was late, in order to allow sufficient time for regrowth. Even if this is too late for much upland regrowth in most years, there would be riparian regrowth. In the past, sometimes use was allowed to extend a bit later than this to

compensate for late turnouts, and BLM's utilization monitoring indicates this has not worked well for keeping utilization levels moderate.

3. Fall use would end when riparian utilization triggers are reached, based on 30% utilization of riparian woody vegetation or herbaceous stubble heights to be determined specific to site. This would ensure that enough vegetation is left on streambanks to protect them during spring runoff.
4. Spring developments must all be maintained and fully functional before the 2010 turnout. Functional spring developments would help draw cattle away from the creeks where riparian watershed standards are not fully met.
5. Riparian stubble height targets or maximum allowable utilization would be specified in the annual turnout letter. Once targets are finalized, failure to meet end-of-season utilization targets for two consecutive years in Summit Spring Allotment would result in resting that allotment the third year.

Rye Valley Allotment #1037

1. Change dates on permit: was 10/20-11/28 (spring use inadvertently left off the ten-year permit), change to 4/23-5/31, 11/1-12/9 for East Pasture, 6/1-6/30 and 10/1-10/30 for West Pasture. The spring use would be changed from 4/16 to 4/23 because range readiness and soil moisture conditions are usually not reached by 4/16. The late fall use in the East Pasture would be scheduled to avoid growing season use every spring. In recent years, this pasture has been used every year in spring due to difficulty using it in fall. But the evaluation determined a need to go back to periodic fall use to improve range trend. Cattle are drawn to the private green hayfield during the fall instead of the steeper dry slopes of public lands. The likely scenario is that most years of scheduled fall use would be close to a rest treatment because cattle do not want to stay in this allotment in fall. The dates on the West Pasture are to allow it to be used for brief periods in spring or fall, consistent with alternating spring/fall use in the adjacent Clough Gulch Allotment, managing the West Pasture for riparian improvement.
2. Use in Rye Valley East Pasture would be deferred until November 1 – December 9 in one out of two years or two out of four.
3. Use in Rye Valley West Pasture would conform to riparian management objectives, and utilization triggers for moving livestock would be 30% utilization of riparian woody vegetation or herbaceous stubble heights to be determined specific to site.
4. Riparian stubble height endpoint targets or maximum allowable utilization would be specified in the annual turnout letter. Once targets are finalized, failure to meet end-of-season utilization targets for two consecutive years in either pasture of Rye Valley Allotment would result in resting that pasture the third year.
5. Specify 215 public land AUMs in Rye Valley East Pasture and 48 AUMs available in Rye Valley West Pasture. Previously, there were years when all 263 AUMs were used in East Pasture due to confusion about the allotment boundaries. This action would help prevent overuse of the East Pasture because it spreads the use over both pastures.

Upper Shirttail Allotment #1024

1. Permittees would fully maintain all spring developments and fences under their maintenance responsibility prior to turnout. Lack of maintenance of spring developments have contributed to heavy use of creek bottoms, and lack of maintenance of fences has been a problem in allowing unauthorized use.
2. Change dates on permit: was 5/1-10/13, change to 6/1-6/30, 10/1-10/31. This would simply verify what is already being done; long periods of summer use are already discontinued under the current plan because continuous summer use resulted in over use of the riparian species.

3. The key areas are currently on uplands in this allotment but if new key/critical areas are established on Ray Creek, riparian stubble height targets or maximum allowable utilization would be specified in the annual turnout letter. Key areas are established using the BLM monitoring policy (USDI 1985). Once targets are finalized, failure to meet key area end-of-season utilization targets for two consecutive years in Upper Shirttail Creek Allotment would result in limiting use in the third year only to the amount of exchange-of-use or private land AUMs.

Dixie Creek Allotment #1020

1. Change dates on permit: was 5/1-10/13, change to 4/22-6/30, 10/1-10/31 (alternating between spring use and fall use, not both in same year). This allotment consists now of two pastures, and the lower elevation pasture is suitable for earlier use, 4/22-5/31. To achieve riparian improvement in this pasture, early grazing followed by regrowth throughout the summer would leave the desired amount of streamside vegetation stubble height. The upper pasture would be regularly alternating between June use and October use.
2. Utilization triggers for moving livestock would be set using 30% utilization of riparian woody vegetation or herbaceous stubble heights to be determined specific to site, measured in Deer Creek riparian zone.
3. Build new gap fences (0.7 mile) to fully enclose the allotment to control livestock use. Reduce grazing preference from 404 AUMs to 343 AUMs based on steep slopes (over 50%) not being suitable for grazing without causing excessive use in riparian zones (Pinchak et al. 1991, Holechek 1988). Livestock congregate on riparian areas for shade and higher quality forage and try to avoid steep slopes.
4. Riparian stubble height targets or maximum allowable utilization would be specified in the annual turnout letter. Once targets are finalized, failure to meet end-of-season utilization targets for two consecutive years in either pasture of Dixie Creek Allotment would result in limiting use in that pasture in the third year only to the amount of exchange-of-use or private land AUMs.

Bowman Flat Allotment #1022

1. Change dates on permit: was 5/1-7/9, change to 9/16-10/15, 6/1-6/30, alternating between spring use and fall use, reducing time spent in the allotment each year (larger number of animals for shorter time). This would be to allow more time for riparian vegetation and upland vegetation to recover from grazing.
2. Cut and drop juniper into Poor's Creek riparian zone for riparian protection; project acreage equals two acres, spot treatment along half-mile of stream. Jack strawed juniper will block livestock access to the stream and provide woody debris. Jack strawing is a forestry technique that involves selective cutting and dropping of mature trees, which restricts livestock access.
3. 2007 was a year of total rest to jumpstart recovery; this action has already been taken. Trend plots will be read to assess progress toward objectives.
4. Riparian stubble height targets or maximum allowable utilization would be specified in the annual turnout letter. Once targets are finalized, failure to meet end-of-season utilization targets for two consecutive years in Bowman Flat Allotment would result in resting that allotment the third year.

Rattlesnake Gulch Allotment #1023

1. Change dates on permit: was 5/1-10/22, change to 6/1-6/30, 10/1-10/31 (alternating between spring use and fall use, not both in same year). This would verify the management that is already being followed.
2. Build new fence projects to separate this allotment from Dixie Creek Allotment. This will allow better control of livestock and facilitate implementation of site specific seasons of use

prescriptions. Until this is completed, the allotment would be managed with the same seasons of use as Dixie Creek Allotment, Upper Pasture.

3. Reduce grazing preference from 92 AUMs to 55 AUMs.
4. Reduce exchange-of-use from 61 AUMs to 48 AUMs.
5. The above reductions are based on steep slopes (over 50%) not being utilizable for grazing without causing excessive use in riparian zones.
6. Failure to meet key area end-of-season utilization targets for two consecutive years in Rattlesnake Gulch Allotment would result in limiting use in the third year only to the amount of exchange-of-use or private land AUMs. The key area is currently upland but is in close proximity to upper Rattlesnake Gulch riparian zone.

French Creek Allotment #1032

1. New fencing of two miles would be built by the permittee.
 - a. To separate a public land pasture from the mostly private land pasture. This will allow greater control of livestock on public lands and reduce use on public land. The public land pasture to be used for brief periods in spring and in fall each year, but primarily spring (5/10-6/15) in years when Summit Spring is used in fall, and primarily fall (10/5-11/10) in years when Summit Spring is used in spring. Utilization triggers for pasture moves would be based on 30% utilization of riparian woody vegetation or herbaceous stubble heights to be determined specific to site. This pasture fence would require a cattle guard.
 - b. Until such time as the new fence is completed, the seasons of use would be set at 4/16-6/30 for spring use and 10/5-12/20 for fall use.
2. Currently it is a "C" allotment, there are no restrictions on when it can be grazed, and some grazing occurs in all seasons. The proposed action would impose specified amounts of grazing use at specified seasons, in order to make significant progress towards achieving rangeland health standards.

Hollowfield Canyon #1030

1. Change dates on permit: was 6/22-8/21, change to outside parameters of 9/16-11/30, but no more than six weeks within this time frame. This means the permit would say 9/16 – 11/30. The bill would be six weeks sometime within this time frame.
2. Utilization triggers for moving cattle off in the fall would be stubble heights to be determined specific to site.
5. Cut and drop juniper into riparian zone for riparian protection; project acreage = one acre, spot treatment along 0.25 mile of stream. Jack strawed juniper will block livestock access to the stream and provide woody debris. Jack strawing is a forestry technique that involves selective cutting and dropping of mature trees, which restricts livestock access.
3. Riparian stubble height targets or maximum allowable utilization would be specified in the annual turnout letter. Once targets are finalized, failure to meet end-of-season utilization targets for two consecutive years in Hollowfield Canyon Allotment would result in limiting use in the third year only to the amount of exchange-of-use or private land AUMs.

North Dixie Creek Allotment #1026

1. Change dates on permit: was 6/1-11/30, change to 6/1-6/30, 9/28-12/16. Prior to construction of allotment division fence, the allotment would be limited to two weeks in June and two weeks in October each year (or four weeks in either June or October but not both) with utilization triggers for moving livestock set using 30% utilization of riparian woody vegetation or herbaceous stubble heights to be determined specific to site. After division fence and enclosure fence are completed, late fall use in upper pastures would be allowable, but prior to these fences these late fall AUMs would be in nonuse.

2. Build new division fence, one mile, in Lower Pasture, to separate the large block of public land from the private land. This fence would give the permittee the option of moving to the private land in the allotment when utilization targets are reached on the public land, instead of moving entirely off the allotment. Until this fence is completed, 20% of the grazing preference in the allotment would be kept in nonuse.
3. Permittee must rebuild or maintain all allotment boundary fences where they have maintenance responsibility.
4. Riparian enclosure would be constructed along one mile of upper North Dixie Creek, permittee to maintain.
5. Riparian stubble height targets or maximum allowable utilization would be specified in the annual turnout letter. Once targets are finalized, failure to meet end-of-season utilization targets for two consecutive years in North Dixie Creek Allotment would result in limiting use in the third year only to the amount of exchange-of-use or private land AUMs.

Lost Basin Allotment #1027

1. Upper Reagan Creek (mostly private land pasture) to be used 6/1 to 7/10, one month during this time frame; would allow riparian regrowth during summer.
2. Juniper piling and aspen jackstrawing at aspen grove; project acreage equals 10 acres. In this instance, jackstrawing is a forestry technique that involves selective cutting and dropping of mature aspen, which encourages aspen re-sprouting and restricts livestock access.
3. Existing spring developments on BLM ground: two spring sources would be fenced by fall of 2010 to protect spring sources and adjacent riparian areas.

Table 6. Summary comparison of BLM AUMs for each alternative.

Allotment	% Federal Range	Alternative 1		Alternative 2		Alternative 3	
		Alt. 1 BLM AUMs	Alt. 1 Period of Use	Alt. 2 BLM AUMs	Alt. 2 Period of Use	Alt. 3 BLM AUMs	Alt. 3 Period of Use
Summit Spring #1072	100%	358	4/20-6/15, 10/5-11/30	0 initially, then 358	Rest initially, then as in Alt. 3	358	4/30-6/23, 10/5-11/30
Rye Valley #1037	96%	263	4/16-5/25, 10/24-11/30	0 initially, then 263	Rest initially, then as in Alt. 3	263	4/23-5/31, 11/1-12/9, 6/1-6/30, 10/1-10/30
Upper Shirttail Cr. #1031	79%	111	6/1-6/30, 10/1-11/1	0 initially, then 111	6/1-6/7, 10/1-10/7 initially, then as in Alt.3	111	6/1-6/30, 10/1-10/30
Dixie Creek #1020	78%	404	6/1-6/30, 10/1-11/1	0 initially, then 343	6/1-6/9, 10/1-10/9 initially, then as in Alt. 3	343	4/22-5/31, 6/1-6/30, 9/28-10/31
Bowman Flat #1022	78%	65	5/10-7/9	0 initially, then 65	Rest initially, then as in Alt. 3	65	9/16-10/15, 6/1-6/30
Rattlesnake Gulch #1023	60%	92	6/1-6/30, 10/1-11/1	0 initially, then 55	6/1-6/9, 10/1-10/9	55	6/1-6/30, 10/1-

					initially, then as in Alt. 3		10/31
French Creek* #1032	44%	143	No restriction	0 initially, then 143	4/16-6/30, 10/5-12/20	143	5/10-6/15, 10/5- 11/10
Hollowfield Canyon #1030	46%	42	6/22-8/21	0 initially, then 42	10/1-10/31 initially, then as in Alt. 3	42	9/16- 11/30
North Dixie Creek #1026	39%	193	6/1-6/30, 10/1-11/1	0 initially, then 193	6/1-6/23, 10/1-10/23 initially, then as in Alt. 3	193	6/1-6/30, 9/28- 10/27, 11/1- 12/16
Lost Basin #1027	17%	281	No restriction	281	No restriction except for Upper Reagan Creek 6/1- 7/10	281	No restriction except for Upper Reagan Creek 6/1- 7/10

2.4 Alternatives Considered but Not Analyzed in Detail

No Grazing

This alternative would have assessed permanent removal of grazing from pastures where standards were not met. Since there is such a high percentage of private land in the Pedro Mountain GU, the only way this alternative would have been feasible would be to fence the public land see Map 2. It would have required at least 41 miles of fence and a cost (estimate) of at least \$273,420.00.

Total elimination of livestock grazing on these allotments would result in additional costs for the livestock operators. First, they would collectively need to spend approximately \$273,420 to construct 41 miles of fences to cut off livestock access to public lands from their private lands. Second, they would lose the forage from the BLM allotments and be forced to downsize their cattle operations or purchase alternative grazing elsewhere. Third, they would have increased difficulty in moving cattle from one piece of private land to another if they had no ability to trail cattle across intermingled BLM lands. In some cases, they would have an additional expense of loading and trucking cattle where previously they would drive them on horseback.

Due to projected costs described above, BLM eliminated this alternative from further consideration.

Permittee Proposal

Permittee proposals for alternatives were requested prior to the preparation of the EA. No permittee proposals for alternatives were received; therefore, none will be analyzed.

2.5 Design Features Common to All Alternatives

Design features are measures or standard operating procedures that are incorporated into all alternatives. Design features shown below are not a comprehensive list but address topics normally of concern to permittees, the tribes, interested public, and participating BLM staff.

1. Archaeological surveys would be completed prior to initiation of rangeland improvement projects.
2. BLM actions in response to discovery of archaeological resources, sensitive plants or animals, may include a variety of conservation measures to avoid or reduce effects associated with livestock grazing. Conservation measures may include (but are not limited to) avoidance, site stabilization, protective

exclosure construction, project relocation, redesign, or abandonment. Cultural site evaluation and development of conservation measures will be accomplished in consultation with the Oregon State Historic Preservation Office (SHPO) and Tribes. Plant and animal evaluations and conservation measures will be accomplished in consultation with ODFW and United States Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS) if appropriate.

3. If it is determined that properties potentially eligible for the National Register cannot be avoided by a proposed project, then BLM will identify and evaluate the resource in consultation with the Oregon SHPO and Tribes to: a) determine what makes the property potentially eligible or important; and b) determine what mitigation is appropriate. For archaeological properties that are determined potentially eligible for their information content, options for mitigation may include (but are not limited to) further documentation and data recovery (for example, retrieval, mapping, excavation). For properties which are determined to have traditional and/or religious importance to Tribes, appropriate mitigation would be determined in consultation with the Oregon SHPO and Tribes.

4. When ground-disturbing maintenance or reconstruction of an existing rangeland development project, such as a spring, waterhole or reservoir, is proposed, and the existing development was installed without prior cultural surveys, then cultural surveys would be completed. Priority would be placed on surveys at existing water developments. This would allow the BLM to identify sites and retrieve cultural resource information that would otherwise remain unknown. If eligible or potentially eligible archaeological sites with grazing impacts are identified during inventories for project maintenance or reconstruction, mitigation measures would be developed and implemented in consultation with Oregon SHPO and Tribes. Biological and botanical surveys will also be completed to assure protection of sensitive plants and animals consistent with BLM policy.

5. Cultural surveys for 15 previously unsurveyed existing rangeland spring development projects will be accomplished over the next two years in accordance with project maintenance schedule.

6. Existing rangeland management structures, such as spring developments and reservoirs, may be periodically maintained or reconstructed without further NEPA analysis provided that such activities occur within the original disturbance area. Any planned surface disturbance outside of an original rangeland project impact area will require additional cultural resource surveys before actions would be authorized.

7. During the 10 year term of the grazing permits, BLM will conduct cultural resource sampling inventories of un-surveyed perennial stream reaches and springs in the allotment(s). Sampling inventories may be conducted opportunistically during other cultural inventories.

8. Reports on the results of cultural resource monitoring and inventories will be prepared and provided to the Oregon SHPO and Tribes.

9. New fences will be installed with proper wire spacing requirements necessary to allow safe passage of pronghorn, mule deer, and elk. All fences will be installed with wire stays to reduce incidence of entanglement and death. All fences will be installed with smooth wire bottom strands to reduce incidence of big game injury.

10. Wildlife escape ramps (bird ladders) will be installed in all livestock water troughs to reduce incidence of small animal entrapment and drowning. Installation of escape ramps will be fully completed within five years after grazing decisions have been issued.

11. New livestock facilities (such as fence construction or development of water troughs) in sage-grouse nesting/brooding habitat will be avoided during the peak of breeding and nesting activities (March 1-June 30) and will be located at least 0.6 of a mile away from established lek sites in accordance with "Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Population and Habitat" (Hagen 2005).

12. Noxious weed inventory, treatment, and monitoring will continue for all alternatives.

13. The following conditions are added to all new grazing permits:

- a. Wildlife escape ramps must be installed and maintained in all water troughs.
- b. Modifications to the grazing permit may be implemented to protect cultural resources under the National Historic Preservation Act (NHPA).
- c. All range projects must be inspected and maintained prior to turnout of livestock. Failure to properly complete your assigned maintenance in a timely manner will be cause for denial of authorization to either place permitted livestock on the allotment or move into the next pasture of the grazing sequence. The permittee will also be required to maintain the proportionate share of range projects whether they graze livestock or take non-use.
- d. Use will be in accordance with the allotment management plan (AMP), current grazing system, or instructions issued as applicable.
- e. Permit is subject to modification as necessary to achieve compliance with the standards for rangeland health and guidelines for livestock management (43 CFR 4180).
- f. Unless otherwise stated, utilization monitoring standards allow livestock to graze up to 50% on upland grasses, 45% on riparian sedges/grasses, and 30% on riparian shrubs. Specific utilization targets will be stated in annual turnout letters.
- g. The permittee hereby agrees to allow authorized representatives of the BLM (43 CFR 4130.3-2) reasonable access across private and leased lands at any time for the purpose of inspection and official business.

14. Salting/mineral stations shall not be located on or within ¼ mile from cultural resources or riparian areas.

15. Actively seek funding through Clean Water and Watershed Restoration funding (CWWR) over the life of the grazing permit to fence all spring sources used for livestock watering facilities.

16. Make progress towards meeting all water quality parameters and standards that have a direct affect on fish habitat (temperature, sediment, dissolved oxygen, pH) in all streams within the analysis area. See mitigating Measures Section of the EA for other conservation actions not specifically addressed under these Design Features.

3 Affected Environment and Environmental Consequences

This section of the EA presents relevant resource components of the existing environment that will be analyzed in each alternative. The format of this section is consistent with resources analyzed in the Baker RMP (USDI 1989) to which this “fine scale” ecosystem-based management planning effort is tiered.

3.1 Critical Elements of the Human Environment

The following Council on Environmental Quality (CEQ) elements of the human environment are subject to requirements found in statute, regulation, or executive order and must be considered in all EAs and EISs. In Table 7, BLM shows which critical elements are present, which ones are not, and which ones will be fully analyzed in the EA.

Table 7. Critical elements analysis summary.

Element	Relevant Authority	BLM Manual	Do any of the alternatives affect this Element?
Air Quality	The Clean Air Act as amended (42 USC 7401 et seq.)	MS 7300	Not affected
Areas of Critical Environmental Concern	Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.)	MS 1617	No ACECs
Cultural Resources	National Historic Preservation Act as amended (16 USC 470)	MS 8100	Yes - Impacts to known cultural properties are discussed in the EA. SHPO and CTUIR consulted
Farm Lands (prime or unique)	Farmland Protection Policy Act (PL 97-98; 7 U.S.C.		No prime or unique farmlands are present

	4201 et seq.)		on public lands within the GU.
Floodplains	E.O. 11988, as amended, Floodplain Management, 5/24/77	MS 7260	Yes - Impacts to floodplains will be covered in the EA under wetland/riparian habitat
Native American Religious Concerns	American Indian Religious Freedom Act of 1978 (42 USC 1996)	MS 8100	No sacred sites have been identified or are known to be located within the Geographic Unit
Threatened or Endangered Species	Endangered Species Act of 1973 as amended (16 USC 1531)	MS 6840	Consultation under Section 7 of the Endangered Species Act was not necessary due to lack of federally listed species present
Wastes, Hazardous or Solid	Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended (42 USC 9615)	MS 9180 MS 9183	No known issues
Water Quality Drinking/Ground	Safe Drinking Water Act as amended (42 USC 300f et seq.) Clean Water Act of 1977 (33 USC 1251 et seq.)	MS 7240 MS 9184	Yes – Ground water is discussed in the EA
Wetlands/Riparian Zones	E.O. 11990, Protection of Wetlands, of May 24, 1977	MS 6740	Yes – Wetland and riparian area impacts will discussed in the EA.
Wild and Scenic Rivers	Wild and Scenic Rivers Act as amended (16 USC 1271)	MS 8014	Wild and Scenic Rivers are not present
Wilderness and Wilderness Study Areas , Wilderness Characteristics Inventories	Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.) Wilderness Act of 1964 (16 USC 1131 et seq.)	MS 8500	No Wilderness, wilderness study areas or areas containing wilderness characteristics are present in the GU.
Environmental Justice	E.O. 12898 of February 11, 1994		Minority populations and low income populations are not affected
Actions to Expedite Energy Related Projects	E.O. 13212 of May 18, 2001		Proposed action is not energy related nor will it affect production, transmission, or conservation of energy.

¹ The CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. Congress established CEQ within the Executive Office of the President as part of the National Environmental Policy Act of 1969 (NEPA). Additional responsibilities were provided by the Environmental Quality Improvement Act of 1970.

3.2 Subjects Excluded from the Analysis

Subject matter that will not be analyzed in this EA includes climate change, air resources, Areas of Critical Environmental Concern (ACEC), wilderness, wilderness study areas, wilderness characteristics, geology, minerals, special status plants, forest and woodlands, wild and scenic rivers, animal damage control, caves, hazardous materials, environmental justice, or actions to expedite energy related projects. There are no known paleontological localities in the allotments.

These topics are not subject to the analysis because of one or more of the following reasons: (1) the resource is not present within the analysis area, such as wild and scenic rivers (2) the alternatives considered would not be affected by BLM rangeland management authorizations, such as climate change or forestlands or (3) the potential impacts are not the result of BLM authorized actions, such as animal damage control.

3.3 Vegetation

3.3.1 Land Use Plan Management Objectives

The following vegetation objectives come from the Baker RMP (USDI 1989):

- *Manage upland grass-shrub vegetation to achieve a mid-seral stage plant community.*
- *Improve habitat quality for deer, elk, grouse, turkey.*
- *Riparian – Enhance the riparian habitat along Dixie Creek and tributary streams by stabilizing the stream banks and by increasing the vegetation structure.*

3.3.2 Affected Environment

Vegetation in the Pedro Mountain GU is predominately sagebrush (principally mountain big sage (*Artemisia tridentata vaseyana*) and basin big sage (*Artemisia tridentata tridentata*) and western juniper (*Juniper occidentalis*) communities with an understory of perennial grass species, primarily bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), Thurber's needlegrass (*Achnatherum thurberianum*), squirreltail (*Elymus elmoides*), basin wildrye (*Leymus cinereus*), and localized areas of cheatgrass (*Bromus tectorum*) and other annuals. Ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), mountain mahogany (*Cercocarpus ledifolius*), bitterbrush (*Purshia tridentata*), snowberry (*Symphoricarpos sp.*), and chokecherry (*Prunus virginiana*) are common at the highest elevations with an understory of blue wildrye (*Elymus glaucus*), mountain brome (*Bromus marginatus*), sedges (*Juncus sp.*), and needlegrasses (*Achnatherum sp.*). Rangeland health assessments completed in the area in 2006 suggest the upland plant communities are generally meeting standards (or deficiencies are due more to historic than to current livestock grazing). The allotments where ecological integrity standards of upland vegetation were not met (with current livestock grazing being a significant factor) were Bowman Flat, French Creek, and Rye Valley (East Pasture only). Riparian vegetation varies from dense shrubs and trees along some stretches (species such as willow (*Salix sp.*), aspen (*Populus tremuloides*), alder (*Alnus sp.*), and chokecherry) to primarily grasses, sedges (*Carex sp.*), and rushes in other places. Rangeland health standards for riparian condition, which includes current vegetation as well as other factors, were judged by PFC surveys in 2006, and were determined not met in most of these allotments.

3.3.3 Alternative 1

If no action is taken, observed downward range trends in Bowman Flat, Rye Valley and French Creek allotments would continue, with reduction in perennial bunchgrasses such as Idaho fescue and bluebunch wheatgrass. Riparian vegetation throughout the area would continue to be heavily grazed, suppressing vigor and recovery, and possibly being replaced by less desirable vegetation in the stream segments identified as in downward trend. The effects of this same degree and timing of grazing use would be slight (the most cattle-accessible areas have already been grazed for over a century), but if continued the cumulative effects could drop some vegetation communities into a lower ecological class. The vegetation objectives from the Baker RMP and the S&Gs would not be met.

3.3.4 Alternative 2

Grazing would be stopped until standards are met, resulting in 1,683 fewer AUMs per year being available for cattle grazing during this period. Approximately 70% fewer AUMs would be used in the nine allotments subject to reductions, with the stocking rates being based on private land carrying capacity only. The Lost Basin Allotment, which is 83% private land, would be the only one with no reduction in AUMs of grazing. The least amount of livestock grazing use would be present with this alternative (see Table 6). During the recovery period (however many years it would take to meet standards), most forage species would be lightly used or would receive rest from grazing. Species such as willow, sedge, rush, Idaho fescue, and bluebunch wheatgrass would increase in vigor and abundance. Utilization of vegetation along creeks would be lighter when measured at the end of each growing season because of utilization targets for ending grazing periods. It is likely that this alternative would meet the RMP objectives for vegetation and result in significant progress toward meeting rangeland health standards.

3.3.5 Alternative 3

Through the combination of adjusting AUM numbers in two allotments, adjusting periods of use, and using utilization measurements in riparian zones to modify periods of use, the same forage species mentioned above would be expected to increase in vigor and abundance. The amount of recovery would vary by allotment, with more recovery expected in allotments where the most changes are made in management. Riparian zone vegetation would respond most rapidly to the diminished use, with upland vegetation recovery being slower due to the drier sites. But shifting use periods away from the critical growing period in Rye Valley and Bowman Flat Allotments would allow for improvement in upland vegetation. Utilization of vegetation along creeks would be lighter when measured at the end of each growing season. Lighter utilization of riparian vegetation would allow improved vegetation composition and improved streambank protection. The cumulative effects of continuing grazing at the levels indicated would result in slower improvement than in Alternative 2, but improvement is still to be expected with the proposed changes to grazing. It is likely that this alternative would meet the RMP objectives for vegetation and result in significant progress toward meeting rangeland health standards.

3.4 Soil and Hydrologic Resources and Riparian/Wetland Areas

3.4.1 Land Use Plan Management Objectives and Activity Plan Objectives

Pedro Mountain GU management actions and objectives are as follows in the RMP (USDI 1989):

Resource Condition Objective

Enhance the riparian habitat along Dixie Creek and tributary streams by stabilizing the stream banks and by increasing the vegetation structure.

Allocation

Restrict livestock use through seasons of use, utilization levels and livestock numbers.

Exclude livestock grazing in identified stream segments, bogs and spring overflows where use is incompatible with riparian management objectives.

Management Action for Riparian

Construct enclosure fences along Dixie Creek and tributary streams and around selected bogs and springs.

Rip-rap the banks of identified stream segments.

Plant shrubs in current riparian enclosures.

Conduct riparian inventories on 3 miles of stream in this geographic unit. 1.2 miles of existing riparian habitat on Dixie Creek will be improved.

Establish monitoring studies on riparian vegetation in Dixie Creek.

3.4.2 Affected Environment

Soils

The following soils information is from the Baker County Soil Survey (NRCS 1997). The Pedro Mountain GU is comprised of over 40 different soil types. For the portion of the GU which is located in Malheur County, a soil survey has not been completed and as such the information presented below is for Baker County only. There are six main soil units which contain most of the different soil types and the majority of the acreage within the GU and they are described below.

The first major soil unit within the GU is the Virtue-Poall-Encina association, which is a soil unit associated with warm, dry, gently sloping to steep soils on terraces, fans, and hills. This soil association consists of deep and moderately deep, well drained silt loams, gravelly silt loams, and very fine sandy loams which formed in lacustrine sediments. The native vegetation is mainly bunchgrasses, forbs, and shrubs. Elevation is between 2200 and 4000 feet with average annual precipitation of 9 to 12 inches. The soils in this unit are used mainly for livestock grazing, while the Virtue and Encina soils have limited hay and pasture production. This unit also provides habitat for many types of wildlife and in the areas used for livestock grazing there are no major limitations (NRCS 1997).

The next major soil unit is the Ruckles-Ruclick-Lookout association, which is an association on warm, dry, gently sloping to very steep soils on hills. This soil association consists of shallow and moderately deep, well drained silt loams, very cobbly silt loams, and very stony clay loams that formed in colluvium derived from basalt. Native vegetation on this soil unit is mainly bunchgrasses and shrubs with an elevation range of 2000 to 3800 feet, and an average annual precipitation of 9 to 12 inches. The soils in this unit are mainly used for livestock grazing and this unit also provides habitat for many kinds of wildlife. The main limitations to livestock grazing in this area are the very cobbly or stony surface layer and the slope of the Ruckles and Ruclick soils (NRCS 1997).

The following three major soil units in the GU are in an area of cool, moist, gently sloping to very steep soils on hills and mountains. These three units are the Taterpa-Brownlee association, the Ateron-Roostercomb association, and the Lostbasin-Sinker-Chambeam association.

The Taterpa-Brownlee association consists of deep, well drained loams which formed in colluvium and residuum derived from granitic rocks. Elevation is between 3600 to 6200 feet with an average annual precipitation of 16 to 20 inches. Native vegetation is mainly bunchgrasses and shrubs. The soils in this unit are also mainly used for livestock grazing, with a few areas of the Brownlee soils used for hay or small grain. In the areas used for livestock grazing, the main limitation is slope of the Taterpa soils. Habitat for many types of wildlife is also provided by this soil unit (NRCS 1997).

The Ateron-Roostercomb association consists of shallow and moderately deep, well drained very stony loams and extremely gravelly clay loams that formed in colluvium derived from basalt and greenstone. Native vegetation is mainly bunchgrasses and shrubs, elevation ranges from 3600 to 5700 feet, and the average annual precipitation is 12 to 16 inches. The soils in this unit are also mainly used for livestock grazing while also providing habitat for many types of wildlife. The main limitations to livestock grazing in this area are the very stony or extremely gravelly surface layer and the slope (NRCS 1997).

The Lostbasin-Sinker-Chambeam association consists of moderately deep and deep, well drained very channery loams which formed in colluvium derived from schist and greywacke. Elevation is 3500 to 5300 feet, average annual precipitation is 12 to 16 inches, and the native vegetation is mainly bunchgrasses and shrubs. The soils in this unit are mainly used for livestock grazing while also providing habitat for many types of wildlife, and the main limitations to livestock grazing are the slope (NRCS 1997).

The final main soil unit within the GU is the Dogtown-Kilmerque-Tolo association which is in an area of cool, moist, gently sloping to very steep soils on mountains. This soil association is comprised of moderately deep and deep, well drained gravelly loams, loams, very stony loams, and silt loams which formed in colluvium and residuum derived from granitic rocks and were influenced by volcanic ash in the surface layer. The native vegetation is mainly mixed conifer stands with an elevation of 3800 to 6200 feet and an average annual precipitation of 17 to 35 inches. The soils in this unit are used mainly for timber production, livestock grazing, and watershed while also providing habitat for many kinds of wildlife (NRCS 1997).

Hydrology and Riparian

According to BLM Geographic Information System (GIS) analysis, there are approximately 67 miles of perennial streams and over 230 miles of intermittent streams within the Pedro Mountain GU. BLM conducted PFC evaluations on almost 48 miles (see Table 8 and Maps 9 – 14) of perennial and intermittent streams on BLM managed lands. The BLM (USDI 1998) presents the concept of physical function of riparian areas, referred to as PFC, as a minimal threshold for managing water quality, fish and wildlife habitat, aesthetics and livestock forage. PFC is a qualitative assessment that considers hydrology, vegetation, and soil/landform attributes and rates riparian function as:

- Proper Functioning Condition: *Riparian-wetland areas are properly functioning when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality, filter sediment, capture bedload, and aid in floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity.*
- Functional - At Risk: *Riparian-wetland areas that are in functional condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation.* Stream reaches determined to be Functional at Risk are further assessed for Trend – upward, downward, or not apparent.
- Non-Functioning: *Riparian-wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows, and thus are not reducing erosion, improving water quality, etc.*

PFC does not necessarily equate to potential natural community, advanced ecological status or desired future condition. Rather, PFC demonstrates the level of resilience required for a system to function and allow for maintenance and recovery of desired values such as water quality and fish habitat. In some areas, streams which have a rating of PFC may be identified for restoration activities because of the relative low cost associated with a high probability of successfully achieving a potential natural community.

Streams were rated as Proper Functioning Condition (PFC), Functioning at Risk with an Upward Trend (FARU), Functioning at Risk with a Downward Trend (FARD), Functioning at Risk with No Apparent Trend (FARN), or Non-functional (NF). Approximately half of the streams within the GU were rated as PFC or FARU, with the other half rated as FARD, FARN, or NF. Approximately 16 percent of the streams surveyed were rated as FARD or NF. The results of the BLM PFC surveys are presented in Table 8. PFC surveys are tied to Standard 2, which was not met in many of the allotments within the GU. The BLM used rating of PFC on FARU as meeting standard 2 and ratings of FARD, FARN and/or NF as not meeting Standard 2.

Table 8. BLM Stream miles by PFC rating.

Rating	Stream Miles	Percentage of BLM Stream miles surveyed
PFC	17.2	35.9%
FARU	7.4	15.4%
FARD	7.5	15.7%
FARN	15.5	32.4%
NF	0.3	0.6%

Total	47.9	100%
-------	------	------

Some of the problems noted during the PFC surveys related to livestock grazing included bank trampling, bank erosion, lack of woody species in the riparian areas, decreased vigor of riparian vegetation, headcutting of the stream channel, and high utilization of riparian vegetation by livestock.

Waters in Oregon that do not attain State standards are considered “water quality limited” and are included on Oregon’s 303(d) List of Water Quality Limited Waterbodies (e.g., 303(d) list). The most current 303(d) list for Oregon which was approved by the Environmental Protection Agency (EPA) is the 2004/06 list (DEQ, 2006). Within the GU, the North Fork Dixie Creek and South Fork Dixie Creek are on the 303(d) list for exceeding stream temperature standards (7 day maximum of 68°F). In addition, main Dixie Creek which both the North Fork and South Fork flow into is also on the 303(d) list for exceeding stream temperature standards. Although main Dixie Creek is outside of the GU, streams within the GU contribute to its water quality. Standard 4- Water Quality relates to water quality within the different allotments. For the 10 allotments analyzed in this EA, seven are not meeting Standard 4 due to livestock grazing. Standards 1, 2, and 3 contribute to attaining Standard 4 (BLM, 1997). Nine allotments do not meet Standard 2. Two allotments do not meet Standard 1 and three allotments do not meet Standard 3.

The BLM collected stream temperature and water quality data in the GU between 2000 and 2004. The stream temperature information is summarized in Table 9.

Table 9. BLM Stream Temperature Data.

Stream		2000	2001	2002	2003	2004
North Fork Dixie Creek	7-day maximum	76.2 ⁰ F	80.2 ⁰ F	76.5 ⁰ F	88.1 ⁰ F	
	Maximum reading	77.9 ⁰ F	84.4 ⁰ F	78.1 ⁰ F	90.6 ⁰ F	
South Fork Dixie Creek #1	7-day maximum	67.1 ⁰ F	66.6 ⁰ F	67.7 ⁰ F	67.9 ⁰ F	
	Maximum reading	68.8 ⁰ F	69.0 ⁰ F	69.7 ⁰ F	70.5 ⁰ F	
South Fork Dixie Creek #2	7-day maximum	71.5 ⁰ F	67.3 ⁰ F	69.4 ⁰ F	67.4 ⁰ F	
	Maximum reading	73.8 ⁰ F	70.4 ⁰ F	71.7 ⁰ F	69.1 ⁰ F	
Dixie Creek #1 ¹	7-day maximum	79.0 ⁰ F	78.4 ⁰ F	82.0 ⁰ F	87.4 ⁰ F	90.0 ⁰ F
	Maximum reading	80.2 ⁰ F	82.2 ⁰ F	84.3 ⁰ F	89.7 ⁰ F	94.6 ⁰ F
Dixie Creek #2 ¹	7-day maximum			82.6 ⁰ F	86.6 ⁰ F	
	Maximum reading			85.9 ⁰ F	89.7 ⁰ F	

¹ Dixie Creek is outside of the GU but many of the streams and uplands within the GU influence the stream temperature and water quality of Dixie Creek.

Water quality has been monitored in Dixie Creek, North Fork Dixie Creek, and South Fork Dixie Creek between 2000 and 2005. In addition to the temperature data collected on these streams (which is displayed above), other water quality parameters measured include pH, dissolved oxygen (DO), turbidity, conductivity, e. coli, alkalinity, phosphates, nitrates, and nitrites. Stream flow has also been taken on occasion at the various temperature and water quality sites. Water quality is tied to Standards 2 and 4 which were not met within many of the allotments in this GU.

The water quality parameters (other than e. coli and temperatures shown in Table 9) measured by the BLM do not show any areas where water quality exceeds state standards. In 2003 and 2004, BLM received funding to do water quality testing in the Burnt and Powder subbasins. In 2003, Dixie Creek, North Fork Dixie Creek, and South Fork Dixie Creek were sampled four times during the year with water

samples sent to a laboratory in Boise, ID. These samples indicate that all three streams sampled *may* exceed e. coli standards, with the North Fork Dixie Creek most likely to exceed state standards based on the 2003 data, however not enough samples were taken during the required time period to meet Department of Environmental Quality (DEQ) protocols for listing on the 303(d) list. The data collected by the BLM in 2003 and 2004 suggests that further monitoring of e. coli levels in the streams within the GU may be needed to determine if streams are exceeding state water quality standards. The BLM water quality data is available at the Baker City, OR office upon request.

3.4.3 Alternative 1

Soil conditions would generally remain the same if this alternative were selected, with a continued chance of soil erosion due to the friable, granitic sandy nature of some of the soil types found in the GU. Some of the problems noted during the PFC surveys on certain streams related to livestock grazing including bank trampling, bank erosion, and headcutting of the stream channel, would continue due to high utilization of riparian vegetation by livestock.

While some improvements have been made in the last 10 or more years based on changes to grazing use in the Pedro Mountain GU, additional progress needs to occur. This is especially true related to the riparian areas in the GU. Approximately 51% of the riparian areas are either functioning at PFC or FARU (see Table 8) which means that almost half of the riparian areas in the GU are not showing an upward trend. Approximately 32% of the riparian areas were rated as FARN, which means that trend was not apparent when the survey was done. These areas could be experiencing a slight upward or downward trend (or static) that was not evident to the surveyors. Continuation of this alternative may show that some of these areas are truly on an upward trend due to the changes that have occurred, however more time would be needed to show if this is the case, and there are still approximately 16% of the riparian areas which are showing a downward trend or are non-functioning which this alternative would not help. Therefore, while this alternative would allow for some improvement of individual stream/riparian areas, other impacted areas would not be expected to make significant progress in achieving Standards 2 and 4.

3.4.4 Alternative 2

The implementation of Alternative 2 would improve watershed cover in the short term and potentially long term, thereby reducing the risk of unacceptable soil erosion. On the other hand, some temporary surface/soil disturbance would occur during construction of the proposed projects but this disturbance would not be significant.

If this alternative is selected, grazing would be based on the private land carrying capacity only until rangeland health standards are met (a reduction of 1683 AUMs/year), then Alternative 3 would be implemented. Since the majority of the rangeland health standards not being met are related to riparian areas, grazing would be eliminated or reduced on public lands until these areas started showing an upward trend or met Standards 2 and 4. Some allotments (Summit Spring, Rye Valley, and Bowman Flat) would not have any use until standards were met or the riparian areas started to show an upward trend and were making significant progress to meeting standards. All of the other allotments, except for Lost Basin, would have limited use based on the private land carrying capacity. This use would be related mainly to moving livestock between other allotments and as such would result in light use which would allow for increased growth and establishment of riparian vegetation. This in turn would encourage riparian restoration which would lead to progress being made to meet rangeland health Standards 2 and 4.

This alternative would most likely allow some allotments to return to grazing on public lands sooner than others based on current conditions. For example, North Dixie Creek allotment is not meeting Standard 2 (watershed function/riparian) or Standard 4 (water quality). However, only one segment of stream in the allotment is rated as FARN, while all other segments are at FARU or PFC. This Alternative and Alternative 3 propose to build a riparian enclosure along the segment rated as FARN. For this allotment, the construction of the enclosure fence and exclusion of cattle from the impaired riparian area would be a relatively quick fix to meeting Standard 2 for this allotment. While Standard 4 may still not be met, this

is also due to what is happening upstream as well as on private land. If the riparian areas on the BLM managed land are all at PFC or FARU, and/or are excluded from livestock grazing, then it would be determined that while Standard 4 still may not be met, it is not due to current livestock grazing on BLM managed land. In this allotment, the BLM would authorize grazing because either all standards are being met, or those standards that are not being met are not attributable to current livestock grazing.

There are also allotments such as Dixie Creek where the majority of the riparian areas are rated as FARD and FARN, with one short segment each rated as FARU and NF. Removal of 404 AUMs from this allotment would occur with implementation of this alternative, however 115 AUMs would still be available based on private land carrying capacity. This allotment would take more time and effort to show an upward trend on all of the riparian areas and as such the return of BLM authorized grazing would take considerably longer in Dixie Creek as compared to North Dixie Creek. This alternative puts emphasis on the permittee as his 115 AUMs of grazing would still need to be carefully managed to prevent any degradation to the BLM riparian areas and this alternative also gives him an incentive to participate in restoration efforts to be able to resume grazing on his BLM permit as soon as possible. As illustrated by the above example, under this alternative the reduction of the BLM authorized grazing would vary in length of time by allotment until riparian areas were showing an upward trend. Some allotments may have a short time (one or two years, or less) before grazing is allowed while other allotments may need more time to show improvements (five years or more in some cases). After an allotment has met standards, or is showing significant progress, then Alternative 3 would be implemented, which implements changes in seasons of use, numbers of livestock, as well as reductions in a few allotments.

This alternative would improve watershed cover in the short term and potentially long term, thereby reducing the risk of unacceptable soil erosion. Some temporary surface/soil disturbance would occur during construction of the proposed projects but this disturbance would not be significant.

3.4.5 Alternative 3

This alternative would improve watershed and soils conditions over time but at a slower initial rate than Alternative 2.

If this alternative is selected, two allotments would receive a reduction in AUMs. All of the other allotments would have changes to the number of livestock, seasons of use, and utilization standards implemented.

As mentioned above, streams which were rated as FARD, FARN, and/or NF did not meet Standard 2 (watershed function/riparian). While the BLM did have some stream temperature information, most of the streams surveyed did not have any temperature data collected by the BLM. Standard 4 (water quality) used PFC surveys as a surrogate for water quality, along with riparian vegetation and downstream water quality data (including 303(d) listed streams). As such, where streams are rated as PFC and/or FARU on BLM managed land, while water quality may still not meet state standards, it is fair to say that current management is probably not the reason water quality standards are not met. For example, a stream which is rated as PFC may not be at potential or desired future condition; however the physical and vegetative characteristics of the stream and riparian habitat are present to improve water quality. PFC demonstrates the level of resilience required for a system to function and allow for maintenance and recovery of desired values such as water quality and fish habitat. So, where streams are at PFC or FARU, the riparian system is present to improve and protect water quality, as long as management or natural causes does not disrupt the system. The main water quality parameter of concern in the GU is stream temperature so riparian vegetation and stream width/depth ratios are of the main concern. Streams rated as PFC and/or FARU currently have vegetation established in sufficient quantity to provide adequate stream shade or riparian vegetation is increasing so that on the current trend the stream would provide adequate shade in the near future. Upstream management actions and management on private lands also affects water quality, and in some areas water quality may not be met because of actions outside of the project area and/or outside of management of BLM lands. As such, using PFC surveys and riparian vegetation as a surrogate for water quality (stream temperature) would ensure that BLM management is not contributing to water quality concerns.

If this alternative is selected, the Summit Spring allotment would not have a reduction of AUMs. Changes to this allotment which would influence Standards 2 and 4 include spring use which would start

on April 30 (instead of April 20) and no spring use after June 23 of each year, which would allow for riparian re-growth. In addition, riparian utilization targets would be established for fall grazing to ensure vegetation is left to protect the stream channel during spring runoff. Riparian monitoring sites and stubble heights would be established to ensure adequate riparian vegetation is left on site. This allotment had six stream reaches surveyed, three of which were rated at PFC (approximately 2.1 miles) and the other three reaches rated as FARN (approximately 1.5 miles). These changes to the management of this allotment would allow for an upward trend on the three FARN reaches as well as maintenance or improvement of the three PFC reaches.

Most of the stream reaches in the Rye Valley allotment were rated as FARN (approximately 2.2 miles), with one reach rated as FARD (approximately 0.05 miles) and three reaches rated as PFC (approximately 1.2 miles). Changes in this allotment include specifying a certain number of AUMs for each pasture, which was not specified in the past and led to overuse in the East Pasture. Requiring fall use in the East Pasture every other year so as to avoid use every spring growing season, and delaying spring turnout for range readiness and soil moisture concerns, which in turn would lead to increased riparian vegetation and less livestock use during the growing season in the riparian areas. Establishment of riparian utilization targets and stubble height targets would also help improve riparian vegetation and would lead to an improvement in the riparian areas, which is related to Standards 2 and 4 which were not met in this allotment.

The Upper Shirttail Allotment has approximately 0.4 miles of stream within the allotment which was rated as FARN. Changes would be made to the permit; however, these changes are what have been happening under the current plan (restricting long periods of summer use). In addition, project maintenance issues would be addressed by requiring maintenance prior to turnout. This would have the biggest positive impact as maintenance of water developments and fences would reduce grazing impact on the riparian areas.

Dixie Creek Allotment is one of two allotments with a proposed reduction in AUMs, from 404 AUMs to 343 AUMs. In addition to the reduction of AUMs, changes are proposed for season of use and building of new gap fences to eliminate unauthorized use. Both pastures in this allotment have stream segments which are not meeting Standards 2 and 4. This allotment contains approximately 0.7 miles of stream rated as PFC, 0.2 miles of stream rated as FARU, 3.9 miles of stream rates as FARN, 2.5 miles of stream rated as FARD, and 0.3 miles of stream rated as NF. The changes identified above would help improve riparian areas by allowing for more re-growth after grazing, reducing the number of AUMs in the allotments which would decrease grazing pressure on the riparian areas, and the new fences which would eliminate trespass from adjoining areas which also have an effect on riparian vegetation.

The Bowman Flat Allotment is a small allotment with approximately 0.7 miles of stream which is rated as FARN. Changes proposed for this allotment include alternating between spring use one year and fall use the next year, reducing the time allowed for grazing in the allotment which results in more time for riparian vegetation re-growth after grazing, which in turn would improve riparian habitat. Cutting juniper in the riparian area and leaving it on site is also planned, which would restrict the amount of area where livestock can access the riparian area and stream. This would also improve the riparian area by decreasing the number and places livestock can have direct impacts to the riparian vegetation and stream channel.

Rattlesnake Gulch Allotment is the other allotment in the project area which has a proposed reduction in AUMs, from 92 AUMs to 55 AUMs. In addition, this allotment has new fence projects planned to completely separate this allotment from Dixie Creek Allotment. Currently, there is approximately 1.0 miles of stream in this allotment rated at PFC, and approximately 0.7 miles of stream rated as FARD. The reductions proposed for this allotment in conjunction with the new fences and the fact that the majority of the stream miles in this allotment are already at PFC would allow for improvement of the impaired stream reach and lead to an increase in riparian vegetation and an improvement in riparian habitat.

The French Creek Allotment is a C category allotment and currently has no restrictions on when it can be grazed. This alternative would limit use to the spring and fall. In addition, a new fence and cattle guard would be built and installed which would separate most of the BLM managed land from the private land in the allotment. The implementation of seasons of use on this allotment would help improve riparian

habitat by restricting when grazing can occur on this allotment, which would allow for rest of the allotment and provide opportunity for riparian vegetation to grow back after grazing. Currently, there are approximately 0.3 miles of stream rated as PFC, 0.2 miles rated as FARU, 1.7 miles rated as FARN, and 1.1 miles rated as FARD. The new fence and cattleguard would also help improve riparian habitat by fencing off most of the BLM managed land and riparian areas and allowing brief periods of use either in the spring or fall, while allowing for re-growth and rest during the rest of the year without hindering use of the private land in the allotment.

The Hollowfield Canyon Allotment is a small allotment in this GU which has less than 50% of the land managed by the BLM. Within this allotment, approximately 0.3 miles of stream is rated at FARU and there is another 0.5 miles of stream rated as FARN. Changes proposed for this allotment are to switch from summer use to no more than six weeks of use in the fall. Additionally, juniper would be cut and dropped along 0.25 miles of stream to provide for riparian and streambank protection. These changes would allow for improvements to riparian areas which would make progress towards meeting Standards 2 and 4 by restricting grazing use to six weeks/year (which allows more time for re-growth), eliminating summer use (which provides for no grazing during the entire growing season which can increase riparian vegetation and allow for establishment of more riparian vegetation), and providing protection to some riparian areas with the juniper cutting.

Most of the streams in the North Dixie Creek Allotment are rated as PFC (approximately 2.5 miles) or FARU (approximately 1.1 miles) with a smaller percentage (approximately 0.75 miles) rated as FARN. Changes proposed under this alternative include changing use to late spring and fall use, as well as a new fence to separate the upper and lower pastures and a riparian exclosure fence along the 0.75 miles of North Dixie Creek rated as FARN. The riparian exclosure fence would effectively restrict livestock grazing along the stream segment in this allotment which is currently not meeting standards, and the other changes mentioned above would allow for continued improvement and maintenance of the riparian habitat and stream conditions that are currently meeting standards.

The last allotment to discuss under this alternative is Lost Basin. This is a large allotment, however over 80% of this allotment is private land. On BLM managed land, there is approximately 1.0 mile of stream rated as PFC, 0.1 miles rated as FARU, less than 0.1 miles rated as FARN, and 0.4 miles rated as FARD. Also, there are some springs and aspen groves which are experiencing impacts from livestock grazing. If this action is taken, the spring sources would be fenced for protection, juniper and aspen would be cut and jackstrawed to encourage aspen re-sprouting and to restrict livestock in the aspen grove. The Upper Reagan Creek Pasture would have restrictions placed on it to limit grazing to one month in the time frame from June 1 to July 10. Currently, there are no restrictions as to when livestock can graze this pasture, and this is the area where the FARD rated stream is located. Imposing the grazing restriction to one month of use as well as the protection of the two spring sources and aspen grove would allow for protection and improvement of riparian habitat and streambank stability by increasing riparian vegetation growth and by restricting livestock access to the riparian areas which would reduce the direct impacts currently occurring by livestock.

In addition to the changes mentioned above, all of the allotments (except for French Creek) would have stipulations attached to the grazing permits which would require resting of the pasture/allotment if riparian utilization standards are not met for two consecutive years. This stipulation, along with the other changes analyzed above, would allow for improvement of stream reaches and riparian habitat which are currently not meeting Standards 2 and/or 4, as well as allowing for continued maintenance and improvement of riparian areas that are currently meeting standards (stream reaches rated as PFC or FARU).

Soil, Hydrology, Riparian Cumulative Effects

Cumulative effects of Alternative 1 are associated with riparian areas which are not currently meeting Standards 2 and 4 (streams with a rating of FARD, FARN, or NF) would most likely continue to not meet standards in the next 5-10 years. Because current trend could not be determined on the streams rated as FARN, there may be some slow improvement in some of these areas where trend is actually upward; however noticeable upward trend in the next five years would probably be limited to small areas.

Riparian areas that are currently rated as PFC or FARU would probably remain static or improve slightly as some management changes have already been made which is leading to a slow improvement in some of these areas.

Cumulative effects related to Alternative 2 would show the quickest improvement to riparian areas of the three alternatives analyzed. Resting allotments or reducing the AUMs to only what is authorized based on the private land in the allotment would lead to the quickest improvement in riparian areas by allowing for growth and establishment of riparian vegetation with lessened or no grazing impacts. This growth and establishment of vegetation would help protect and stabilize streambanks which have been impacted, and allow for establishment and growth of woody vegetation to a size that would be less likely to be impacted detrimentally when livestock are re-introduced. By maintaining and enhancing riparian vegetation an upward trend would be expected on the stream reaches that are currently not meeting Standard 2 and continue improvement would be expected on reaches that are meeting Standard 2. This riparian habitat improvement would also lead to improvements in water quality (Standard 4) by providing more stream shade and improving streambank stability. After Standards are met or are showing significant improvement (this could range from 1-5 years or more), grazing would be re-authorized as outlined under Alternative 3.

Implementation of Alternative 3 would also lead to improvement in the riparian areas because of the reduction of AUMs in two allotments, the changes to seasons of use, livestock numbers, and implementation of utilization standards. There are also some new fence projects and riparian restoration projects (juniper cutting and aspen restoration) which would help improve riparian habitat. However, since there is no rest or reduction of AUMs in most of the allotments (as compared to Alternative 2) recovery would proceed at a slower pace on stream reaches rated as FARN, FARD, or NF (except in North Dixie Creek where a riparian enclosure would restrict livestock grazing). Rest would occur on selected pastures/allotments if utilization targets were exceeded for two consecutive years, which provides both an incentive for the permittees to meet utilization targets as well as required rest for a pasture/allotment if standards are not met. Because of the changes and stipulations outlined in Alternative 3, improvement and an upward trend would be apparent in most if not all riparian areas within 3-5 years are implementation, however if monitoring indicates there are areas where improvement is not occurring, additional changes to the livestock grazing would be implemented.

The primary cumulative effects to soil resources under Alternative 1 would be continued soil displacement on those streams not meeting standards. Bank trampling and headcutting would be expected to continue and over time (10 + years) possibly result in increased soil erosion and the potential loss of some small semi-wet meadows. Disturbance of granitic sandy soils would continue where livestock concentrate on flatter terrain with this soil type. These specific sites would not be expected to improve in desired perennial plant cover and density due to the level and regularity of disturbance. Under Alternative 2, cumulative effects over 10 + years would be improved vegetation conditions that would do more to protect soil resources. Cumulative effects with Alternative 3 would be similar to Alternative 2 but at a slower initial rate. Some occasional low level soil disturbance/displacement would be expected even in the best of conditions due to the friability of the granitic based soil material in much of this GU.

3.5 Fish and Aquatic Habitat

3.5.1 Land Use Plan Management Objectives and Activity Plan Objectives

Management Direction

“Maintain or enhance important anadromous and resident fisheries; increase habitat productivity; and emphasize coordinated management with other agencies and landowners. Restore, maintain, or enhance fish habitat on 155 miles of stream that have anadromous and resident fish or the potential to support fish. Approximately 83 miles of fish habitat have been inventoried. A summary of fish habitat condition and trend in the planning area is displayed in the geographic unit descriptions” (RMP p. 18).

Implementation

“Complete inventory of fishery habitat conditions. Improve fish habitat through a combination of projects and livestock grazing management, including adjustments to grazing seasons or systems to protect banks, vegetation, and to reduce soil erosion” (RMP p. 18).

Pedro Mountain GU Resource Objectives

Enhance the riparian habitat along Dixie Creek and tributary streams by stabilizing the stream banks and by increasing the vegetation structure. Exclude livestock grazing along identified stream segments, bogs, and spring overflows where use is incompatible with riparian management objectives.

Improve habitat for fisheries. Maintain/enhance the fishery habitat for trout on Dixie Creek.

Management Actions:

- *Construct fence along Dixie Creek and tributary streams and around selected bogs and springs. Rip-rap the banks of identified stream segments. Plant shrubs in current riparian enclosures.*
- *Conduct riparian inventories on 3.0 miles of stream in this GU and improve 1.2 miles of existing riparian habitat on Dixie Creek (RMP p. 70).*
- *Establish monitoring studies on riparian vegetation in Dixie Creek (RMP p. 70).*
- *Develop grazing systems that enhance fish habitat (RMP p. 70).*
- *Monitor fish habitat condition and trend on Dixie Creek, which was rated as being in “Fair” condition with a downward trend (RMP p. 71).*

3.5.2 Affected Environment

The Burnt River Subbasin – The Burnt River subbasin is located in the northwest portion of the Middle Snake Ecological Province. The subbasin is defined by the Blue Mountains to the west, the Snake River to the east, the Burnt River Mountains to the south and the Powder River drainage to the north. The Burnt River flows generally east to the community of Bridgeport (River Mile (RM) 48), turns northeast to the community of Durkee (RM 28), then south-southeast through Weatherby (RM 18.5) and Huntington (RM 2.5) to join the Snake River at RM 328. Major streams flowing into the Burnt River below Unity Reservoir are Camp, Big, Pritchard, and Dixie Creeks. Dixie Creek begins in the southern portion of the subbasin flowing southeast through Rye Valley then east to join the Burnt River at RM 12.

There are several perennial fish-bearing streams located within the Pedro Mountain GU boundary (North Fork Dixie Creek, South Fork Dixie Creek, Deer Creek, and a small portion of the Burnt River) as well as several perennial/intermittent streams (Basin, Emmigrant, French, Shirttail, Powell, and Hollowfield Creeks), along with many intermittent streams that usually only transport flow after snow melt. Many of the streams in the Pedro Mountain GU are tributaries to Dixie Creek and eventually flow into the Burnt River. The exceptions are the streams in Mormon Basin which flow south into Willow Creek, tributary to the Malheur River.

Fish and Fish Habitat – There are at least 20 miles of known fish-bearing streams in the Pedro Mountain GU. There may be more fish-bearing streams than this, but fish surveys have not been conducted on many perennial and intermittent streams in this GU. For this reason alone, it is important to protect the streams where fish are known to exist.

Redband trout (*Oncorhynchus mykiss gairdneri*) is a native fish that occupies most of the fish-bearing streams within the Pedro Mountain GU, but is widely distributed throughout the subbasin. Though data is limited, current and historical distribution of redband trout is relatively static. And although management and land use activities have affected the seasonal use of habitat within some reaches of the subbasin, redband trout continue to utilize a good percentage of the habitat historically available to the species.

The productivity of trout in the Burnt River subbasin can be measured by the trend of the population growth rate (USFWS 2002). The estimate of the number of redband trout in the Burnt River subbasin is difficult to attain since population surveys have not been conducted on the subbasin scale. Therefore population trends cannot be determined due to the limitation of data. The Burnt River subbasin holds three distinct populations of redband trout. These occupy the Burnt River below Unity Dam, the North

Fork Burnt River and the South Fork Burnt River above Unity Dam (Kostow 1995). Significant allozyme differences exist between these populations and between Burnt River populations and other Snake River redband populations (Kostow 1995). Currens (1997) recommended that future management actions be undertaken in a manner which retains the genetic identity of these individual populations.

Redband trout populations in the Burnt River subbasin are resident only. Resident redband trout tolerate water temperatures between 56° F and 70° F. Redband trout can reach sexual maturity anywhere between one and five years of age, but most maturation occurs at or by three years of age. Spawning takes place primarily in the spring, although studies and field investigations of other inland populations indicate that redband trout can spawn throughout the year where water conditions allow (ODFW 1990-1995). This is most likely to occur in spring-fed systems, where water temperature is essentially constant.

There are several habitat attributes considered to be the habitat characteristics that are the main “drivers” of fish production and sustainability: riparian condition, channel stability, habitat diversity, sediment load, high and low flow frequency, high temperature, and pollutants. Of these attributes, the ones that the BLM BRA can manage for are all stream characteristics except high and low flows, which are highly variable and solely dependent on weather, snow accumulation, and irrigation.

The timing and amount of spring runoff is dependent on winter snow pack depth and condition, as well as spring weather factors such as temperature and rainfall. Seasonal peak flows generally occur in late April and early May (J. Rodgers, Oregon Water Resources Department, personal communication, 2001). Most surface and groundwater use is for irrigation. There are about 80 water right holders in the Burnt River subbasin. The water in the Burnt River subbasin is fully appropriated (J. Franke, Burnt River Irrigation District, personal communication, October 2001), which means during the summer there is no remaining unappropriated water. In low water years, available water is inadequate to supply the authorized rate of delivery.

The amount or extent of impacts that occur on a stream system has everything to do with the survival, growth, and diversity of species within that stream. Fish need to have good water quality for all of these to occur. Water quality standards for fish include meeting the primary water quality standards developed by the Oregon DEQ. They include meeting standards for turbidity, pH, DO, stream temperature, and E. coli.

Stream temperatures were monitored for four years on the North and South Fork of Dixie Creeks. The South Fork met the 68.0°F standard most of the time but did slightly exceed the standard in the lower sampling area with a 7 day max/avg in 2000 of 71.5°F and a 7 day max/avg of 69.4°F in 2002. The stream temperatures exceeded the state standard on the North Fork substantially every year (76.2°F, 80.2°F, 76.5°F, and 88.1°F).

Usually a stream system has degraded substantially with loss of habitat characteristics before high temperature is evident. However, high temperatures have a direct affect on fish species as indicated in Table 10.

The North and South Fork of Dixie Creek, Deer Creek, and the Burnt River are known to support redband trout populations. It is likely there are more streams in the Pedro Mountain GU that support native redband trout species, especially in some of the smaller perennial/intermittent streams, than has presently been recorded. There are very few streams in this area that have been surveyed for fish presence/absence.

Table 10. Modes, temperature range, and time to death of thermally induced fish mortality.

Modes of Thermally Induced Fish Mortality	Temperature Range	Time to Death
<i>Instantaneous Lethal Limit</i> – Denaturing of bodily enzyme systems.	> 90° F > 32° C	Instantaneous
<i>Incipient Lethal Limit</i> – Breakdown of physiological	70° F to 77° F	Hours to Days

regulation of vital bodily processes, namely: respiration and circulation.	21°C to 25°C	
Sub-Lethal Limit – Conditions that cause decreased or lack of metabolic energy for feeding, growth or reproductive behavior, encourage increased exposure to pathogens, decreased food supply, and increased competition from warm water tolerant species.	64°F to 74°F 20°C to 23°C	Weeks to Months

Source: ODEQ 2000

South Fork Dixie Creek

Data and information have been gathered on the South Fork Dixie Creek over the last 19 years in the form of stream surveys and water quality and stream temperature monitoring. Water quality and stream temperatures were monitored from 2000 to 2003. A PFC survey was completed in 2006 and is the most recent data available for this creek. A physical and biological stream survey was completed by the BLM in 1989 and a stream habitat and aquatic survey was accomplished in 2002 by the Oregon Department of Fish and Wildlife (ODFW). The survey completed in 1989 was a good indicator of existing conditions at that time, but the survey in 2002 was the most complete for all measured parameters and was conducted using current scientific methodology. Both surveys collected information on the following parameters:

- Substrate
- Pools
- Gradient
- Width/depth ratio
- Bank cover
- Stream temperatures
- Erosion
- Riparian condition
- Species present

The 1989 hydrological inventory found the South Fork Dixie Creek to be in fair to poor condition, depending upon the site. The riparian vegetation was heavily utilized with almost all young vegetation having been utilized. The riparian vegetation had been over-utilized and the streambanks were modified by trampling. Less than 50% of the streambanks were in stable condition and were eroding and downcut. Plant species documented were: Douglas fir (*Pseudotsuga menziesii*), Ponderosa pine (*Pinus ponderosa*), cottonwood (*Populus trichocarpa*), water birch (*Betula occidentalis*), aspen (*Populus tremuloides*), golden (*Ribes aureum*) and wax currant (*Ribes cereum*), alder (*Alnus sp.*), dogwood (*Cornus stolonifera*), chokecherry (*Prunus virginiana*), willow (*Salix sp.*), rose (*Rosa sp.*), box elder (*Acer negundo*), clematis (*Clematis sp.*), blue grass (*Poa sp.*), and watercress (*Nasturtium sp.*).

The presence of native redband trout was verified throughout the 1989 survey. There were as many as 20 adult fish per 100 yards and as low as 1 fry per 100 yards. It was evident that spawning occurred high in the watershed. At that time, there was a five foot high waterfall just upstream of Thornton Gulch that was blocking upstream migration. Fish habitat was estimated to be in poor to fair condition with trampled banks, over-utilized riparian vegetation, high sediment loading, poor pool habitat, and very limited hiding cover. It was suggested that the stream had a high potential for recovery if there was a reduction of impacts from grazing. It was also stated that fish would be more numerous if habitat conditions improved.

The ODFW (2002) stream survey showed only slight improvements to the stream condition found during the 1989 survey. The average width was 1.4 meters with an average depth of 0.17 meters. The average substrate was predominately sand/silt (51%), gravel (29%), and cobble 14%. Riffles (37%), pools (14%), and runs (33%) were the dominant instream habitat type. Actively eroding streambanks ranged from 6% to 20%, while the canopy closure ranged from 13% to 73%. There were signs of heavy grazing found throughout the survey and fish were observed throughout the entire length of the survey.

The most recent stream and riparian condition was observed during a PFC survey that occurred in 2006. Most of the stream was rated as Functioning at Risk with an upward or non-apparent trend.

Altogether, each of the above-mentioned surveys has confirmed recurring or ongoing problems that have slightly improved over the last 20 years. Each survey confirmed a low number of pool habitat of less than 10%, and 14% with regards to beaver pools. Width to depth ratio is the parameter that seems the most out of balance with continual channel widening, along with shallow stream depth. The riparian areas seem to have the most signs of improvement, but are continually being impacted by cattle grazing. There is still a lack of diversity of riparian grasses and shrubs, with non-riparian species dominating the riparian areas. Aquatic grasses that would help stabilize streambanks also still remain in limited supply, while some bank erosion is still occurring in most reaches.

Deer Creek

Deer Creek is the only known fish-bearing perennial stream that is tributary to the South Fork Dixie Creek. A stream and riparian habitat inventory survey was completed by the BRA in 1989 and included electrofishing in segments of the creek, with two fry and nine fish captured (ranging in size from 4.5 to 8 inches long) in the 100 yards of stream sampled. The average substrate composition was very high for silt and sand (75% to 100%) in all reaches except one that was 35%. The average flow was near 1 cubic feet per second (cfs) with an average width of 20 inches and an average depth of 2 feet.

Streambank condition ranged from severely altered to stable, with most streambanks having some form of visible erosion occurring on at least 50% of the area. Most of the riparian areas were dominated by riparian species that were being encroached by upland plants. The upstream reaches had good riparian canopy cover, ranging from 50% to >70%. Riparian canopy cover in the lower reaches ranged from 40% to 80% and contained the greatest amount of diverse species. There was 80% to 100% grazing on young hardwoods (willow and aspen).

Altogether, grazing was listed as the predominant and only reason for site degradation. The overall condition and trend was listed as poor to fair. Plant species documented were: cottonwood, water birch, aspen, syringa (*Philadelphus lewisii*), chokecherry, willow, alder, box elder, rose, juniper, black medic (*Medicago lupulina*), clematis, water hyacinth (*Triteleia grandiflora*), blue grass, and various rushes.

The most recent stream and riparian condition was observed during a PFC survey that occurred in 2006. The majority of the stream was rated as Functioning at Risk with a non-apparent trend.

North Fork Dixie Creek

Data and information have been gathered on the North Fork Dixie Creek over the last 19 years in the form of stream surveys and water quality and stream temperature monitoring. Water quality and stream temperatures were monitored from 2000 to 2003 and a PFC survey was completed in 2006. A physical and biological stream survey was completed by the BRA in 1989 and a stream habitat and aquatic survey was accomplished in 2005 by the ODFW. The survey completed in 1989 was an indicator of existing conditions at that time, but the survey in 2005 was the most complete for all measured parameters and was conducted using current scientific methodology. Both surveys collected information on the following parameters:

- Substrate
- Pools
- Gradient
- Width/depth ratio
- Bank cover
- Stream temperatures
- Erosion
- Riparian condition
- Species present

The 1989 hydrological inventory found the North Fork Dixie Creek to be in both good and poor condition, depending upon the site. The riparian vegetation was heavily utilized with almost all young

vegetation having been utilized. The streambanks were eroding and downcut, up to 4 feet in height. The presence of native redband trout was verified and redband trout were found throughout the length of the survey. Fish habitat was estimated to be in poor condition with trampled banks, over-utilized riparian vegetation, high sediment loading, poor pool habitat, and very limited hiding cover. It was suggested that the stream had a high potential for recovery if there was a reduction of impacts from grazing. It was also stated that fish could be eliminated from the stream if conditions proceeded in a downward trend. Plant species documented were: cottonwood, water birch, golden currant, chokecherry, willow, alder, rose, juniper, clematis, rushes, blue grass, and sweet clover.

The ODFW stream survey that occurred in 2005 showed only slight improvements. The average width was 2.5 meters with an average depth of 0.19 meters. The average substrate was predominately sand/silt (43%), gravel (28%), and cobble 17%. Riffles (52%), pools (22%), and runs (21%) were the dominant instream habitat type. Actively eroding streambanks ranged from 12% to 32%. Canopy closure averages were just above 10% throughout most of the stream, with one reach measured at 45%, which was thought to be creating increases in water temperatures. There was light to heavy grazing found throughout the survey.

The most recent stream and riparian condition was observed during a PFC survey that occurred in 2006. A high percentage of the stream was rated as being PFC, while the remainder of the stream was rated as Functioning at Risk with a non-apparent trend.

Altogether, each of the above-mentioned surveys has confirmed recurring problems that have slightly improved over the last 20 years. Each survey confirmed a low number of pool habitat. Width to depth ratio is the parameter that seems the most out of balance with continual channel widening, along with shallow stream depth. The riparian areas seem to have the most signs of improvement, but are continually being impacted by cattle grazing. There is a lack of diversity of shrubs in the riparian areas, with willow being the most prominent shrub. Aquatic grasses that would help stabilize streambanks also still remain in limited supply, while some bank erosion is still occurring in most reaches.

Other Stream Surveys Accomplished for the Pedro Mountain GU

Other stream surveys conducted within the Pedro Mountain GU (mostly in 1989) were completed in potential fish-bearing streams. Some of these streams had at least one prior survey that confirmed fish presence, but a more thorough or complete survey had not been accomplished. Although there are other potential fish-bearing perennial streams, there is no confirmation of fish presence in those streams due to a lack of surveys conducted within those streams. They include: French Creek, Shirttail Creek, Powell Creek, and Hollowfield Creek. It is a professional opinion that native fish are present in these streams when flows are adequate enough to support upstream and downstream migration within the stream.

Skunk Gulch

A limited stream survey and riparian habitat inventory (one reach) was completed by the BLM in 1989 on Skunk Gulch, a tributary to South Fork Dixie Creek. Fish sampling also occurred during that survey that included electrofishing segments of the creek. There were 10 fry found in the 100 yards of stream sampled. The average composition of the stream bottom was 20% boulders, 35% cobble, 40% coarse and fine gravel, and 5% sand/silt. The channel bank composition was 25% boulder, 25% cobble, 20% gravel, and 35% silt/sand. The average flow was <1 cfs with an average width of <2 feet. Streambanks had received major alteration with less than 50% in stable condition. Most of the riparian areas were dominated by riparian species. Canopy cover was >70%. There was 60% to 80% of the streambank covered in vegetation. There was 100% grazing on young hardwoods (water birch and aspen). Grazing was listed as the predominate reason for site degradation. The overall site condition and trend was listed as poor. Plant species documented were: water birch, aspen, syringa, chokecherry, and clematis.

The most recent stream and riparian condition was observed during a PFC survey that occurred in 2006, in which the stream was rated as Functioning at Risk with no apparent trend.

Kitchen Gulch

A limited stream riparian habitat inventory survey was completed by BLM in 1989 on Kitchen Gulch, a tributary to North Fork Dixie Creek. The average substrate composition was about 50% coarse to fine gravel and 50% sand/silt. The channel bank composition was 20% coarse to fine gravel and 70% silt/sand. The average flow was <1 cfs with an average width of 12 to 18 inches. Streambanks had received major alteration with less than 50% in stable condition. Most of the riparian areas were dominated by riparian species that were being encroached by upland plants. Canopy cover was >70%, except one reach that was 30% to 49%. There was about 40% to 50% of the streambank covered in vegetation. There was 100% grazing on young hardwoods (willow, box elder, aspen, and cottonwood). Grazing was listed as the predominant reason for site degradation. The overall site condition and trend was listed as fair to poor. Plant species documented were: rose, willow, box elder, golden currant, water birch, cottonwood, syringa, aspen, and bluegrass.

The most recent stream and riparian condition was observed during a PFC survey that occurred in 2006. The majority of the stream was rated as Functioning at Risk with a downward trend.

Clough Gulch

A limited stream survey and riparian habitat inventory (one reach) was completed by BLM in 1989 on Clough Gulch, a tributary to North Fork Dixie Creek. The average composition of the stream bottom was 50% fine gravel and 50% sand/silt. The channel bank composition was 30% fine gravel and 70% sand/silt. The average flow was <1 cfs with an average width of <2 feet. Streambanks had received major alteration with less than 50% in stable condition. Most of the riparian areas were dominated by riparian species that were being encroached by upland plants. Canopy cover was less than 30%. There was 40% to 60% of the streambank covered in vegetation. There was 100% grazing on young hardwoods (willow). Grazing was listed as the predominate reason for site degradation. The overall site condition and trend was listed as poor. Plant species documented were: rose, willow, clematis, and sweetclover (*Melilotus sp.*).

The most recent stream and riparian condition was observed during a PFC survey that occurred in 2006. The stream was rated as Functioning at Risk with an upward trend.

Brouchaux Gulch

A limited stream survey and riparian habitat inventory (one reach) was completed by BLM in 1989 on Brouchaux Gulch, a tributary to North Fork Dixie Creek. The average composition of the stream bottom was 55% coarse and fine gravel and 45% sand/silt. The channel bank composition was 50% fine and coarse gravel and 50% sand/silt. The average flow was <1 cfs with an average width of <2 feet. The stream channel was entrenched 10 feet. Streambanks appeared to be stable. Most of the riparian areas were dominated by riparian species. Canopy cover was less than 30%. There was 60% to 80% of the streambank covered in vegetation. There was only 100% grazing on young hardwoods (willow). Grazing was listed as reason for site degradation. The overall site condition and trend was listed as fair. Plant species documented were: willow, golden currant, clematis, and rose.

The most recent stream and riparian condition was observed during a PFC survey that occurred in 2006, in which the stream was rated as being in Proper Functioning Condition.

Tables 11 and 12 below display the summarized results from the ODFW stream surveys conducted on the North Fork (2005) and South Fork (2002) of Dixie Creek. This data summarizes the detailed information acquired during the stream surveys and discussed in the Affected Environment section above.

Table 11. ODFW stream survey and aquatic inventory for North Fork Dixie Creek in 2005.

Stream Habitat	Pools-Riffles	Gradient	Width and Depth	% canopy closure and % shade	Stream Substrate	Stream Temps	Erosion	Ground Cover	Riparian Species
Reach 1	65% (dammed beaver)	2.5%	5.8' width and	8% canopy closure	Sand 35%, silt 21%,	14.0 C.	12%	Shrub 22%, grass/forb	Willows, alder, rushes,

	pools)		0.25' depth W:D ratio 10.7	and 44% shade	gravel 19%, cobble 18%			73% Heavy grazing	grass and shrubs
Reach 2	Rapids 69% and riffles 26%	3.1%	1.8' width and 0.18' depth W:D ratio 9.6	15% canopy closure and 58% shade	Sand 29%, gravel 29%, cobble 18% boulder 15%	17.0 C.	13%	Shrub 54%, grass/forb 44%	Willow, alder, cottonwood, sedges, rushes, aspen
Reach 3	Riffles 85%, rapids 9%	2.8%	1.5' width and 0.17' depth W:D ratio 12.7	11% canopy closure and 39% shade	Sand 43%, gravel 34%,	14.0 C.	32%	Shrub 33%, grass/forb 53%	Willow, alder, cottonwood, sedges, rushes,
Reach 4	Rapids 56%, riffles 43%	4.6%	1.4' width and 0.16' depth W:D ratio 13.1	45% canopy closure and 42% shade	Sand 30%, gravel 31%, cobble 21% boulder 15%	14.2 C.	14%	Shrub 0%, grass/forb 100%	Willow, alder, cottonwood, sedges, rushes, aspen

Limiting Factors – bank erosion, shallow from widening of channel, sediment, bank erosion, limited pools, cattle grazing

Redband trout were observed throughout entire survey. Several beaver pools and beaver dams were in reach 1.

Table 12. ODFW stream survey and aquatic inventory for South Fork Dixie Creek in 2002.

Stream Habitat	Pools-Riffles	Gradient	Width and depth	% canopy closure and % shade	Stream Substrate	Stream Temps	Erosion	Ground Cover	Riparian Species and Other Observations
Reach	86% riffles	2.1%	1.4'	13%	Sand and	10.0 C.	17%	Shrub	Willow,

1			width and 0.22' depth W:D ratio 7.3	canopy closure and 49% shade	silt 56%, gravel 36%,			11%, grass/forb 48%	aspen alder, rose, clematis, water cress, bluegrass, cow skulls, beaver activity, frogs, bee hives
Reach 2	79% rapids, riffles 13%	5.3%	1.1' width and 0.13' depth W:D ratio 7.4	45% canopy closure and 70% shade	Silt and sand 30%, gravel 33%	15.0 C.	20% Bank trampling	Shrub 0%, grass/forb 95%	Frogs, fish, owl, rattlesnake, cows, chukar
Reach 3	71% rapids, cascades 24%	5.7%	1.2' width and 0.13' depth W:D ratio 6.4	19% canopy closure and 70% shade	Gravel 30%, cobble 32%	15.0 C.	13%, bank trampling	Shrub 7%, grass/forb 42%	Fish, frogs, squirrels, chipmunks
Reach 4	82% cascades, rapids 18%	10.5 %	0.9' width and 0.06' depth W:D ratio 7.3	35% canopy closure and 88% shade	Gravel 26% cobble 25%	12.0 C.	6%	Shrub 13%, grass/forb 45%	fish
Reach 5	Beaver pools 46%, riffles 17%, rapids 19%	2.3%	1.8' width and 0.14' depth W:D ratio 10.9	73% canopy closure and 70% shade	Silt and sand 81%, gravel 15%	13.0 C.	14%	Shrub 6%, grass/forb 40%	Hawk, skeleton of cow, beaver activity

Cattle were observed throughout the survey in September. A high percentage of silt and sand was found (25-91%). Fish were observed as well as beaver activity. There were very few large trees, many areas with no trees and shrubs.

3.5.3 Alternative 1

Changes have been made on the allotments within the Pedro Mountain GU in the last ten years that have slightly improved riparian and stream conditions. Many of the streams however, are not in stable condition and impacts from grazing still occur and would continue to do so with Alternative 1. This alternative does not restrict the current season of use or reduce AUMs within the allotments. Impacts to North Fork Dixie Creek, South Fork Dixie Creek, Deer Creek, a small portion of the Burnt River, several perennial/intermittent streams (French, Shirttail, Powell, and Hollowfield Creeks and Skunk, Kitchen, Clough and Brouchoux Gulches), would continue to occur. In streams within the GU that were surveyed and determined to be below PFC, stream temperatures would continue to increase if impacts from grazing management in Alternative 1 were allowed to continue.

If this alternative were selected, grazing permits would state that utilization standards must be met and the current season of use would be permanently changed to a spring and fall grazing period that the permittees have been following over the last ten years. This may continue to create a loss of fish habitat and result in a reduction of age class diversity in redband trout populations. There would be some expectation of improvement of riparian vegetation health and an increase in canopy cover because there has been some slight improvement of the riparian vegetation in the last few years. However, grazing under this alternative would continue to contribute to downcutting, channel widening, and unstable streambanks, but only if utilization standards are not adhered to or met.

The current condition of several of the springs within the Pedro Mountain GU is affecting downstream flow into the fish-bearing streams. These springs are impacted by current grazing, especially late fall grazing, and have either failed or are not fully functional, resulting in compaction and loss of wetland habitat. If Alternative 1 was selected, fish-bearing streams within the Pedro Mountain GU would not be expected to change from their current condition over time and rangeland standards 2 and 5 would be more difficult to meet.

3.5.4 Alternative 2

This alternative proposes to temporarily reduce or eliminate livestock grazing in certain pastures on BLM land, with emphasis on grazing rest, until standards are met on all pastures prior to implementing Alternative 3.

Alternative 2 would be the most beneficial alternative at improving stream and riparian habitat within all streams and pastures. This alternative would allow streams to stabilize and partially restore themselves by providing time for sedges, rushes, and other riparian vegetation to re-establish, which in turn, would decrease sediment delivery and transport to streams and help improve instream fish habitat.

Alternative 2 would result in the most improvements to riparian habitat for redband trout. Temporarily reducing and eliminating livestock grazing until standards are met would allow riparian areas time to recover before a modification of AUMs and utilization standards is implemented (Alternative 3). Implementation of Alternative 2 would result in an upward trend in riparian and instream habitat. Alternatives 2 and 3 propose to modify seasons of use compared to Alternative 1. Therefore, Alternative 2 would result in rangeland Standards 2 and 5 being met more efficiently and effectively than the other alternatives.

3.5.5 Alternative 3

Alternative 3 proposes to implement modifications to seasons of use and AUMs. Overall, Alternative 3 would only be a minor improvement to the current management plan in improving stream habitat in all of the streams if the proposed modifications are adhered to. Alternative 3 does clarify either spring or fall use, rather than consecutive spring and fall use. This modification in season of use would improve the riparian vegetation, especially with the implementation of utilization standards. It would improve the quality of vegetation in the riparian areas better than Alternative 1, but would not be as beneficial as Alternative 2, which includes a period of rest prior to implementation of Alternative 3.

Without a rest period, instream and riparian habitat would be restored at a much slower rate than Alternative 2. Impacts would continue to occur with an upward trend developing over time. Modifications in seasons of use would be more beneficial than Alternative 1, but not as beneficial as the proposed period of rest for Alternative 2.

Alternative 3 would improve fish habitat, riparian vegetation, and water quality over time, but at a much slower rate than Alternative 2. Therefore, rangeland Standard 2 might eventually be met over time if an improved condition is sustained.

Aquatic Cumulative Effects:

Alternative 1

There would be no expectation for, improvement of fish-bearing streams, wetlands, or riparian areas within the Pedro Mountain GU from implementing Alternative 1. Impacts to fish habitat, populations,

and age classes are evident and ongoing with current management. Alternative 1, existing grazing management, has the potential to further degrade fish and riparian habitat by increasing sediment disturbance and decreasing riparian vegetation cover, resulting in increased stream temperatures and poor water quality for fish. This alternative would continue to create the cumulative impacts to streams and fish habitat that has occurred over the years. There would be no overall improvement to the watersheds and cumulative impacts would continue to occur. The implementation of Alternative 1 would result in no overall improvement to the watershed, because grazing impacts would continue to occur. Rangeland Standards 2 and 5 would never be completely or sufficiently met.

Alternative 2

Fish habitat and fish populations have the highest potential to improve with Alternative 2. The proposed rest period would allow an ample amount of time for recovery of riparian habitat that would improve fish habitat and water quality. Alternative 2 would prevent existing impacts from getting any worse and would allow riparian areas an opportunity to start recovering since most of the streams within the Pedro Mountain GU currently do not meet any of the riparian management objectives or State of Oregon water quality standards. Cumulative effects that have occurred from past grazing activity would be restored much more quickly with Alternative 2 compared to the other alternatives. Resting the pastures and the eventual reduction of AUMs and seasons of use would promote the fastest restoration of fish and riparian habitat and would promote an upward trend in fish population numbers.

Alternative 3

Alternative 3 would reduce the amount of grazing impacts to fish-bearing streams within the Pedro Mountain GU, as compared to Alternative 1. However, Alternative 2, which proposes a period of grazing rest prior to implementing Alternative 3, would reduce grazing impacts temporarily and create an upward trend faster than Alternative 1. Alternative 3 would create minor changes in stream and riparian area health and would not create an upward trend as quickly as Alternative 2. The difference between Alternative 1 and Alternative 3 is that fences would be built and reductions in AUMs would take place under Alternative 3 compared to the existing number of AUMs allowable under Alternative 1 (see Table 4 for proposed project descriptions). Although some reduction in seasons of use would help move streams within the Pedro Mountain GU towards an upward trend, stream and riparian area recovery would be as slow as that under Alternative 1. However, without a major reduction in AUMs and changes to seasons of use, it is unlikely that the cumulative effects to fish and riparian habitat would improve very fast. Alternative 3 would result in improvements to fish habitat, but recovery of riparian habitat would take many years.

3.6 Wildlife / Wildlife Habitat and Special Status Animals

3.6.1 Land Use Plan Management Objectives and Activity Plan Objectives

Geographic Unit Resource Condition Objectives

The Baker RMP (USDI 1989), directs BLM to “Continue identification of wildlife habitat requirements as other resource activity plans are prepared” (RMP p. 18). This document will address wildlife habitat requirements in relation to grazing activity planning for Pedro Mountain Geographic Unit. In addition, Pedro Mountain GU land use plan direction indicates the following:

- *Resource Condition Objective - “achieve a mid-seral stage plant community and improve upland habitat for mule deer, elk, turkey, and grouse [blue sage-grouse]” (RMP p. 69).*
- *Wildlife and Fisheries Habitat direction - “Meet forage requirements for big game as recommended by ODFW” (RMP p. 70).*

3.6.2 Affected Environment

Endangered Species Act Considerations

According to the best available records and field observations, no federal or state listed species currently occur within the analysis area. Consequently, there is no need for BLM to consult with USFWS under

section 7 of the federal Endangered Species Act (ESA). Several un-listed species present are of concern to the USFWS. For a complete list of potential wildlife of management concern within the analysis area see Appendix 2. BLM believes most of the species that would theoretically occupy Pedro Mountain GU are not there for a variety of reasons such as: habitat connectivity, population numbers, use patterns, and topology.

Wildlife habitat types present and management considerations

Pedro Mountain GU Allotment(s) is comprised of sagebrush steppe habitat and a network of streams with associated wetlands and conifer forests. No juniper woodlands are present. Given the dominance of sagebrush steppe habitat, the following upland wildlife habitat management documents provide important insight and guidance relevant to the analysis area: (1) BLM national sage-grouse habitat conservation strategy (USDI 2004a), (2) Greater Sage-grouse Conservation Assessment and Strategy for Oregon (Hagen 2005), and (3) BLM Technical Note 417 Assessing Big Sagebrush at Multiple Spatial Scales (Karl & Sadowski 2005).

All three documents listed above describe desirable habitat conditions and promote actions needed to conserve greater sage-grouse. In addition, each document highlights the importance of managing public land in a way that would support communities of sagebrush steppe species at the landscape level. According to Maser et al. (1984), about 100 to 190 species of rangeland wildlife either breed or feed within big sagebrush habitats, depending upon shrub structural characteristics. Other published documents also indicate substantial wildlife reliance upon sagebrush for all or part of their life history requirements. For instance, even though black-tailed jackrabbits (*Lepus californicus*) are not considered true sagebrush obligates, on public land they are often most often associated with sagebrush cover and they are an important prey species for raptors or other mammalian predators. Thus, the ecological web for wildlife in sagebrush steppe is quite complex and BLM management decisions must go beyond considerations that address true sagebrush-dependent species only.

Sagebrush dependent wildlife either known to occur or very likely to occur within the analysis area include the following:

- *Birds* – greater sage-grouse, sage sparrow, brewer’s sparrow, vesper sparrow, black-throated sparrow, lark sparrow, loggerhead shrike, green-tailed towhee, and sage thrasher.
- *Mammals* - sagebrush vole and pronghorn. Sagebrush voles have a strong affinity for sagebrush but may occur in areas lacking sagebrush overstory if grass under stories are dense and well developed.

By practicing good land use stewardship likely to the benefit of multiple species of wildlife, BLM may then avoid the future need for listing animals under protection of federal or state endangered species acts. For grazing permit renewal purposes, this objective to promote healthy wildlife communities may be met by accomplishing the following:

1. Promote proper grazing use consistent with the S&Gs.
2. Limit the geographic extent of grassland habitats, or those rangelands that support less than 5% sagebrush canopy cover. Sagebrush shrubland habitats (\geq 5% sagebrush canopy cover) typically support much more diverse wildlife communities than grasslands ($<$ 5% sagebrush canopy cover).
3. Promote healthy riparian habitat conditions by removing juniper competition in aspen communities. Riparian habitats comprise a small proportion of the analysis area. Nevertheless, riparian areas in general support a disproportionately large number of wildlife habitat requirements. For eastern Oregon, as many as 280 species are either directly dependent on riparian habitat or utilize them more than other habitats (Thomas et al. 1979).

Aside from localized and limited impacts from big game, the most important controllable riparian habitat disturbance activity is livestock grazing use. Properly scheduled grazing use is compatible with maintenance or improvement of habitat qualities for wildlife. Proper grazing use within riparian areas

normally includes some combination of rest and/or deferment. Woody and herbaceous riparian plants both offer forage, cover, and structure valuable for wildlife.

Relatively common wildlife species present

Game species present include: American pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), elk (*Cervus canadensis*), coyote (*Canis latrans*) bobcat (*Lynx rufus*), and chukar (*Alectoris chukar*). Representative non-game species include red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), Luzuli bunting (*Passerina amoena*), yellow warbler (*Dendroica petechia*), sage sparrow (*Amphispiza belli*), common nighthawk (*Chordeiles minor*), Cooper’s hawk (*Accipiter cooperi*), great horned owl (*Bubo virginianus*), and western meadowlark (*Sturnella neglecta*).

Table 13. Wildlife of management importance according to season of use and key habitat characteristics.

Wildlife of Management Importance within Pedro Mountain GU	Season of Use	Principal Habitat Dependency for Forage, Cover, Structure, and Security
American pronghorn Rocky Mountain mule deer ferruginous hawk	Spring through fall	Mixed shrublands and grasslands
*greater sage-grouse	Nesting and brooding.	Shrublands Winter use – at least 10% sagebrush canopy cover Nesting use – at least 15%-25% or more sagebrush canopy cover
*sagebrush vole, *Brewer’s sparrow, *horned lark, *western meadowlark, *black-throated sparrow, *sage sparrow, *loggerhead shrike, *sage thrasher	Spring through summer	Shrublands At least 10% sagebrush canopy cover
Rocky Mountain mule deer yellow warbler greater sage-grouse	Spring through fall	Woody riparian species such as willow and herbaceous species such as grasses, forbs, sedges, and rushes.
* Species associated with shrub steppe habitats that are at risk throughout the west that have declined substantially in the Interior Columbia Basin area since historical times.		

Special status wildlife narratives

Special status wildlife species known to breed on public land or use public land for part of their life history requirements include: pygmy rabbit (*Brachylagus idahoensis*), ferruginous hawk (*Buteo regalis*), sage-grouse (*Centrocercus urophasianus*), and California bighorn (*Ovis canadensis californiana*). Also refer to Appendix 2 for a list of Potential Species of Concern in the Pedro Mountain GU.

Brief life history narratives for special status wildlife or habitat in Pedro Mountain GU are as follows:

pygmy rabbit

- No systematic searches for pygmy rabbits have occurred in northeast Oregon therefore, little is known about their distribution or abundance within the BRA. Pygmy rabbits require dense (normally >25% canopy cover) Wyoming, basin, or mountain big sagebrush for both shelter and food. They prefer soils that are loose enough to excavate burrows, but compact enough to keep their shape. Burrow systems are typically constructed at the base of big sagebrush plants, reinforcing the vital role of sagebrush to pygmy rabbit survival. Pygmy rabbits climb up into the canopy of sagebrush plants and eat sagebrush leaves as a primary food source. Although they eat more than just sagebrush, they are considered a sagebrush-dependent species. Pygmy rabbits are in decline throughout their range due to habitat loss, habitat degradation, and fragmentation. Proper grazing use practices and careful application of land treatments can be expected to conserve and benefit pygmy rabbit habitat.

ferruginous hawk

- Ferruginous hawks prefer open grassland and shrubland habitats. Rock ledges, sagebrush, or juniper trees often provide nesting sites. Rodents provide their main source of food. In general, ferruginous hawk populations have declined throughout their breeding range due to habitat loss, habitat fragmentation, urbanization, and conversion of native rangeland over to non-native communities. Pedro Mountain allotment provides hunting range for ferruginous hawks but no nesting habitat. Proper grazing use practices and careful application of land treatments can be expected to conserve and benefit ferruginous hawk habitat, including the prey species they are dependent upon.

greater sage-grouse

- The greater sage-grouse, which is a Bureau sensitive species, is located throughout the GU. Sage-grouse are large, chicken-like birds, which nest on the ground. Historically, sage-grouse live in the sagebrush steppe regions of southern British Columbia, Canada and throughout eastern Washington and Oregon. Sage-grouse prefer a sagebrush cover class of approximately 15-25% and slopes <30% (Hagen 2005) for nesting activities. Due to the steepness in some areas, it is unlikely that sage-grouse use the Pedro Mountain GU for nesting and brooding.

California bighorn

- The California bighorn sheep, a Bureau sensitive species, can be found at the Pedro Mountain GU. Bighorn sheep are among the hardest animals to find because they typically live on and around rocky cliffs that are inaccessible to humans and most predators. Observance of bighorn sheep typically occur in winter when they migrate to the valleys. Bighorn sheep roam in small herds or as individuals in the summer and in the winter roam in large herds.

Federal agencies are mandated to protect threatened and endangered species and would take appropriate action to avoid the listing of any species. Standard 5 focuses on retaining and restoring native plant and animal (including fish) species, populations, and communities. To meet this standard, habitats must support a healthy, productive, and diverse populations and communities of native plants and wildlife (including special status species and species of local importance) appropriate to soil, climate, and landform. In meeting the standard, native plant communities and animal habitats would be spatially distributed across the landscape with a density and frequency of species suitable to ensure reproductive capability and sustainability. Plant populations and communities would exhibit a range of age classes necessary to sustain recruitment and mortality fluctuations.

Essential habitat elements for species, populations and communities are present and available, consistent with the potential/capability of the landscape, but not limited to as evidenced by:

- plant community composition, age class distribution, productivity
- animal community composition, productivity
- habitat elements
- spatial distribution of habitat
- habitat connectivity
- population stability/resilience

The following allotments failed to meet one or more of these Standard 5 potential indicators: Lost Basin, French Creek, and Rye Valley East and West Pasture. One area that has potential for rangeland recovery and the greatest concern for wildlife is Lost Basin.

Under existing management, Lost Basin aspen are not regenerating and any new reproductive shoots available to livestock are either being eaten or destroyed by trampling damage. Existing aspen occur in even-aged stands that are likely to disappear over the next few decades unless new recruitment occurs. In addition, juniper encroachment into aspen communities is adversely impacting riparian habitat. Juniper presence may be expected to accelerate aspen loss in Lost Basin over the long term. This is because juniper is a strong competitor for available moisture and nutrients and it would eventually replace aspen

with juniper woodland habitat. Thus, a combination of BLM actions are needed including grazing adjustment and removal of juniper encroachment in aspen communities in order to protect important riparian wildlife habitat values including forage, cover, structure, and surface water.

In addition to aspen reproductive failure, springs located within the analysis area are suffering from the effects of concentrated livestock grazing use and trampling damage. -Over time, these grazing impacts may be expected to result in lowered water-tables and upland plant community encroachment which would further accelerate spring de-watering. The adverse consequences to wildlife habitat from spring de-watering include (1) loss or reduction of available drinking water, (2) loss of succulent green forage, and (3) decreased insect food sources.

Under existing management, French Creek, Rye Valley East and West Pasture both the wildlife and riparian standards were not met. Riparian bank stability and vegetative composition along the greenline would need improvement which would improve wildlife habitat. Standard 5 was not met in these pastures due to the over abundance of weed species and the lack of native perennial grass cover species (bluebunch wheatgrass and Idaho fescue) which supports healthy wildlife habitat.

Assumptions common to all alternatives

Primary wildlife species of management importance and their minimum shrub composition requirements under all EA alternatives include the following:

- Sagebrush steppe at < 5% shrub canopy cover, or predominantly grassland communities: American pronghorn, horned lark.
- Sagebrush steppe at \geq 5% shrub canopy cover, or predominantly shrubland communities: greater sage-grouse, brewer's sparrow, sage thrasher, green-tailed towhee, gray flycatcher, ferruginous hawk, sagebrush vole, pygmy rabbit (hypothetical), western meadowlark, black-tailed jackrabbit, western burrowing owl, and mule deer.

3.6.3 Alternative 1

For Alternative 1, wildlife objectives for species of management importance in Pedro Mountain GU would be partially met in a manner consistent with the Baker RMP, the OR/WA S&Gs, and the Oregon Greater Sage-grouse Management Strategy:

- Within 5 years, wildlife escape ramps would be installed in all existing livestock water troughs. Because of this action, bird species and other small wildlife entrapment caused by improper livestock water development would be reduced over time. Alternative 1 escape ramp placement would not eliminate wildlife entrapment or drowning, but the incidental mortalities that may occur would be consistent with BLM policy regarding wildlife protection and livestock water developments (see Design Feature 10).
- BLM would avoid additional fencing conflicts with wildlife activity because no new enclosure or allotment subdivision projects would occur.
- Properly maintained existing riparian enclosures would continue to provide high quality riparian habitat for wildlife.
- Because no land treatment projects would occur with Alternative 1, shrub-related wildlife habitat values would not change as a result of BLM action. Under current conditions, rangelands would continue to exist as predominantly (greater than 5%) shrubland communities that provide shrub forage, cover, and structure values important to sage-grouse and many other animals that occupy sagebrush habitats.
- Because no forest or grassland habitat manipulation projects are proposed, wildlife habitat values for species associated with grasslands and forestlands would not change. Suitable habitat would continue to be provided for species such as: American pronghorn, horned larks, elk, and mule deer.

Even though Pedro Mountain GU is made up of predominantly shrubland communities capable of supporting wildlife that occupy sagebrush habitat, continued weakness in grass and forb composition would result in failure to meet the S&Gs for wildlife in some allotments (Standard 5). Good quality sagebrush steppe ecosystems for wildlife support sagebrush cover and a mix of deep rooted perennial grasses and native forbs. Shrubs, grasses, and forbs in combination provide the necessary forage, cover, structure, and security needs of wildlife.

If Alternative 1 is implemented, wildlife objectives for species of management importance in Pedro Mountain GU would not be met in accordance with the Baker RMP, the OR/WA S&Gs, and the Oregon Greater Sage-grouse Management Strategy for the following reasons (of equal weight):

- Continuation of current grazing use would be expected to further diminish already weakened perennial grasses and likely invite further occupation by invasive annuals or noxious weeds in some pastures. Because native grasses and forbs provide important lateral and overhead hiding cover for ground-nesting birds for concealment, ongoing grazing use would, over time, further erode and diminish ground-nesting bird habitat quality. It is probable that under current grazing management, ground-nesting bird recruitment and nesting success is being adversely effected by impacts related to livestock grazing use in some pastures. The timing, intensity, and duration of upland livestock use would need to change in order to improve perennial grass conditions and meet the S&Gs for wildlife.
- Existing enclosure fences would probably continue to cause some predator mortalities because both steel and wooden fence posts provide elevated raptor hunting perches. Bird species often seek out riparian habitats during late brood-rearing because of the succulent green forage plants available. Furthermore, birds may collide with existing fences, often resulting in either injury or death. In spite of these potential adverse consequences, existing fencing impacts probably do not substantially threaten bird populations within the analysis area.
- Riparian wildlife habitat would continue to function improperly because of repeated late season grazing use. Under the influence of repeated late season grazing use, riparian wildlife habitat quality, structure, and composition would remain impaired as described in the evaluation. Although the necessary plant structural and functional groups are present within analysis area riparian habitats, ongoing grazing use is causing failure to meet the S&Gs. The timing, intensity, and duration of riparian livestock use would need to change in order to meet the S&Gs for wildlife.
- Under this alternative the aspen stand described in the affected environment would continue to decline because of little to no recruitment due to livestock and wildlife grazing and loafing and juniper encroachment. The loss of the aspen stands would lower wildlife habitat complexity found within the Pedro Mountain GU.

3.6.4 Alternative 2

The same projects would be implemented for Alternative 2 as in Alternative 3. Implementation of Alternative 2, would result in wildlife objectives for species of management importance being partially met in a manner consistent with the Baker RMP, the OR/WA S&Gs, and the Oregon Greater Sage-grouse Management Strategy. Wildlife would continue to migrate in and out of the GU.

BLM Design Features including escape ramp installation in livestock water tanks and protection of special status species breeding habitat would meet wildlife objectives for reasons described in Alternative 1. Also, Alternative 2 would result in the same amount of shrub-related wildlife habitat values as described under Alternative 1.

However, compared to current management, Alternative 2 proposed grazing systems and project developments would be consistent with the Baker RMP, the OR/WA S&Gs, and the Oregon Greater Sage-grouse Management Strategy and guidelines. The following impacts would be expected from Alternative 2:

- Grazing rest until standards are met would be highly beneficial and lead to improvement in wildlife habitat composition and structure. It would result in the most favorable outcomes for protection and enhancement of wildlife habitat. Rest until standards are met period would probably enhance the likelihood of improving weakened sagebrush steppe over the long term when combined with the proposed grazing system adjustments.
- Forage, cover, and structure values provided for wildlife by sagebrush would not diminish, as described in Alternative 1. However, because available livestock AUMs would be reduced and the timing, intensity, and season of livestock use would be adjusted, Alternative 2 proposed grazing use would promote recovery of grasses currently weakened by improper grazing use (provided adequate temperature and moisture conditions occur during the rest period).
- Grass and forb forage availability for wildlife would likely improve under Alternative 2. But more importantly, the structure, health, and distribution of deep rooted perennial grasses and forbs would likely improve. Thus, habitat quality would be enhanced because vigorous grasses and forbs provide important lateral and overhead cover. There is no guarantee that Alternative 2 improved habitat conditions would result in higher numbers of sage-grouse. However, sage-grouse habitat and survival would definitely improve in contrast to current management (Alternative 1). Alternative 2 would allow significant progress toward meeting standards for healthy rangelands.
- Compared to current management, fewer years of spring livestock grazing use in Rye Valley allotment would have fewer impacts to sage-grouse nesting habitat. Consequently, although BLM grazing management actions would not fully maximize protection of sage-grouse habitat values, the potentially harmful impacts of further degradation of grasses and forbs caused by current livestock use would be diminished.
- Alternative 2 would be expected to improve riparian wildlife habitat quality, structure, and plant composition over time because of gap fencing, pasture division fencing, and long-term adjustment to the timing, intensity, and season of current livestock grazing use.
- New and existing enclosure fencing around water sources would fully protect and enhance riparian habitat values. Attention would have to be made moving and keeping livestock out of the riparian zones and maintaining fences.

3.6.5 Alternative 3

If Alternative 3 were implemented, wildlife objectives for species of management importance in Pedro Mountain GU would be met in a manner consistent with the Baker RMP, the OR/WA S&Gs, and the Oregon Greater Sage-grouse Management Strategy for the following reasons:

- Within 5 years, wildlife escape ramps would be installed in all existing livestock water troughs. Because of this action, sage-grouse and other small wildlife entrapment caused by improper livestock water development would be reduced substantially over time. Escape ramp placement would not eliminate wildlife entrapment or drowning, but the incidental mortalities that may occur would be consistent with BLM policy regarding wildlife protection and livestock water developments (see Design Feature 10).
- The combined impacts of (1) new and existing enclosure fences and (2) new and existing allotment division fences would be expected to increase the potential for wildlife conflicts within the GU. Both steel and wooden fence posts provide elevated raptor hunting perches which may increase the incidence of sage-grouse mortalities. Bird species often seek out riparian habitats during late brood-rearing because of the succulent green forage plants available. Furthermore, birds may collide with fences, often resulting in either injury or death. Pasture fences may present new collision hazards or obstacles to big game freedom of movement. In spite of these potential adverse consequences, new and existing fencing impacts would probably not substantially threaten bird populations or substantially hinder big game freedom of movement within the analysis area.

- Shrub-related wildlife habitat values would not change as a result of BLM action. Most of the allotment would continue to provide shrub-based forage, cover, and structure values important to sage-grouse and many other animals that occupy sagebrush habitats. Remaining grassland habitat types would be expected to support species such as American pronghorn and horned larks that prefer low habitat structure.
- Alternative 3 reduces available livestock AUMs and changes seasons of use and rotations; therefore, promoting recovery of grasses and shrubs and forbs currently weakened by improper grazing use.
- Grass and forb forage availability for wildlife would likely improve under Alternative 3. But more importantly, the structure, health, and distribution of deep rooted perennial grasses and forbs would likely improve. Thus, habitat quality would be enhanced because vigorous grasses and forbs provide important lateral and overhead cover associated with successful sage-grouse nesting efforts. There is no guarantee that Alternative 3 improved habitat conditions would result in higher numbers of sage-grouse and/or habitat. However, the potential for enhanced sage-grouse recruitment and survival would definitely improve in contrast to current management. This alternative would allow the allotment to make significant progress toward meeting standards for healthy rangelands.
- BLM grazing management actions would not fully maximize protection of sage-grouse habitat values, but the potentially harmful impacts of further degradation of grasses and forbs caused by current livestock use would be diminished. Careful attention would have to be taken in riparian areas to assure utilization standards are not exceeded.
- Because of gap fencing and long-term adjustment to the timing, intensity, and season of current livestock grazing use, Alternative 3 would be expected to gradually improve riparian wildlife habitat quality, structure, and plant composition.
- Alternative 3 juniper control and grazing adjustments in Lost Basin would be expected to protect and gradually improve aspen community conditions for wildlife as described in Alternative 2. Long term replacement of aspen habitat with juniper woodland habitat would be avoided and BLM authorized grazing use would likely allow aspen reproduction to occur.

Cumulative Effects - All Alternatives

Alternative 1 cumulative impacts expected would be (1) improper grazing use practices, (2) missing wildlife escape ramps in livestock water troughs, (3) juniper encroachment in Lost Basin aspen communities, and (4) weakened upland and riparian areas attributable to current grazing use would result in failure to meet management objectives for wildlife in Pedro Mountain GU.

Alternative 2 cumulative impacts expected would be (1) adjusted grazing use practices, (2) installation of wildlife escape ramps in livestock water troughs, (3) remedial action taken to halt juniper encroachment in Lost Basin aspen communities, and (4) a required grazing rest period prior to initiation of new grazing systems would result in improvement of weakened upland and riparian areas. Although the cumulative effects of current and existing fence hazards would increase because of the construction of about seven miles of new fence, it is likely that the potential adverse impacts would not (1) substantially limit big game movement or (2) cause an extraordinary amount of new wildlife mortalities due to collisions or predator losses. Of all the alternatives considered, the combined beneficial effects of Alternative 2 actions would best meet wildlife management objectives in the Pedro Mountain GU.

Alternative 3, the BLM proposed action, the cumulative impacts expected would be (1) adjusted grazing practices, (2) installation of wildlife escape ramps in livestock water troughs, (3) remedial action taken to halt juniper encroachment in Lost Basin aspen communities, and (4) gradual improvement in weakened upland and riparian areas would result in substantial attainment of management objectives for wildlife in Pedro Mountain GU. Although the cumulative effects of current and existing fence hazards would increase because of the construction of about 7 miles of new fence, it is likely that the potential adverse

impacts would not (1) substantially limit big game movement or (2) cause an extraordinary amount of new wildlife mortalities due to collisions or predator losses.

3.7 Rangeland/Grazing Use

3.7.1 Land Use Plan Management Objectives

- *Restrict livestock grazing through seasons of use, utilization levels, and livestock numbers and distribution.*
- *Restrict livestock grazing for three to five growing seasons on all range rehabilitation projects.*
- *Exclude livestock grazing along identified stream segments, bogs and spring overflows where use is incompatible with riparian management problems.*

3.7.2 Affected Environment

Summit Spring

The Summit Spring Allotment (#1072) is one pasture of 975 acres of public land. The ten-year permit shows 358 active AUMs between the dates of 10/5 and 11/30, but it states that actual use would be made according to the allotment management plan. The allotment management plan (AMP) for many years has been two years of fall use followed by two years of spring use (April 20 to June 15), and the lack of a spring use period on the ten-year permit was an oversight which needs to be corrected. Riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of Shirrtail Creek.

Rye Valley

The Rye Valley Allotment (#1037) has 1840 acres split into two pastures. Each pasture was evaluated separately. The amount of active use allowable under the ten-year permit is 263 AUMs public land plus 11 AUMs private land for a total of 274 AUMs (96% public land), within the dates of 10/20 to 11/28. But spring use (4/16 to 5/25) was also specified under the 1984 AMP (which called for two years spring use followed by two years fall use), and the lack of spring use dates on the ten-year permit was an oversight which needs to be corrected. The existing ten-year permit, although giving only the fall use dates, states that the actual use would be in accordance with the AMP. The allotment however is not easily usable as a fall allotment, and the last time it was scheduled for fall use was 1996. In the fall, cattle would not stay in the uplands and instead try to get into the hayfields at the lower edge of the allotment. During the last several spring use periods, the goal has been to get the cattle off the range early enough in May to allow some regrowth in late spring. Riparian and water quality standards (Standards 2 and 4) were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of Brown Draw in the East Pasture and North Fork of Dixie Creek (or tributaries) in the West Pasture. Standards 1 and 5 were also not met in the East Pasture, so additional objectives are to increase ground cover and increase Idaho fescue or bluebunch wheatgrass in this pasture.

Upper Shirrtail Creek

The Upper Shirrtail Creek Allotment (#1024) is an allotment consisting of one pasture of 485 acres public land plus 220 acres private land. The active allowable use under the ten-year permit is 111 AUMs on public land plus 22 AUMs private land, for a total of 133 AUMs (83% public), to be used within the dates of 5/1 to 10/13. The actual use has been alternating spring use (June) with fall use (October) every other year. Riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of Ray Creek.

Dixie Creek

The Dixie Creek Allotment (#1020) consists of 4078 acres (public and private) split into two pastures. Each pasture was evaluated separately. The active grazing preference for the whole allotment, as shown on the ten-year permit, is 404 AUMs on public land plus 115 AUMs on private land, for a total of 519 AUMs (78% public land), within the dates of 5/1 to 10/13.

Management has been alternating spring use and fall use, every other year, typically June use one year and October use the next year.

	Total <u>Acres</u>	Public Land <u>Acres</u>	<u>Predominant Elevations (feet)</u>
Upper Pasture	2009	1330	4400-5900
Lower Pasture	2069	1418	3080- 4800

Riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of Deer Creek.

Bowman Flat

The Bowman Flat Allotment (#1021) is a small allotment consisting of one pasture of 386 acres. The active use allowable under the ten-year permit is 65 AUMs on public land plus 18 AUMs on private land, for a total of 83 AUMs (78% public land), within the dates of 5/10 to 7/9.

Rattlesnake Gulch riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of Poor's Creek. Standard 3 was also not met, so additional objectives are to increase ground cover and increase bluebunch wheatgrass.

Rattlesnake Gulch

The Rattlesnake Gulch Allotment (#1023) is an allotment consisting of one pasture of 703 acres, of which 405 acres are public land. There is no longer a fence between this allotment and Dixie Creek Allotment #1020, so for the last decade or so, these allotments have been grazed together. The allowable amount of use under the ten-year permit is 92 AUMs on public land plus 61 AUMs on private land, for a total of 153 AUMs (60% public land), to be used within the dates of 5/1 to 10/22. The actual management has been alternating spring and fall use, typically June one year and October the next year. Riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of Rattlesnake Gulch.

French Creek

The French Creek Allotment (#1032) consists of 947 acres of public land and 1128 acres of private land. Currently the grazing preference on public land is set at 143 AUMs and the private land is credited for 183 AUMs, for 44% public lands. It has been categorized as a "C" allotment and annually licensed with seasons and numbers not restricted as long as abuse to the public land does not occur. Riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of French Creek. Standards 1 and 5 were also not met, so additional objectives are to increase ground cover and increase composition of Idaho fescue or bluebunch wheatgrass.

Hollowfield Canyon

The Hollowfield Canyon Allotment (#1030) is a small allotment consisting of one pasture of 250 acres public land and 351 acres private land. The amount of allowable active use under the ten-year permit is 42 AUMs on public land plus 50 AUMs on private land for a total of 92 AUMs (46% public land), within the dates of 6/22 to 8/21. Riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of Hollowfield Creek.

North Dixie Creek

The North Dixie Creek Allotment (#1026) consists of 3246 acres split into two pastures. Each pasture was evaluated separately. The active grazing use allowable under the ten-year permit is 193 AUMs on public land plus 300 AUMs on private land, for a total of 493 AUMs (39% public land) within the dates of 6/1 to 11/30. Management has been alternating spring use and fall use, every other year, typically June use one year and October use the next year.

	Total <u>Acres</u>	Public Land <u>Acres</u>	<u>Predominant Elevations (feet)</u>
Upper Pasture	1206	318	3900- 5400
Lower Pasture	2040	754	3300- 4500

Riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of North Fork Dixie Creek.

Lost Basin

The Lost Basin Allotment (#1027) consists of 1523 acres of public land and 6314 acres of private land (as measured by GIS), and the allotment grazing capacity was calculated during adjudication as 281 AUMs public land and 1360 AUMs private land, or 17% federal range. It has been categorized as a “C” allotment and annually licensed with seasons and numbers not restricted as long as abuse to the public land does not occur. The Baker RMP/ROD identified 315 acres in this allotment for disposal, and this 315 acres includes the large aspen grove evaluated for Standard 5 as well as the range photoplots assessed for apparent trend. The riparian zones assessed for PFC were all on land specified for retention, however. Riparian and water quality standards were not met, so the objectives for this allotment are to improve streambank stability and vegetative composition along the greenline of Reagan Creek. Standards 1 and 5 were also not met, so additional objectives are to improve aspen reproduction and survival.

In the following grazing allotments, one or more rangeland health standards were not met, so proposed changes in management are being analyzed in this EA. The total active grazing preference in each allotment is listed as AUMs active, the estimated amount of private land AUMs (authorized as or eligible for exchange-of-use) are listed as AUMs private, and percent federal range is listed to show the proportion of forage in each allotment that comes from public lands (Table 14). All livestock authorized are cattle.

Table 14. Current total active grazing preference by allotment and season of use.

Allotment	AUMs Active	AUMs Private	% Federal Range	Period of Use on 10-Year Permit	Period of Use Under AMP or Grazing Plan
Summit Spring #1072	358	0	100%	10/5-11/30	4/20-6/15, 10/5-11/30
Rye Valley #1037	263	11	96%	10/20-11/28	4/16-5/25, 10/24-11/30
Upper Shirttail Cr. #1024	111	30	79%	5/1-10/13	6/1-6/30, 10/1-11/1
Dixie Creek #1020	404	115	78%	5/1-10/13	6/1-6/30, 10/1-11/1
Bowman Flat #1022	65	18	78%	5/10-7/9	NA
Rattlesnake Gulch #1023	92	61	60%	5/1-10/22	6/1-6/30, 10/1-11/1
French Creek* #1032	155	170	48%	*	NA
Hollowfield Canyon #1030	42	50	46%	6/22-8/21	NA
North Dixie Creek #1026	193	300	39%	6/1-11/30	6/1-6/30, 10/1-11/1
Lost Basin* #1027	281	1360	17%	*	NA

* = “C” category allotments which have been authorized as seasons and numbers not restricted.

NA= Not Applicable

The above allotments are split between four different grazing permittees, and all are individual allotments (none are common-use allotments). Five of these allotments are used by one permittee, three are used by another permittee, and two other permittees have one each. All permittees move cattle from one allotment to another in different sequences each year, and all have allotments in other GUs that are not being analyzed in this EA, so completely describing each permittee’s annual grazing operation is beyond the scope of this EA.

Evaluations of each allotment, based on 2006 field inspections and other available information, were completed in 2007 to determine whether rangeland health standards were being met. These evaluations are available for inspection at the Baker Resource Area office.

In Table 14, the ten-year permit describes the basic use in each allotment, and does not show variation from year to year. But the authorized use periods actually do vary from year to year where allotment management plans are in place. The permits state that actual use will be in accordance with the 1995 grazing plan agreements or AMPs. Therefore, the period of use under the AMP or grazing plan is the one actually followed in the yearly grazing authorizations. As previously explained in the allotment evaluations, the ten-year permits for Summit Spring and Rye Valley allotments were erroneously printed with the spring use periods missing, although the AMP clearly called for alternating periods of spring and fall use, as do most of the grazing plans for the above allotments. Changing the dates on the ten-year permit is an action included in all alternatives including the no action alternative.

Since 1995, field observations by BLM personnel confirm that switching to spring-fall use in these allotments, going to shorter periods of use and eliminating the hot season grazing, has resulted in many upward trends overall, especially exhibited by increases in willows in the riparian zones and upward trends shown in trend plots.

However, the rangeland health standards still are short of being met in the above allotments, and the actions detailed under the Alternative 3 are what have been recommended (in the allotment evaluations) to encourage additional progress towards meeting the standards. The results of the evaluations, where standards were met and not met, are shown in Table 1.

OTHER ALLOTMENTS IN THE PEDRO MOUNTAIN GEOGRAPHIC UNIT

The following allotments either met rangeland health standards, or else current livestock grazing was determined not a significant cause of failure to meet standards (Table 15). These allotments are included in the description of the affected environment but will not be included in the management changes analyzed in Alternative 3 because no changes in management are proposed.

Table 15. Other allotments in the Pedro Mountain GU that met rangeland health standards and are not considered in this EA.

Allotment	AUMs Active	Period of Use on Permit	Period of Use Under AMP or Grazing Plan
Pedro Mountain #1021	552	6/1-11/30	7/1-9/30
Baldy Mtn. #1025	10	*	NA
Upper Cave Cr. #1028	27	*	NA
Shirttail Cr. #1031	152	4/22-5/21, 10/15-11/14	Same as on permit
Clough Gulch #1034	2	*	NA
Upper Clough Gulch #1035	35	*	NA
Spring Gulch #1053	7	*	NA
Mormon Basin #1318	780	6/1-9/9	Same as on permit

* = "C" category allotments which have been authorized as seasons and numbers not restricted.

NA= Not Applicable

3.7.3 Alternative 1

Grazing would continue at the same levels and according to the same schedules. In the short term, there would be no effect on livestock numbers or amount of use. Rangeland health standards currently not being met would probably continue to not be met, or progress towards meeting standards would be very slow. In the long term, over the next 5-15 years, the cumulative effects of continuing to fall short of rangeland health standards would possibly result in lowered grazing capacity and reductions in livestock use.

3.7.4 Alternative 2

Rangeland health would be expected to most quickly advance under this alternative, and significant progress would be made toward achieving standards, but even very small numbers of cattle are capable of heavily grazing riparian zones and other concentration areas. Attention would still have to be paid to moving cattle away from riparian zones, limiting their time in riparian zones, and continually repairing fences and rounding up cattle that get through gaps where fences do not exist (some of the allotments are not completely fenced). Permittees would still have the same amount of work in riding and project maintenance; rested pastures might still be grazed in unauthorized use if fences are not kept up and intruding cattle are not detected and removed promptly. At the same time, permittees would have to run fewer cattle or find alternative grazing land to replace the public land grazing that is not available during this period.

With the full number of public land AUMs being unavailable until standards are met, there would be an incentive for permittees to take actions to advance range recovery.

3.7.5 Alternative 3

This alternative would achieve significant progress toward achieving standards. It would help to improve rangeland management by keeping utilization levels light or moderate, periodically deferring grazing until the plants have completed growth for that year, obtaining better cattle distribution, and gaining better control over cattle through additional fences. A smaller number of cattle AUMs would be available for use in the Dixie Creek and Rattlesnake Gulch allotments. The French Creek Allotment would no longer be authorized as seasons and numbers unrestricted, and dates of use and numbers of cattle on this allotment would be regulated. Requiring that cattle be moved when utilization triggers are reached in autumn would be likely to result in moving cattle home to private land sooner than has been the case in the past. During the growing season, requiring that cattle be moved sooner than scheduled, due to reaching utilization triggers, would mean grazing the next allotments/pastures in the rotation earlier than scheduled. The same situation would occur when use in a pasture is limited to exchange-of-use as a penalty for exceeding utilization targets two years in a row: due to the reduced period of use in that pasture, some other pasture might have to be entered early. Thus, additional flexibility in the pasture rotation schedules would be imposed by Alternative 3, but the total period of livestock use on public lands each year (all allotments added together) would be shorter than the current period. Some allotments/pastures would receive less deferral than the existing management calls for. Utilization levels would be deemed more important than deferring until a certain date or growth stage. For a summary of Alternative 3 actions, refer to Table 16.

Table 16. Alternative 3 summary of changes in management actions.

Allotment Name and Number	% Federal Range	Standards Not Met Due to Livestock	Alternative 3 Actions
Summit Spring #1072	100%	2	<ul style="list-style-type: none"> utilization triggers and limits ensure project maintenance alternate between spring and fall use
Rye Valley #1037	96%		
East Pasture		1, 2, 3, 5	<ul style="list-style-type: none"> utilization triggers and limits specify 215 public AUMs change season of use from 10/28-11/28 to 4/23-5/31, 11/1-12/9
West Pasture		2, 4	<ul style="list-style-type: none"> utilization triggers and limits specify 48 public AUMs change season of use from 10/28-11/28 to 6/1-6/30, 10/1-10/30
Upper Shirttail Cr. #1031	79%	2,4	<ul style="list-style-type: none"> utilization triggers and limits ensure project maintenance change season of use from 5/1-10/13 to 6/1-6/30, 10/1-10/31
Dixie Creek #1020	78%	2, 4	<ul style="list-style-type: none"> utilization triggers and limits construct gap fence reduce AUMs from 404 to 343 alternate between spring and fall use
Bowman Flat #1022	78%	2, 3	<ul style="list-style-type: none"> utilization triggers and limits riparian enhancement alternate between spring and fall use
Rattlesnake Gulch #1023	60%	2, 4	<ul style="list-style-type: none"> utilization triggers and limits construct new fences reduce AUMs from 92 to 55 reduce exchange-of-use AUMs from 61 to 48 alternate between spring and fall use
French Creek #1032	48%	1, 2, 3, 4, 5	<ul style="list-style-type: none"> utilization triggers and limits construct new fences change from unrestricted use to established season of use, spring and fall
Hollowfield Canyon #1030	46%	2	<ul style="list-style-type: none"> utilization triggers and limits riparian enhancement change season of use from 6/22-8/21 to maximum of 6 weeks within 9/16-11/30
North Dixie Creek #1026	39%		
Lower Pasture		4	<ul style="list-style-type: none"> utilization triggers and limits ensure project maintenance construct new fence change season of use from 6/1-11/30 to 6/1-6/30, 9/28-12/16
Upper Pasture		2, 4	<ul style="list-style-type: none"> utilization triggers and limits ensure project maintenance construct riparian enclosure change season of use from 6/1-11/30 to 6/1-6/30, 9/28-12/16
Lost Basin #1027	17%	2, 4, 5	<ul style="list-style-type: none"> aspen and juniper treatments construct spring enclosures Upper Reagan Creek season of use from 6/1-7/10

3.1 Noxious Weeds

Land Use Plan Management Objectives

*Infestations of noxious weeds are known to occur on some public lands in the planning area (refer to Figures 2 and 3 in the Baker RMP). The most common noxious weeds are diffuse [*Centaurea diffusa*], spotted [*Centaurea stoebe*] and Russian knapweed [*Centaurea repens*], yellow starthistle [*Centaurea solstitialis*], Canadian thistle [*Cirsium arvense*], and yellow leafy spurge [*Euphorbia escula*]. Control methods will be proposed and subject to site specific environmental analyses consistent with the Record of Decision on BLM's Northwest Area Noxious Weed Control Program EIS and EIS Supplement. Control methods will not be considered unless the weeds are confined to public lands or control efforts are coordinated with owners of adjoining infested non-public lands. Proper grazing management will be emphasized after control to minimize possible reinfestation. Coordination and cooperation with county weed control officers will continue on a regular basis.*

There are no specific noxious weed objectives for the Pedro Mountain GU other than as they relate to Upland, Forestland, and Riparian Vegetation Resource Condition Objectives.

3.1.1 Affected Environment

An intensive inventory for noxious weed species has not been conducted; however, there are several known sites in several of the allotments within this GU. At this time diffuse knapweed, whitetop (*Cardari draba*), and Scotch thistle (*Onopordum acanthium*) are the only known species of concern and these are lower priority than other weed species found elsewhere in the BRA. The potential spread of noxious weeds into riparian areas is a concern and threat to the ecological health of the area.

Current treatment methods include hand pulling on small sites when appropriate and spot treatments in the spring and fall with herbicides approved for use on BLM lands in Oregon on the species being treated. In 1984 the "Western Oregon Program Management of Competing Vegetation EIS" was appealed which resulted in a court-ordered injunction that prohibited the use of all herbicides on all BLM-administered lands in Oregon. The U.S. District Court (1987) modified the injunction to allow the BLM to use only four herbicides and only for the treatment of State, County, or Federally listed noxious weeds.

Whitetop

Whitetop is increasing primarily along roadsides in the French Creek, Rye Valley and Summit Springs Allotments. Due to the existing court injunction, the herbicides of choice for use on perennial mustards such as whitetop are not available for use on public BLM lands in Oregon. Present treatments with the herbicides available are more of a holding action. At this time, we are only treating isolated small new infestations with the herbicides that are available in an attempt to slow the spread of whitetop.

Scotch Thistle

Small scattered sites of this common biennial can be found in each allotment. Scotch thistle is often found on disturbed sites such as loafing areas and in draw bottoms near watering areas. Treatment has not been consistent except immediately along primary road systems.

Diffuse Knapweed

Populations of this annual fluctuate each year in this GU. It is found in the French Creek and North Dixie Creek Allotments. Acreage is limited to approximately 2 acres total. Occasional chemical treatment occurs and evidence of damage by beetles is present though no actual releases of biocontrol agents have been made in this area, but beetles may exist and would help hold populations in check.

3.1.2 Alternative 1

Implementation of Alternative 1 would allow management of existing noxious weed sites and would continue with new sites treated as they are identified and priorities allow. Observed downward trends in upland and riparian vegetation are likely to continue as plant vigor is suppressed. Reduced vigor in desirable plants would foster the establishment of undesirable plants, particularly noxious weeds which over time would compromise the sites' ability to meet Standard 3.

3.1.3 Alternative 2

Lighter utilization levels and rest from cattle grazing under this alternative would allow for the increase in vigor of desirable native species. These plants would be able to maintain site integrity and compete better with weeds that do try to establish. Management of existing noxious weed sites would continue with new sites treated as they are identified and priorities allow. This alternative would be likely to increase the possibility for meeting Standard 3.

3.1.4 Alternative 3

The ability in this alternative to adjust and control periods of use would result in an increase in vigor and abundance of desirable native species. Overall use would be lighter than in Alternative 1 and better regulated. Adjustments in periods of use could be made to favor the growth of desirable plant species and discourage the growth of weeds. Increased vigor and abundance in desirable plants would allow them to compete better with weeds that do try to establish. Management of existing noxious weed sites would continue with new sites treated as they are identified and priorities allow. These actions would likely result in being able to meet Standard 3.

Cumulative Effects all alternatives

Noxious weed management is an ongoing activity and would continue under all of the alternatives. Over time, both Alternatives 2 and 3 would require less weed management as desirable plants increase in vigor and become more competitive. Lighter utilization levels and/or rest from grazing alone would not be as beneficial to long term weed management as would being able to adjust the season of use as prescribed under Alternative 3. Under Alternative 3 we would be able to adjust the period of use to discourage the vigor of weed species that are already present as well as adjust to discourage weed species that may become introduced and establish in the future.

3.2 Recreation, Off-Highway Vehicles (OHV), Wilderness and Visual Resources

3.2.1 Land Use Plan Management Objectives and Activity Plan Objectives

As identified in the Baker Resource Management Plan Record of Decision (July 1989), the Management Direction for Recreation is to "Provide or enhance recreational opportunities for hunting, fishing, swimming, floating, boating, hiking, and sightseeing."

3.2.2 Affected Environment

The Pedro Mountain GU consists of a wide variety of changing views ranging from arid uplands, forested stringers and pockets, and canyon slopes with basalt outcroppings adjacent to entrenched riparian draws. This variety provides visitors with an ever changing view from simple desert sage-brush to covered mountain slopes. Although not unique to eastern Oregon, the area does consist of enough acreage to provide for a modest physical landscape change over the planning area that benefits scenic enjoyment.

Recreation opportunities in the Pedro Mountain area include dispersed camping, hunting (upland bird/big game), scenic viewing, horseback riding, hiking, and some OHV use. The uses in the planning unit vary widely, but it is believed that sightseeing and hunting are the primary recreational activities in this area.

The southern end of the planning area contains a portion of the Snake River/Mormon Basin Backcountry Byway. This Byway begins in Baker City, Oregon, travels east then south along the Brownlee pool of the Snake River, crosses back to the west through the Rye Valley/Mormon Basin area, over Dooley Mountain

and back to Baker. Of the entire journey along the Byway, it is the section that occurs within the planning unit that gives travelers a “primitive” sense of the area and of their journey as well as containing some of the most scenic views on the Byway.

Recreation use data for the area is limited as uses in the area seasonal in nature and “dispersed” except for the use along the Byway. This “dispersed” use, which consists of recreational pursuits in areas that have no developed recreation facilities or activities, occurs randomly throughout the planning area.

Recreational uses of the area are highly dependent on the weather patterns of eastern Oregon as well as in conjunction with established hunting seasons and access. Rain, cold, and drought conditions cause significant fluctuations in recreational activities seen in the Pedro Mountain GU. Peak recreation use occurs primarily in the early summer and fall of the year beginning in April through late November. These dates coincide with those times of the year that the area can be accessed by vehicle after snowmelt, and the established Oregon hunting seasons.

Public access to the area is good with legal access to different portions of the BLM lands existing via county and BLM road systems. The area is designated as “Open” for OHV uses, and random trails have developed throughout the planning area. The northern end of the planning area does come up against the Burnt River “limited” OHV designation, but this planning unit does not cross into that designation. Most of the OHV trails that have been created are a direct result of hunting pressure in the area along with some recreational OHV use. However, there are no BLM designated or maintained OHV trails within the Pedro Mountain Planning area.

The quality of the recreation opportunities in the Pedro Mountain GU is closely linked to the amount of use occurring within the area at any given time. Although there is a large amount of acreage associated with the unit, the amount of motorized use via roads/trails/ways in the area detracts from pristine feelings of “solitude” for those users interested in a more undisturbed remote outdoor experience. However, the large block of BLM ownership does provide for good hunting opportunities of upland bird and big game species as well as potential for remote OHV travel, sightseeing, and camping. Some roads and trails for recreational “point-to-point” travel do exist within the area, however most of the trails that exist dead end at some point on their route. The OHV trail system that currently exists is a series of informal pathways that have been developed by random motorized travel over time in conjunction with the establish county and BLM identified road systems.

3.2.3 Alternative 1

If Alternative 1 is implemented, the recreation resources existing within the Pedro Mountain GU would remain as they currently exist. Recreational activities including hunting, hiking, horseback riding, and OHV use, along with all other forms of dispersed recreation on public lands are strongly driven by the aesthetics, quality, quantity, diversity and condition of an area’s resources. In the Pedro Mountain area, the recreation use under alternative 1 would continue to occur as it has in the past with little or no increase in the quality/quantity or diversity of the various resources that affect recreational opportunities. If these supporting resources decline or degrade from the current condition, a direct correlation in the amount of recreational use would also be seen.

3.2.4 Alternative 2

Alternative 2 would result in improvement to the condition of the area’s resources and would begin to slowly enhance the variety and quality of the recreational experience of the area as well as improving the general view and aesthetics to the casual observer. As the overall condition of the area resources improve, such as vegetation, the associated effects also begin to improve. For instance, improved vegetation quality, quantity and diversity improve the visual “attractiveness” of an area. This in turn results in an increase opportunity and desire for recreational viewing, hiking and even camping. Under this alternative, the anticipated improvement to the various resource conditions of this area would be noticed over time and would benefit the recreational use by creating more diverse opportunities as well as improved recreational quality which would thereby attract visitors

3.2.5 Alternative 3

The impacts under this Alternative would be expected to be the same as in Alternative 2 in regards to the recreational experience and eventual aesthetic change to the area. However, the improvements to the recreational opportunities of the area are anticipated to occur at a slower rate than under Alternative 2. Some impacts would occur to dispersed uses such as horseback riding, OHV use and hiking due to the installation of fences which might cut off some of the random trails that have developed in the planning area over time. However, it is expected that the impacts to these recreational pursuits would be minimal.

Recreation Impacts Common to all Alternatives

Visual Resources:

The Pedro Mountain GU was identified in the Baker RMP as consisting of Class III and IV Visual Resources. Class III Visual Resource Management (VRM) areas are “Primarily for areas considered important from an aesthetic view point. Not necessarily outstanding scenery.” Within class III areas, “project work can be seen from travel routes, but cannot be the focal point on the landscape.” Class IV designation is defined as “Primarily for general scenic landscapes throughout much of BLM,” and “Project work within a Class IV area can be a focal point on the landscape to the casual visitor (Baker RMP pg. 49).”

The Pedro Mountain GU borders the Class II VRM designation for the Burnt River Canyon. However, no action proposed in this EA would impact either the VRM designations for the Pedro Mountain GU or the Burnt River Canyon adjacent to the planning area.

Cumulative Impacts Recreation:

There are no anticipated cumulative impacts expected on the recreational use of the Pedro Mountain GU under any alternative. Recreational uses of the area would continue with all of the alternatives as it has in the past. Implementation of any alternative would either keep the areas recreation quality and diversity at the current level, or would improve the various resources thereby improving the recreational opportunities available. The rate of speed at which improvements to the quality, quantity or diversity of recreational experiences in the GU occur would depend on which alternative is chosen and the resource improvement rate that particular alternative offers, thereby attracting visitor use.

3.3 Human Uses and Values (Socio-economic Impacts)

3.3.1 Land Use Plan Management Objectives

The Baker RMP (USDI 1989) provides direction to continue to authorize grazing permits/leases while restricting or excluding grazing in areas where livestock use results in significant resource damage (p. 14).

3.3.2 Affected Environment

These ten grazing allotments currently have authorized cattle use. Assessment of the rangeland health standards has indicated one or more of the five standards are not being met in these allotments. Current BLM regulations and guidance direct the BLM to make changes to livestock management in areas where standards are not being met. There are currently four different permittees grazing livestock within these allotments, and the implementation of changes in management would affect one or more of the permittees.

Three of the four grazing permits are held by local family-owned and managed livestock operations. The largest permit is currently leased to a local operation but the base property is owned by an out of state individual. For smaller family operations, economic setbacks or other production limitations may greatly

challenge their ability to remain viable and a part of the community in which they choose to live. The livestock industry is not alone in facing potential changes to preferred lifestyles and ways of generating income. The same type of economic pressures and concerns about maintaining a way of life that are affecting permittees, are also affecting other commodity producers and businesses.

Aside from the AUM changes described in this EA, ranch viability (e.g., sustainable ranching operations capable of supporting families and paying for necessary additional help) would likely be influenced by factors beyond BLM control. These factors may involve livestock price fluctuations, foreign competition, transportation and fuel costs, public land forage limitations due to drought, winter livestock feeding costs, private pasture rental fees, and other similarly unpredictable factors. These and other factors have already been affecting Baker County agriculture, as can be seen in the USDA “2002 Census of Agriculture for Baker County” (USDA 2002). According to this census, from 1997 to 2002, the number of farms decreased 7%, the land in farms decreased 9%, the average size of farms decrease 2%, and the market value of production decreased 8% in Baker County. The market value of production figures includes both crop and livestock sales with livestock sales accounting for approximately 76% of the total. The census also indicates that almost 72% of the farmland in Baker County is for pasture, with approximately 17% in cropland and about 10% in woodland, and less than 1% in other uses, further highlighting the importance of the livestock industry to Baker County.

Although small or corporate classes of livestock operations both contribute social and economic benefits to eastern Oregon, economic challenge to smaller family operations is probably most likely to harm the social fabric of small communities such as Durkee and Huntington. This would be especially true if permittees were forced to leave the area because of financial stress. Family operations are typically of great importance to county governments and even to some of the general public. BLM is concerned about and aware of the potential socio-economic consequences of grazing permit actions. Nevertheless, permit renewal decisions in this analysis area must balance the need to reasonably support the social fabric and economies of small communities as well as maintain the public land natural resource base upon which the livestock industry relies. Thus, BLM decisions must be crafted in light of the public land’s capacity to support livestock herds. And where the livestock carrying capacity is limited by rangeland site potential or where studies indicate that AUMs need downward adjustment, BLM is compelled by law and by federal regulation to take actions that would result in sustainable grazing use and functioning rangelands, according to the S&Gs and 43 CFR§4180.

Government-issued permits to graze livestock on public land are an important factor of production for sheep and cattle ranchers in the West. Approximately 22% of western cattle producers and 19% of western sheep producers hold federal permits from the BLM or the USFS (USDI 1994). The permits are linked to privately-owned base property and enhance the productive capacity of private property by providing additional forage during certain seasons. This allows for rest, or production of hay or other forage on private property. A common practice is to produce alfalfa or grass hay on irrigated pastures during the summer when cattle are on public rangeland.

Ranch value and borrowing ability are usually based on cash flow. With additional production capacity, holders of federal permits often increase ranch value and borrowing ability. These values often persist when the base property is sold or passed on to heirs since historically, permits are reissued to the new owner of the base property. Although holding a federal permit can create additional cash flow and wealth for individual ranchers, permits have no legally recognized value as private property. Terms and conditions of permits are commonly changed, especially at times of re-issuance or renewal. Changes in the timing and amount of permitted grazing would affect individual ranchers.

Limitations to BLM Socioeconomic Impact Estimates and Assumptions

BLM has no access to individual permittee financial records. Further, the Vale District BLM does not intend to request financial records from ranchers for socio-economic analysis purposes. Consequently, this EA section estimating socio-economic impacts to permittees would only address 1) AUM changes, and 2) increased or decreased rangeland project maintenance costs.

Because BLM cannot conduct a thorough and accurate analysis of how permitted AUMs may affect individual ranchers economically, it is also not possible to predict accurately the consequences to ranches

under AUM reductions even if those reductions are temporary over one to several years as proposed under Alternative 2. This may or may not lead to existing ranches becoming economically unviable. The BLM also assumes that if existing ranches fail, some other corporation or individual may step in to purchase the base property and grazing privileges. It is not possible to foresee which base properties, if any, may change out of livestock production and into some other form of business. In the event that they do remain active for livestock production, the industry as a whole would continue to exist in and around the communities of Durkee and Huntingon, but under different ownership and likely with reduced income.

Permanently reduced ranch income following base property sale may not be a certainty for several reasons:

- There may be avenues for supplementing livestock-generated income from ranch properties and adjoining public lands that have not been explored by existing permittees.
- There may be other opportunities possible that would allow permittees to remain within the community, but due to their nature, are unacceptable. Examples may include dude ranches, bed and breakfasts, or sale of hunting rights.
- Base property purchasers may not be under the same financial burden or income demand currently affecting existing permittees. Thus, reduced income may not necessarily mean conversion of base property away from livestock production.
- Reduced livestock herds do not always result in insufficient income generation over the long term. Some permittees in the county choose to run reduced livestock numbers and they still make adequate profits derived from increased livestock weight gains instead of relying upon higher livestock numbers or AUMs.

It is important to note that BLM is directed by the Taylor Grazing Act to take actions that will stabilize the livestock industry that is dependent upon public rangeland forage. In light of the Vale Project and other rangeland development actions taken over the last 40 years, the Vale District BLM has gone the extra mile to meet this goal of stabilizing the industry. However, it may not be possible for Vale BLM to guarantee that every existing livestock permittee would survive as an economic unit or in a manner to which existing ranchers are accustomed. Where substantial downward AUM adjustments are necessary to meet the objectives for livestock grazing management in the Baker RMP and the S&Gs in conformance with 43 CFR § 4180, some permittees would conceivably be forced into sale or lease of their base properties.

In conclusion, however, none of the proposed actions covered by this EA would cause significant adverse affects for the grazing permits. All four operations would still remain economically viable under the three alternatives.

3.3.3 Alternative 1

This alternative would result in little or no economic disruption to the permittees ranching operations in the short term. Since current management is not achieving one or more rangeland health standards, it is reasonable to assume that over time authorized AUMs may need to be reduced if monitoring shows that the utilization standards and rangeland health standards cannot be achieved with the current level of AUMs, which would result in economic impact in the long term (3 years or more).

3.3.4 Alternative 2

This alternative would result in short term economic effects to the permittees' ranching operations in the form of reduced numbers of cattle or increased costs for finding and using alternative grazing areas due to the temporary loss of 1,683 AUMs each year until standards are met. An additional short term impact would be the costs incurred for the new projects proposed as listed in Alternative 3. The long-term impacts would be similar to the long-term impacts described in Alternative 3 except they might occur at a faster rate due to the initial period of grazing rest aiding in quicker recovery.

3.3.5 Alternative 3

This alternative would result in short-term economic impact to the permittees' ranching operations. This would be due to the costs associated with those proposed projects that permittees would be responsible for the construction and/or material costs. Long term impacts would be beneficial in meeting objectives and maintaining a stable herd size as progress towards meeting rangeland health standards occurs.

Socio economics Cumulative Effects

Cumulative effects to socio-economics would include additional reductions in AUMs or season-of-use if utilization standards are not met. For permittees who graze in other BLM allotments, if standards are also not being met in these allotments, further impact to permittees ranching operations may occur such as reducing herd size, increasing grazing time on private land, and/or increased feeding.

3.4 Cultural Resources

3.4.1 Land Use Plan Management Objectives

The Baker RMP (1989) indicates the following for cultural resources:

Resource Condition Objective.

Protect and preserve cultural resources for their information potential and public values. Maintain historic properties for interpretation of mining and settlement.

Allocation.

Identify uses for specific cultural properties in activity plans. Restrict the location of disturbing activities to avoid impact to cultural properties.

Management Action

Inventory and evaluate cultural properties in response to project proposals and management actions.

Evaluate historic mining properties for National Register nomination.

3.4.2 Affected Environment

The Pedro Mountain GU is located in the Blue Mountains physiographic province, at the northern end of the region usually associated with the Northern Paiute who inhabited much of eastern Oregon. At the time of early historic contact, the mountainous areas and valleys were occupied and used, on a seasonal basis, by tribes of the northern Great Basin and southern Columbia Plateau areas. The Northern Paiute had trading and kinship ties with the Shoshone and Bannock to the east, and overlapping seasonal subsistence ranges with neighboring tribes (Walker 1998). Descriptions of the ethnographic lifeways of the Northern Paiute, Northern Shoshone and Bannock are provided in several publications (Fowler & Liljeblad 1986, Steward & Wheeler-Voegelin 1974, Murphy & Murphy 1986). According to Blyth (1938), Northern Paiute known as "Salmon Eaters" inhabited the Malheur River and other Snake River tributaries, and a group referred to as "Elk Eaters" exploited the vicinity of Prairie City and Baker City. The Paiute traveled as far as Baker City in their seasonal round (Blyth 1938). Steward and Wheeler-Voegelin 1974 refer to the Snake River, Burnt River and Powder River as a thoroughfare for the Paiute, mounted Shoshone and Bannock who traveled to the Snake River to fish, and to the Grande Ronde valley to trade with Nez Perce and Cayuse. According to the Confederated Tribes of the Umatilla Indian Reservation, the CTUIR area of traditional use includes the Pedro Mountain GU.

Many species of plants, terrestrial game and fish were important in the subsistence, lifeways and economy of the tribes. Important terrestrial animals hunted by various tribes included bison (during precontact times), deer, elk, mountain sheep, pronghorn antelope, game birds, and small mammals such as rabbits and marmot. Anadromous and resident fish formed an important part of the diet. Some important plants included root crops of lomatiums (*Lomatium sp.*), yampah (*Perideridia gairdneri*) and bitterroot (*Lewisia rediviva*); and fruit plants such as serviceberry (*Amelanchior alnifolia*), chokecherry, currant (*Ribes sp.*), hawthorn (*Crataegus douglasii*), and elderberry (*Sambucus sp.*). Important terrestrial animals hunted by various tribes included bison (during precontact times), deer, elk, mountain sheep, pronghorn antelope, game birds, and small mammals such as rabbits and marmots. Anadromous and resident fish formed an important part of the diet. BLM is not aware of any current tribal use or sacred

sites in the analysis area, nor aware of any specific subsistence locations where tribal members presently procure traditional plants, fish or hunt game in the Pedro Mountain GU.

These and other traditional foods are still important to many tribes today. The Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Department of Natural Resources states, "(Our) mission is to ensure that the First Foods are protected, restored, and enhanced for the perpetual cultural and economic benefit of the CTUIR. The First Foods - water, salmon, deer, cous, and huckleberry - represents a grouping of similar species, with salmon representing a variety of aquatic life forms e.g. steelhead, lamprey, freshwater mussels, and various resident fish, deer big game, cous plant bulbs, and the huckleberry representing fruiting plants. Each of the First Foods, and the right to harvest them, are explicitly protected in the Treaty of 1855. It is crucial for the Tribes to cooperatively manage the remaining federal land to maximize the health of the First Foods." It is the BLM's position that actions taken to meet or move towards meeting the rangeland health standards would in turn benefit the whole ecosystem including "First Foods" (personal communication, February 11, 2008).

The first written record of travel through the area was provided by Wilson Price Hunt, who crossed the Blue Mountain region on a journey from the Snake River to the Columbia in the winter of 1811-1812. Robert Stuart passed through the Burnt River canyon on his journey east in 1812. Fur traders Peter Ogden, John Work and Nathaniel Wyeth explored and trapped on reaches of the Snake, Burnt and Powder rivers in the 1820s-1830s. A sketch map prepared by William Kitson in 1824-1825 shows a route followed by fur traders along the Burnt river (Brule) canyon from the Snake River to the Durkee valley area, and then over hills to the Powder River. In August 1834, naturalist John Kirk Townsend traveled through the Durkee valley area with fur trapper Nathaniel Wyeth. Townsend wrote of an encounter with a family of Snake Indians (probably Northern Paiute people) who were camped on the Burnt River and from whom they obtained dried chokecherries.

At least 60,000 emigrants traveled over the Oregon Trail through the Burnt River and Durkee valley between 1843 and the 1860s. Gold was discovered on a Powder River tributary near Auburn in 1861, launching a rush to placer mines on the Burnt and Powder rivers. The route of the Oregon Trail from Farewell Bend to the Powder River valley followed the course of the Burnt River through the canyon where Interstate 84 is located today (Evans 1990). As early as 1866 transportation routes through the Burnt River canyon had been improved. The main wagon and stage route through the Burnt River canyon and up Alder Creek to Baker City had been established as a toll road in the early 1860s. It was improved in the 1860s-1870s to serve as a regular stage and travel route connecting the Umatilla Landing on the Columbia River to Baker City and Boise.

The Burnt River valley near Durkee was settled shortly after the Express Ranch was established as a stage station in 1862 along the route of the Baker-Boise stage road. A railroad was built from Huntington through to Baker City 1884. Placer gold mining attracted Euroamerican settlers to the area beginning with the discovery of gold at Griffin Gulch, followed by hundreds of discoveries throughout the Blue Mountain region. Gold was discovered in Rye Valley and Mormon Basin (also known as Humboldt Basin) in 1862 (Brooks 2007). Mining communities were quickly established at Rye Valley, Mormon Basin and Amelia. Streams, gulches, and hillside placer claims were worked by hand, hydraulic or later dragline methods. Hydraulic mining of Pleistocene bench placers in Rye valley had produced more than \$1 million by 1914. Between 1870-1874, portions of the El Dorado mining ditch were extended from Malheur City to a gulch east of Amelia City.

Census records show that around the 1870s-1880s mining and ranching were the primary economic activities in the Mormon Basin, Dixie Creek and Rye Valley vicinity west of the Burnt River canyon. The same census records also indicate that Chinese miners or mining companies were actively working the placer ground at Mormon Basin and Rye Valley. Mining and livestock ranching have been the economic focus within the Pedro Mountain geographic unit for nearly 150 years. In general, historic mining and settlement disturbed stream courses and hillsides within the analysis area. During the later half of the 19th century and early 20th century, hill benches in Rye Valley were disturbed by hydraulic mining, transportation roads were built along major streams including the forks of Dixie Creek, and placer operations were conducted along Basin Creek at Mormon Basin.

In the late 1880s through the early 1900s, there was a region wide shift in emphasis to lode mining developments. Several placer and lode mines in the vicinity of Mormon Basin were patented into private

ownership. Principal lode mines located in the Mormon Basin area of the geographic unit included the Sunday Hill Mine, Humboldt Mine and Rainbow Mine, (Brooks & Ramp 1968). A stamp mill was built at the Sunday Hill mine in 1868. The Sunday Hill mine was acquired by the Rainbow Consolidated mining company in 1926 (Hogg 1929-1930), and its operations continued sporadically into the 1930s. Total production estimated from the Sunday Hill was about \$100,000. In 1880, Porter Colt discovered the Humboldt vein during his placer operations in Mormon Basin. Operations at the Humboldt Mine between 1909 and 1915 are credited with about \$225,000 production in gold and silver. The Rainbow Mine, consisting of several consolidated lode claims on a saddle near the head of the south fork of Dixie Creek, was the most productive lode mine in the Mormon Basin district. According to company records, the Rainbow Mine produced about \$2.3 million in values between 1901 to 1919. A 15 stamp mill and cyanide plant built at the Rainbow Mine during its heyday was destroyed by fire in 1923. Further operations at the Rainbow in 1934 were suspended when company owners encountered financial difficulties. Mabel Barbee Lee, wife of mine superintendent Howe Lee, published her recollections of life at the Rainbow Mine during the years 1911 to about 1915 (Lee 1966).

Approximately 495 acres of BLM administered lands have been inventoried for cultural resources in the geographic unit. Archaeological resources previously recorded within the geographic unit included the Amelia town site, the eastern portion of the El Dorado Mining Ditch, and one isolated find. In 2008, about three hundred acres were surveyed by SWCA archaeologists for a newly proposed mining plan of operations in Mormon Basin (Sharma et al. 2008). Prehistoric resources identified by Steven W. Caruthers and Associates (SWCA) Environmental Consultants included two prehistoric lithic scatters and one isolated prehistoric locality. In 2008, BLM surveyed a spring in the Lost Basin allotment. One prehistoric lithic scatter was identified in an area of livestock congregation around the developed spring. BLM lands in the Lost Basin allotment include a cluster of historic lode mine claims with historic debris indicating past mining activity. The lode mine may date from about 1892, when C.M. Foster published a map identifying the Huffman free gold mine at the location (Foster 1892).

No livestock grazing effects have been identified at the Amelia site, El Dorado Ditch, one lithic scatter and three isolated localities located in the Mormon Basin and Pedro Mountain allotments. Both of those allotments met standards for rangeland health. The newly identified prehistoric lithic scatter located in the Lost Basin allotment is addressed in this analysis. None of these resources have been formally evaluated for eligibility to the National Register of Historic Places. The El Dorado Ditch is a property of regional significance in mining and settlement history, and is likely eligible for the National Register.

SWCA recorded twelve historic sites in the Mormon Basin inventory area. The historic sites consist of placer tailings, can dumps, discarded items and mining equipment and deteriorating buildings. No grazing impacts were identified at these historic sites, which have been recommended to the BLM as not likely to be eligible for the National Register.

The Rye Valley cemetery is located on BLM land in the Rye Valley allotment. Although not formally recorded as site, a cemetery record indicates that about 25 graves date from as early as 1876 to 1924. Other unrecorded historic features in the area include a mining ditch adjacent to the south fork of Dixie Creek, and the historic hydraulically worked hillside placer mines along the north fork of Dixie Creek, in the Dixie Creek allotment.

Within the GU, streams and springs in topographic settings with less than 12% slope, as well as rock outcrops with potential for rock shelters, are locations with the highest potential for the presence of significant archaeological sites. Mining related sites would be one of the more common historic properties expected for the GU. In general, cultural resource information is unavailable for several miles of streams, most of the older existing rangeland spring developments, and most of the uplands. Twelve older springs in the 10 analysis allotments were developed in the 1950s-1970s, without cultural resource surveys. Systematic cultural resource surveys have not been completed for most of public land in the 10 allotments. These include Bowman Flat, Dixie Creek, Rattlesnake Gulch, Hollowfield Canyon, North Dixie Creek, Upper Shirttail Creek, Summit Spring, French Creek and Rye Valley. A division fence to separate the Rye Valley Allotment and Summit Creek allotment was surveyed in 1991, and the Rye Valley Spring was surveyed in 1983. No cultural resource sites were identified during these surveys.

Livestock tend to congregate at water sources. Such congregation can result in trampling, soil erosion and displacement of archaeological material that affects the archaeological context. Where present,

archaeological sites adjacent to perennial streams or springs would be vulnerable to effects from livestock congregation.

In eight allotments where rangeland health standards were met and no change in grazing management is proposed, it is assumed that present grazing management is not affecting cultural resources or traditional foods.

Paleontological Resources

No previously recorded paleontological resources are known to exist in the Pedro Mountain GU.

3.4.3 Alternative 1

Since inventory is limited, there is insufficient information to determine the effects of continued current management on cultural resources and traditional foods for most of the allotments. In ten allotments where riparian and water quality standards were not met, it is assumed that current grazing management would continue to affect riparian areas, traditional foods and that effects to any archaeological sites that may be present in or adjacent to riparian areas would be ongoing and similar to effects that have occurred in the past. These effects would be similar to effects that have occurred in the past with current management.

Under this alternative, the opportunity to identify cultural resources through project survey and implementation would be limited, focused primarily on survey of existing spring developments subject to ongoing maintenance.

One site with potential impacts from livestock congregation has been identified in the Lost Basin allotment. Under the alternative, the spring and site would not be fenced, and disturbance from ongoing livestock congregation would continue to occur.

3.4.4 Alternative 2

If this alternative is implemented, livestock use on the public lands would be eliminated in ten allotments until standards are met. The management prescriptions would minimize livestock use of riparian areas and improve upland dispersal of livestock.

Standard design features have been identified as measures to locate and protect archaeological resources when projects are proposed or maintained within the geographic unit. Proposed projects on BLM lands would be surveyed for cultural resources. Necessary mitigation measures would be developed, providing an opportunity to gain further information and understanding about archaeological resources in the 10 allotments.

Since inventory is limited for most of the allotments, at present there is insufficient information to determine the effects of the alternative on cultural resources and traditional plants. It is assumed that grazing prescriptions that would reduce or eliminate grazing in riparian areas (streams and springs) would be beneficial to any previously unidentified archeological sites or traditional foods that may be present.

One site with potential livestock impacts has been identified in the Lost Basin Allotment. Excluding or reducing grazing, or fencing the spring source and archaeological site in the Lost Basin Allotment would contribute to protection of the site.

3.4.5 Alternative 3

Grazing prescriptions, utilization monitoring standards, and projects are proposed within the 10 allotments, to achieve or make progress toward meeting rangeland health standards. These management prescriptions would minimize livestock use of riparian areas and improve upland dispersal of livestock. Potential beneficial effects of reducing livestock congregation in riparian areas are similar in nature to the (*eliminate grazing*) Alternative 2. For most of the allotments, inventory is limited, and thus at present

there is insufficient information to determine the effects of the alternative on cultural resources and traditional plants. The BLM believes that actions to achieve or make progress in meeting rangeland health standards would also be beneficial to traditional plants.

Standard design features have been identified as measures to locate and protect archaeological resources when projects are proposed or maintained within the GU. The following projects proposed for 10 allotments would be surveyed for cultural resources. The alternative would provide an opportunity to gain further information and understanding about archaeological resources in the 10 allotments. Inventories and mitigation measures would be developed for the following proposed projects.

- Summit Spring: Maintenance repair of previously un-surveyed spring developments
- Rye Valley: Maintenance repair of previously un-surveyed spring developments
- Upper Shirttail: Maintenance repair of previously un-surveyed spring developments
- Dixie Creek: 0.7 miles allotment boundary gap fence (0.7 mile)
- Bowman Flat: Poor's Creek riparian protection juniper cut falling (2 acres, 0.5 mile stream)
- Rattlesnake: 2 miles allotment boundary fence
- French Creek: 2 miles of new allotment fence
- Hollowfield Canyon: Riparian protection through juniper cut and drop (1 acre, 0.25 mile stream)
- North Dixie: New division fence (1 mile); and 1 mile riparian enclosure fence.
- Lost Basin: Fence two spring sources; juniper and aspen falling (10 acres).

One site with potential livestock grazing impacts has been identified in the Lost Basin Allotment. Alternative 3 would require fencing a spring source in the Lost Basin allotment that would provide some protection to the archaeological site.

4 Cumulative Effects Analysis

This section summarizes the past, present, and reasonably foreseeable future effects of implementing a particular alternative. The Summaries and Determinations (2003, 2004) and Section 3 (Affected Environment) of this document served to provide the base-line for conditions as a result of past management actions, while the analysis in Section 5 of this document analyzes the effects of the present management and that which would occur if one of three alternatives were selected for the reasonably foreseeable future. Resources present in the GU were presented, alternatives analyzed, and summary effects presented to indicate if a particular alternative would provide progress toward or meet specific resource objectives.

Alternative 1

Rangeland vegetation conditions and grazing use would continue to occur as described in the GU. Ongoing flexibility associated with existing management would remain unchanged. Customary permittee grazing practices would be fully maintained, and the financial obligations for BLM and permittees would include normal maintenance or reconstruction of existing projects.

The cumulative effects of existing management practices would not result in the attainment of Rangelands Standards currently not being met as shown in Table 1. This includes not meeting objectives for riparian/wetland areas, terrestrial wildlife, and aquatic species and habitat due to adverse impacts on riparian and wetland functions. Cultural resources would not be protected in Lost Basin allotment because the springs would not be fenced. This alternative would result in little or no economic disruption to the permittees ranching operations in the short term. Since current management is not achieving many rangeland health standards, it is reasonable to assume that over time authorized AUMs may need to be reduced if monitoring shows that the utilization standards and rangeland health standards cannot be achieved with the current level of AUMs, which would result in economic impact in the long term (3 years or more).

Alternative 2

This alternative would differ greatly from the current situation and result in substantial reductions in forage availability for livestock. Upland vegetation health would be protected because of the rest period

in pastures where S&Gs were not met due to current livestock grazing. Grazing use would be allowed in remaining pastures at seasons and intensities consistent with maintenance and protection of upland and riparian vegetation. Limitations to grazing use caused by riparian and water quality concerns would be accomplished by some stream corridor fencing, but riparian concerns would primarily be addressed by adjustments in seasons of grazing use.

A diminished level of livestock management flexibility and sustained forage at a much reduced level would be provided to permittees. No livestock grazing would be authorized on public lands in those pastures that do not meet one or more Standards until those Standards are met. The cumulative impacts of this alternative would result in a high level of protection of resource values very similar to what has been described for Alternative 3, but at a higher level, because of diminished grazing use influences and periods of grazing rest in pastures not currently meeting standards until the standards are met. Improved protection of cultural resources and traditional foods would result with this alternative.

Alternative 3

The cumulative effects of grazing season adjustments, grazing systems (deferment and rest), and fences would result in more evenly distributed grazing influences within uplands compared to current management. However, additional livestock water sources would cause some increases in localized disturbance around troughs. The land treatments proposed would temporarily increase some grass forage production available for grazing use and help to restore plant cover diversity. Upland vegetation health would be maintained or improved as a result of season of use and utilization limits. Grazing use would be allowed at seasons and intensities consistent with maintenance and protection of upland vegetation. Limitations to grazing use caused by riparian concerns would be accomplished by some stream corridor or exclusion fencing, but riparian concerns would primarily be addressed by adjustments in seasons of grazing use, and grazing systems that allow for plant regrowth, deferment, and periodic rest.

A reasonable level of livestock management flexibility and sustained forage availability would be provided to permittees with this alternative. Customary permittee grazing practices would be changed in order to protect riparian/wetland and upland vegetation health. Financial commitments necessary to implement the alternative would be secured by BLM as funding becomes available, and through cooperation with grazing permittees. Improved protection of cultural resources and traditional foods would result with this alternative.

5 Mitigating Measures

Mitigating measures are BLM administrative actions taken to reduce or eliminate adverse impacts resulting from BLM actions beyond those already described in *Chapter 2, Design Features Common to All Alternatives*.

Weeds

Program standards and best management practices (BMP) stated in the Vale District Programmatic Integrated Noxious Weed Management EA will be followed and will suffice for mitigating the effects of these alternatives regardless of the alternative chosen

6 Irreversible or Irretrievable Commitments of Resources

There are no known irreversible or irretrievable commitments of resources known to occur within the Pedro Mountain GU.

7 Monitoring

Rangeland Monitoring

Monitoring studies will be conducted in consultation with BLM grazing permittees and the interested public. BLM will use approved interagency resource monitoring methods, and apply professional judgment in determining if significant progress toward rangeland health is being achieved. BLM monitoring data will be interpreted by an interdisciplinary team of professionals in light of the best available data. This will be in accordance with the Baker RMP guidance and Oregon State Office guidance to monitor and evaluate grazing systems and adjust the systems and stocking levels as appropriate to meet objectives (USDI 1988).

End-of-growing season utilization targets and within-season utilization triggers will be measured on key or critical riparian areas.

Methods used will be those approved in Technical Reference 1734-3 for utilization (USDI 1996a), Technical Reference 1734-4 for trend (USDI 1996b), or the Oregon BLM Rangeland Monitoring Handbook .

Fish and Riparian Monitoring

- A stream and riparian photo point/trend site will be established in each of the four areas including North Fork Dixie Creek and Deer Creek. The photo points will be permanently established with rebar and mapped following established procedures in Hall (2002) or a similar method. The trend plots will be read every 3 to 5 years in order to determine changes over time.
- Selected indicators from the Multiple Indicator Monitoring method (Burton et al. 2008) or other acceptable trend monitoring methods (Winward 2000) would be used to monitor the allotments to determine and observe changes in greenline vegetation and streambank stability.
- PFC and fish presence/absence surveys will be conducted as funding and personnel availability allows.

Weeds monitoring

- Known existing noxious weed sites will continue to be treated as priorities and funding allow under all of the alternatives. Monitoring for treatment effectiveness will occur annually. Periodic inventory for new sites will occur as funding allows.

Cultural monitoring

- Known or newly identified cultural sites will be monitored for grazing effects at least once during the 10-year term of the grazing permit. Additional monitoring may be conducted in conjunction with rangeland monitoring in the area. Monitoring to identify and document livestock grazing effects at known archaeological sites would be conducted by heritage staff and trained staff to be supervised in the field.

8 People, Agencies, and Native American Tribes Consulted

The following were notified regarding the actions proposed within this EA:

- Permittees
- Burns Paiute Tribe
- Confederated Tribes of the Colville Reservation
- Confederated Tribes of the Umatilla Indian Reservation
- Confederated Tribes of the Warm Springs Reservation
- Nez Perce Tribe
- Fort McDermitt Shoshone-Paiute Tribes
- Shoshone-Bannock Tribes of Fort Hall
- Shoshone-Paiute Tribes of Duck Valley

- Hells Canyon Preservation Council
- Oregon State Historic Preservation Office
- Oregon Department of Fish and Wildlife
- Hells Canyon Preservation Trust
- Christopher Christy

8.1 Summary of Public Comments Received

No comments received yet.

9 Authors

Staff Member	Profession
Nancy Lull	Field Manager
Dorothy Mason	Wildlife Biologist/Document Preparer
Craig Martell	Rangeland Management Specialist
John Quintela	Fisheries Biologist
Kevin McCoy	Outdoor Recreation Planner
Melissa Yzquierdo	Wildlife Biologist/Botanist
Jon Sadowski	Wildlife Biologist (retired/Contractor)
Todd Kuck	Hydrologist / Supervisory NRS
Mike Woods	Range Conservationist / Soils
Katy Coddington	Archaeologist
Mary Oman	Archaeologist(retired/Contractor)
Erin McConnell	Noxious Weed Specialist
Samantha Cisney	Resource Assistant
Bruce Haase	GIS Specialist

10 Literature Cited

- Blyth, B. 1938. Northern Paiute bands in Oregon. In V. Ray et al. (Ed.), Tribal distribution in eastern Oregon and adjacent regions. *American Anthropologist* 40: 402-405, 384-415.
- Brooks, H. 2007. A pictorial history of gold mining in the blue mountains of eastern Oregon. Baker County Historical Society, Baker City, Oregon.
- Brooks, H. & Ramp, L. 1968. Gold and silver in Oregon. Bulletin 61, Oregon Department of Geology and Mineral Industries.
- Burton, T., Smith, S. J., & Cowley, E. R. 2008. Monitoring stream channels and riparian vegetation—Multiple indicators. Interagency Technical Bulletin BLM/ID/GI-08/001+1150. Idaho State Office, BLM and Intermountain Region, US Forest Service.
- Currens, K. 1997. Evolutionary ecology of redband trout. In Evolution and risk in conservation of pacific salmon. (Doctoral thesis, Oregon State University).
- Evans, J. 1990. Powerful rocky: the Blue Mountains and the Oregon trail, 1811-1883. La Grande, Oregon: Eastern Oregon State College.
- Foster, C.M. 1892. Mining Map of Eastern Oregon, Showing by Townships the Correct Location of the principal Quartz and Placer Mines, Ditches, Quartz Mills, Towns, Post Offices, Rail Roads, County Roads and Saw mills. File Copy at Department of Geology and Mineral Industries, Baker City, Oregon.
- Fowler, C. S. & Liljeblad, S. 1986. Northern Paiute. In Great Basin, handbook of North American Indians, volume 11, ed. Warren L. D’Azevedo, 435-465. Washington DC: Smithsonian Institution.
- Hagen, C. A. 2005. Greater sage-grouse conservation assessment and strategy for Oregon: A plan to maintain and enhance populations and habitat. Salem, OR: Oregon Department of Fish and Wildlife.
- Hall, F. C. 2002. Photo point monitoring handbook: Part A – field procedures. General Technical Report PNW-GRT-526. Portland, OR: USDA, Forest Service, Pacific Northwest Research Station.
- Hogg, G.C. 1929-1930 . Sunday Hill Mine. Typescript in Department of Geology and Mineral Industries Files, Baker City, Oregon.
- Holechek, J. L. 1988. An approach for setting the stocking rate. *Rangelands*: 10(1).
- Karl, M. & Sadowski, J. 2005. Assessing big sagebrush at multiple spatial scales: An example in southeast Oregon. Technical Note 417 BLM/ST/ST-05/001+4400. Denver, CO: Bureau of Land Management.
- Kostow, K. (Ed). 1995. Biennial report on the stats of wild fish in Oregon. Internal Report. Portland, OR: Oregon Department of Fish and Wildlife.
- Lee, M.B. 1966. The rainbow years. New York: Doubleday and Company.
- Maser, C., Thomas, J.W., & Anderson, R.G. 1984. Wildlife habitats in managed rangelands—the Great Basins of southeastern Oregon: The relationship of terrestrial vertebrates to plant communities and structural conditions. General Technical Report PNW-172. USDA, Forest Service, Pacific Northwest Forest and Range Experiment Station.
- Murphy, R.F., & Murphy, Y. 1986. Northern Shoshone and Bannock. In W. L. D’Azevedo (Ed.), Great Basin, handbook of North American Indians, volume 11 p. 284-307. Washington, DC: Smithsonian Institution.
- Natural Resources Conservation Service. 1997. Soil survey of Baker County area, Oregon. In cooperation with the Department of Interior, Bureau of Land Management, the Forest Service and the Oregon Agricultural Experiment Station. Baker City, Oregon.
- Northwest Coalition for Alternatives to Pesticide, et al. vs. Block, et al. 1984. Civil No. 82-6273-B.
- Northwest Coalition for Alternatives to Pesticide, et al. vs. Block, et al. 1987. Civil No. 83-6272-BU.
- Oregon Department of Environmental Quality. 2000. Upper Grande Ronde river sub-basin total maximum daily load.
- Oregon Department of Environmental Quality. 2006. DEQ’s 303d list of water quality limited waterbodies and Oregon’s criteria used for listing waterbodies. Portland, Oregon.
- Oregon Department of Fish and Wildlife. 1990-1995. Oregon Department of Fish and Wildlife aquatic inventory project. Portland, Oregon.
- Oregon Department of Fish and Wildlife and Bureau of Land Management. 2002. Snake and burnt river basins aquatic inventories project stream habitat surveys.

- Oregon National Heritage Program. 2004. Rare, threatened, and endangered species of Oregon. Portland, Oregon.
- Pinchak, W. E., Smith, M. A., Hart, R. H., & Waggoner, Jr., J. W. 1991. Beef cattle distribution patterns on foothill range. *Journal of Range Management* 44(3).
- Sharma, M., Allen, J., Steinkamp, M., & Morte-Ferguson, C. 2008. Cultural resources inventory for the Mormon Basin placer gold mining project, Malheur and Baker Counties, Oregon. Prepared by SWCA Environmental Consultants for BP Gold. November 4, 2008 Report in Progress.
- Steward, J. H. & Wheeler-Voegelien, E. 1974. *The Northern Paiute Indians*. New York: Garland Publishing.
- Thomas, J. W. & Parker, L.J. 1979. *Wildlife habitats in managed forests: the Blue Mountains of Oregon and Washington*. Washington, DC: USDA, Forest Service.
- United States Department of Agriculture (USDA), National Agricultural Statistics Service. 2002. 2002 census of agriculture county profile. Baker, Oregon. USDA.
<http://www.nass.usda.gov/census/census02/profiles/or/cp41001.PDF>
- United States Department of Interior (USDI) Bureau of Land Management. 1985. *Rangeland monitoring in Oregon and Washington*.
- USDI Bureau of Land Management. 1988. *Rangeland monitoring handbook*. H-1734-2. Portland, OR: Oregon State Office.
- USDI Bureau of Land Management. 1989. *Baker resource management plan record of decision*. Baker City, OR: Vale District BLM, Baker Resource Area.
- USDI Bureau of Land Management. 1994. *Rangeland reform '94, draft environmental impact statement*. Washington DC: Government Printing Office.
- USDI Bureau of Land management. 1996a. *Utilization studies and residual measurements*. Interagency Technical Reference 1734-3. National Applied Resource Sciences Center, Denver CO.
- USDI Bureau of Land Management. 1996b. *Sampling vegetation attributes*. Technical Reference 1734-4. BLM/RS/ST-96/002+1730.
- USDI Bureau of Land Management. 1997. *The standards for rangeland health and guidelines for livestock grazing management for public lands administered by the BLM in the states of Oregon and Washington*. Portland, OR: BLM Oregon/Washington State Office.
- USDI Bureau of Land Management. 1998. *Riparian area management: A user guide to assessing proper functioning condition and the supporting science for lotic areas*. Technical Reference 1737-15.
- USDI Bureau of Land Management. 2004a. *Guidance for addressing sagebrush habitat conservation in BLM land use plans*. Washington, DC: United States Department of the Interior.
- Walker, D. 1998. Nez Perce. In D. Walker (Ed.), *Plateau, handbook of North American Indians volume 12* p. 420-438. Washington DC: Smithsonian Institution.
- Winward, A.H. 2000. *Monitoring the vegetation resources in riparian areas*. General Technical Report RMRS-47. USDA, Forest Service.

11 References

- Clary, W. P., Shaw, N.L., Dudley, J. G., Saab, V. A., Kinney, J. W., & Smithman, L.C. 1996. Response of a depleted sagebrush steppe riparian system to grazing control and woody plantings. General Technical Report INT-RP-492. USDA, Forest Service.
- Connelly, J. C., Knick, S.T., Schroeder, M. A., & Stiver, S.J. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats., USDI, U.S. Fish and Wildlife Service.
- Crawford, J.A., Olson, R.A., West, N. E., Mosley, J. C., Schroeder, M. A., Whitson, T.D., Miller, R.F., Gregg, M.A., & Boyd, C.S. 2004. Synthesis paper ecology and management of sage-grouse and sage-grouse habitat. *Journal of Range Management*: Vol 57 (1).
- Hagen, C. 2008 Oregon Department of Fish and Wildlife State sage-grouse guidelines; lead author of Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat . Communication of rotation schedule for Pritchard Creek Allotment [Personal Communication 5/21/08].
- Kirby, V. & Skinner, S. 1989. True buckaroo tales from the vanishing West. Baker City, Oregon: Record Courier Printers.
- Kovalchick, B. L. & Elmore, W. 1992. In W.P. Clary (Ed.), Effects of cattle grazing systems on willow dominated plant associations in central Oregon, p. 111–119.
- McArthur, Bedunah, D., & Wambolt, C.L. (Eds.) Proc. Symposium on Ecology and Management of Riparian Shrub Communities. General Technical Report INT-GTR-289. USDA, Forest Service.
- Mosley, J.C., Cook, P. S., Griffis, A. J., & O’Laughlin, J. 1997. Guidelines for managing cattle grazing in riparian areas to protect water quality: Review of research and best management practices policy. University of Idaho Forestry, Wildlife and Range Policy Analysis Group Rept. 15.
- Myers, L.H. 1989. Grazing and riparian management in southwestern Montana. In R.E. Gresswell, B.A. Barton, and J.L. Kershner (Eds.), Practical approaches to riparian resource management—An educational workshop. BLM-MT-PT-89-001- 4351. USDI, Bureau of Land Management. p. 117-120.
- Oregon Department of Environmental Quality. 2006. Oregon 2004/2006 integrated report. Portland, Oregon.
- Oregon National Heritage Program. 2004. Rare, threatened, and endangered species of Oregon. Portland, Oregon.
- Rowland, M. M., Wisdom, M. J., Suring, L. H., & Meinke, C. W. 2006. Greater sage-grouse as an umbrella species for sagebrush-associated vertebrates. *Biological Conservation*: Vol. 129 p. 323-335.
- Shaw, N.L. 1992. Recruitment and growth of Pacific willow and Sandbar willow seedlings in response to season and intensity of cattle grazing, p. 130–137. In W.P. Clary, E.D. McArthur, D. Bedunah, and C.L. Wambolt (Eds.) Proc. Symp. on Ecology and Management of Riparian Shrub Communities. General Technical Report INT-289. USDA, Forest Service.
- Stern, T. 1998. Cayuse, Umatilla, and Walla Walla. In D. Walker (Ed), Plateau, handbook of North American Indians volume 12 p. 395-419. Washington DC: Smithsonian Institution.
- Suphan, R. 1974. Ethnological report on the Umatilla, Walla Walla, and Cayuse Indians relative to socio-political organization and land use. In D. A. Horr (Ed.), Oregon Indians II American Indian ethnohistory: Indians of the Northwest, p. 85-180. New York and London: Garland Publishing Company.
- United States Department of the Interior (USDI) Bureau of Land Management. 1969. Manual H-1741-02, Water developments. Lakewood, CO: BLM National Business Center.
- USDI Bureau of Land Management. 1981. Final Ironside grazing management environmental impact statement. Portland, OR: Oregon State Office BLM.
- USDI Bureau of Land Management. 1983. Vale district monitoring plan.
- USDI Bureau of Land Management. 1989. Manual H-1741-01, Fencing. Lakewood, CO: BLM National Business Center.
- USDI Bureau of Land Management. 2004b. Escape Ramps in Water Developments. Instruction Memorandum No. 2004-156.
- USDI Bureau of Land Management. 2006. Riparian area management: Grazing management processes and strategies for riparian-wetland areas. Technical Reference: 1737-20.

USDI Bureau of Land Management. 2007. Rangeland standards assessment, evaluation, and determination. Pritchard Creek geographic unit, Pritchard Creek grazing allotment. Baker, OR: Vale District BLM, Baker Resource Area.

Wait, D. 1866. Journal. Typescript copy, Baker County Library. Baker County, Oregon.

12 Supporting Information

12.1 Appendices

12.1.1 Appendix 1 – Oregon and Washington BLM Standards and Guidelines (S&Gs)

Standards for Rangeland Health

- *Standard 1* – Watershed Function – Uplands: upland soils exhibit infiltration and permeability rates, moisture storage, and stability that are appropriate to soil, climate, and landform.
- *Standard 2* – Watershed Function --Riparian/wetland areas: riparian-wetland areas are in properly functioning physical condition appropriate to soil, climate, and landform.
- *Standard 3* – Ecological Processes –Uplands: healthy, productive and diverse plant and animal populations and communities appropriate to soil, climate, and landform are supported by ecological processes of nutrient cycling, energy flow, and the hydrologic cycle.
- *Standard 4* – Water Quality: surface water and ground water quality, influenced by agency actions, complies with State water quality standards.
- *Standard 5* – Native, Threatened and Endangered (T&E), and Locally Important Species: habitats support healthy, productive, and diverse populations and communities of native plants and animals (including special status species and species of local importance) appropriate to soil, climate, and landform.

Guidelines for Livestock Grazing Management

1. The season, timing, frequency, duration and intensity of livestock grazing use will be based on the physical and biological characteristics of the site and the management unit in order to;

- provide adequate cover (live plants, plant litter and residue) to promote infiltration, conserve soil moisture and to maintain soil stability in upland areas
- provide adequate cover and plant community structure to promote streambank stability, debris and sediment capture, and floodwater energy dissipation in riparian areas.
- promote soil surface conditions that support infiltration
- avoid sub-surface soil compaction that retards the movement of water in the soil profile
- help prevent the increase and spread of noxious weeds
- maintain or restore diverse plant populations and communities that fully occupy the potential rooting volume of the soil
- maintain or restore plant communities to promote photosynthesis throughout the potential growing season
- promote soil and site conditions that provide the opportunity for the establishment of desirable plants
- protect or restore water quality
- provide for the life cycle requirements, and maintain or restore the habitat elements of native (including T&E, special status, and locally important species) and desired plants and animals.

2. Grazing management plans will be tailored to site-specific conditions and plan objectives. Livestock grazing will be coordinated with the timing of precipitation, plant growth and plant form. Soil moisture, plant growth stage and the timing of peak stream flows are key factors in determining when to graze. Response to different grazing strategies varies with differing ecological sites.

3. Grazing management systems will consider nutritional and herd health requirements of the livestock.

4. Integrate grazing management systems into the year-round management strategy and resources of the permittee(s) or lessee(s). Consider the use of collaborative approaches (e.g., Coordinated Resource Management, Working Groups) in this integration.

5. Consider competition for forage and browse among livestock, big game animals, and wild horses in designing and implementing a grazing plan.

6. Provide periodic rest from grazing for rangeland vegetation during critical growth periods to promote plant vigor, reproduction and productivity.
7. Range improvement practices will be prioritized to promote rehabilitation and resolve grazing concerns on transitory grazing land.
8. Consider the potential for conflict between grazing use on public land and adjoining land uses in the design and implementation of a grazing management plan.

12.1.2 Appendix 2 – Potential Species of Concern for Pedro Mountain GU

Species	Listed As	Present on Site	Description
<u>Avian Species</u>			
Bald eagle (<i>Haliaeetus Leucocephalus</i>)	T	No known occurrence	Inadequate habitat
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	CS	No known occurrence	Inadequate habitat
Northern goshawk (<i>Accipiter gentilis</i>)	SC	No known occurrence	Inadequate habitat
Western burrowing owl (<i>Athene cunicularia hypugea</i>)	SC	Possible	Supportive habitat
Ferruginous hawk (<i>Buteo regalis</i>)	SC	Possible	Supportive habitat
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	SC	Yes	Supportive habitat
Olive-sided flycatcher (<i>Contopus cooperi</i>)	SC	No known occurrence	Inadequate habitat
Willow flycatcher (<i>Empidonax traillii adastus</i>)	SC	No known occurrence	Inadequate habitat
Yellow-breasted chat (<i>Icteria virens</i>)	SC	No known occurrence	Inadequate habitat
Lewis' woodpecker (<i>Melanerpes lewis</i>)	SC	No known occurrence	Inadequate habitat
Mountain quail (<i>Oreortyx pictus</i>)	SC	No known occurrence	Inadequate habitat
White-headed woodpecker (<i>Picoides albolarvatus</i>)	SC	No known occurrence	Inadequate habitat
<u>Mammal Species</u>			
Pygmy rabbit (<i>Brachylagus idahoensis</i>)	SC	Possible	Supportive habitat
Pale western big-eared bat (<i>Corynorhinus townsendii pallascens</i>)	SC	No known occurrence	Species occurrence not known
California wolverine (<i>Gulo gulo luteus</i>)	SC	No known occurrence	Inadequate habitat
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	SC	No known occurrence	Potential habitat/ unsurveyed
Small-footed myotis (bat) (<i>Myotis ciliolabrum</i>)	SC	No known occurrence	Potential habitat/ unsurveyed
Long-eared myotis (bat) (<i>Myotis evotis</i>)	SC	No known occurrence	Potential habitat/ unsurveyed
Fringed myotis (bat) (<i>Myotis thysanodes</i>)	SC	No known occurrence	Potential habitat/ unsurveyed
Long-legged myotis (bat) (<i>Myotis volans</i>)	SC	No known occurrence	Potential habitat/ unsurveyed
Yuma myotis (bat) (<i>Myotis yumanensis</i>)	SC	No known occurrence	Potential habitat/ unsurveyed
California bighorn (<i>Ovis canadensis californiana</i>)	SC	No known occurrence	Inadequate habitat
Preble's shrew (<i>Sorex preblei</i>)	SC	No known occurrence	Supportive habitat
<u>Fish Species</u>			
Bull trout (Columbia River Basin) (<i>Salvelinus confluentus</i>)	T/CH	Historic/No known occurrence	Inadequate habitat
Interior redband trout (<i>Oncorhynchus mykiss gibbsi</i>)	SC	Yes	Supportive habitat
<u>Amphibian and Reptile Species</u>			
Columbia spotted frog (<i>Rana luteiventris</i>)	CS	No known occurrence	Inadequate habitat
Tailed frog (<i>Ascaphus truei</i>)	SC	No known occurrence	Inadequate habitat
Northern sagebrush lizard (<i>Sceloporus graciosus graciosus</i>)	SC	No known occurrence	Inadequate habitat
<u>Plant Species</u>			
Howell's spectacular thelypody (<i>Thelypodium howellii ssp. Spectabilis</i>)	T	No known occurrence	Inadequate habitat
Slender moonwort (<i>Botrychium lineare</i>)	CS	No known occurrence	Inadequate habitat
Wallowa ricegrass (<i>Achnatherum wallowaensis</i>)	SC	No known occurrence	Inadequate habitat
Upward-lobed moonwort (<i>Botrychium ascendens</i>)	SC	No known occurrence	Inadequate habitat
Crenulate grape-fern (<i>Botrychium crenulatum</i>)	SC	No known occurrence	Inadequate habitat
Mountain grape-fern (<i>Botrychium montanum</i>)	SC	No known occurrence	Inadequate habitat
Twin spike moonwort (<i>Botrychium paradoxum</i>)	SC	No known occurrence	Inadequate habitat
Stalked moonwort (<i>Botrychium pedunculosum</i>)	SC	No known occurrence	Inadequate habitat
Clustered lady's-slipper (<i>Cypripedium fasciculatum</i>)	SC	No known occurrence	Inadequate habitat
Cronquist's stickseed (<i>Hackelia cronquistii</i>)	SC	No known occurrence	Inadequate habitat
Red-fruited desert parsley (<i>Lomatium erythrocarpum</i>)	SC	No known occurrence	Inadequate habitat
Cusick's lupine (<i>Lupinus lepidus var. cusickii</i>)	SC	No known occurrence	Inadequate habitat
Oregon semaphore grass (<i>Pleuropogon oregonus</i>)	SC	No known occurrence	Inadequate habitat
Snake River goldenweed (<i>Pyrrocoma radiata</i>)	SC	No known occurrence	Inadequate habitat
Biennial stanleya (<i>Stanleya confertifl</i>)	SC	No known occurrence	Inadequate habitat

(E) - Listed Endangered (T) - Listed Threatened (CH) - Critical Habitat has been designated for this species (CS) - Candidate Species (PE) - Proposed Endangered (PT) - Proposed Threatened (PCH) - Critical Habitat has been proposed for this species (SC) - Species of Concern

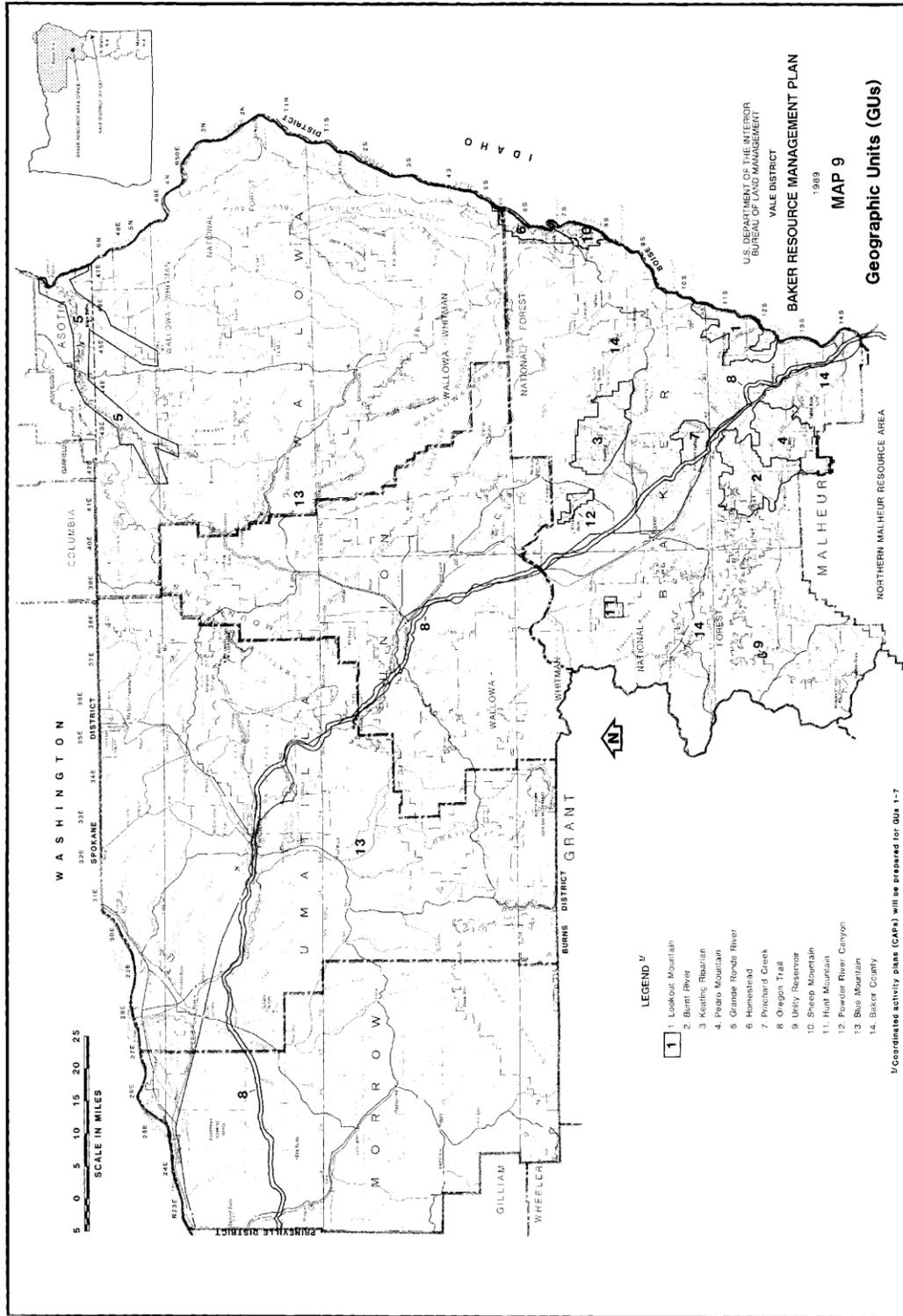
12.1.3 Appendix 3 – Acronyms

Refer to the list below for acronyms that may have been used in this document.

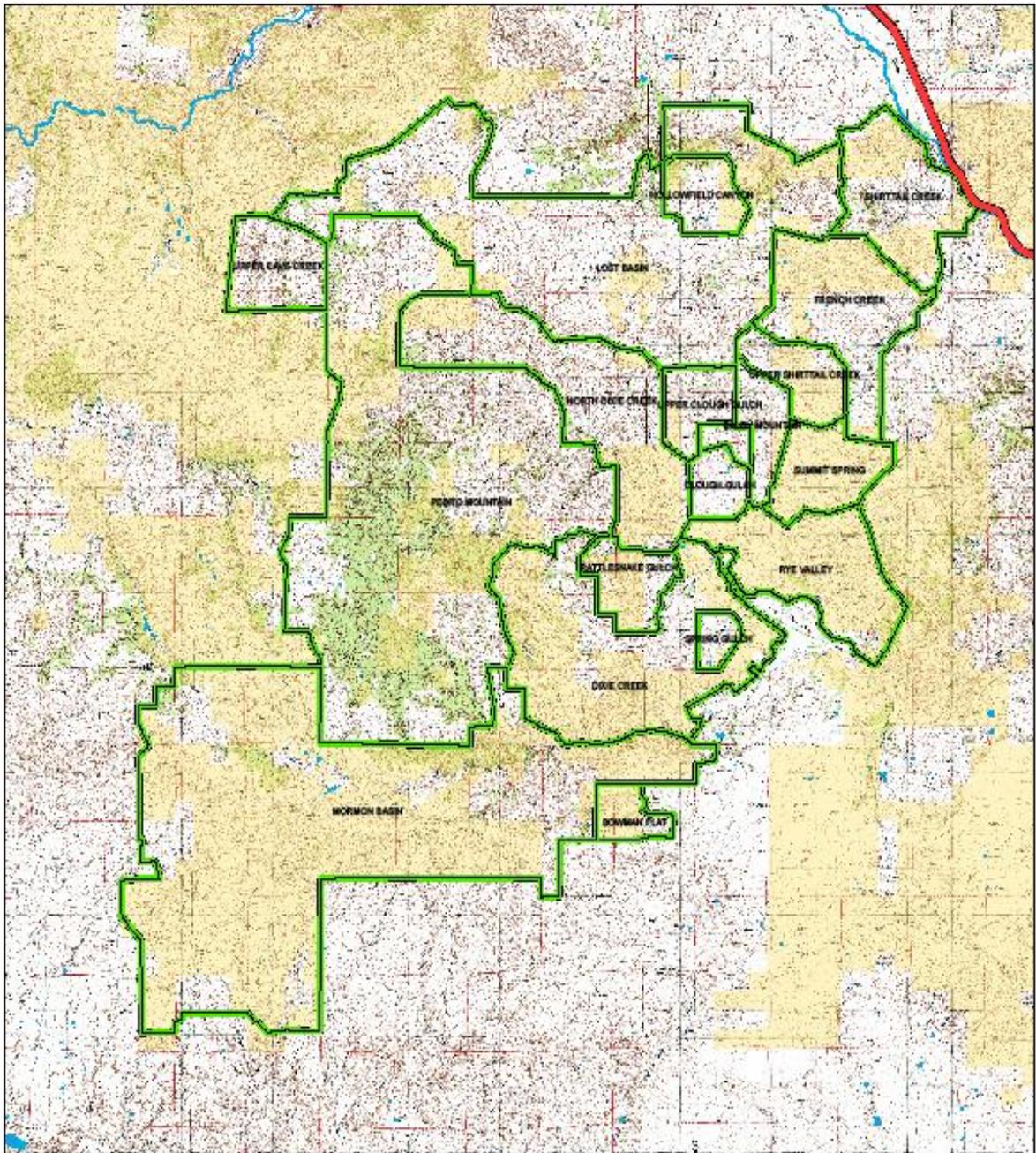
ACEC	area of critical environmental concern
AMP	allotment management plan
AUM	animal unit month
BLM	Bureau of Land Management
BMP	best management practices
BRA	Baker Resource Area
C	custodial (with reference to allotment categorization)
CEQ	United States Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	cubic feet per second
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
CWWR	clean water and watershed restoration
DNA	determination of NEPA adequacy
DO	dissolved oxygen
EA	environmental assessment
EIS	environmental impact statement
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FARD	functioning at risk, downward trend
FARN	functioning at risk, trend not apparent
FARU	functioning at risk, upward trend
FLPMA	Federal Land Policy and Management Act
GIS	geographic information system
GU	geographic unit
HUC	hydrologic unit code
I	improve (with reference to allotment categorization)
M	maintain (with reference to allotment categorization)
MIM	multiple indicator monitoring
MO	management objective
NEPA	National Environmental Policy Act
NF	non-functioning
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NTU	nephelometric turbidity unit
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
OHV	off-highway vehicle
ORV	outstandingly remarkable value
PFC	proper functioning condition
PNC	potential natural community
RM	river mile
RMP	resource management plan
ROD	record of decision
S&Gs	standards for rangeland health
SHPO	State Historic Preservation Office
SWCA	Steven W. Caruthers and Associates (with reference to environmental consultants)
T&E	threatened and endangered
TMDL	total maximum daily load
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
VRM	visual resource management
WSA	wilderness study area

12.2 Maps

12.2.1 Map 1



12.2.2 Map 2



Pedro Mountain Geographical Unit

Legend

- Bureau of Land Management
- Other Federal Lands
- U.S. Forest Service
- Private

0 1.25 2.5 Miles

0 2 4 Kilometers

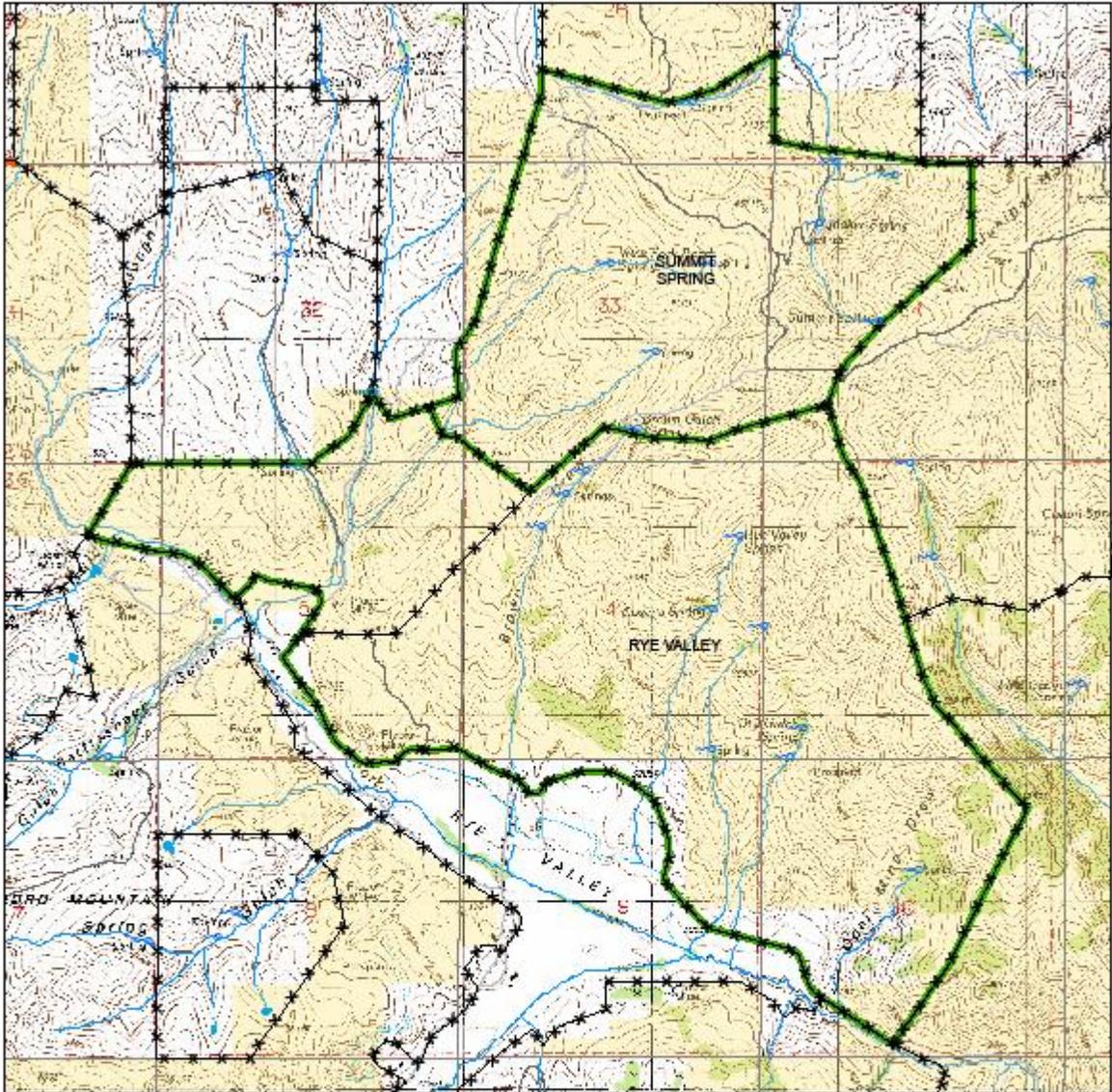
Vicinity Map

U.S. Department of Interior
Bureau of Land Management

Vale District Baker Resource Area
01/21/2009

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

12.2.3 Map 3



Summit Springs and Rye Valley Allotments

Legend

-  Proposed Projects
-  Bureau of Land Management
-  U.S. Forest Service
-  Private

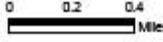
U.S. Department of Interior
Bureau of Land Management

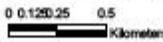
  

Vale District Baker Resource Area

12/18/2008

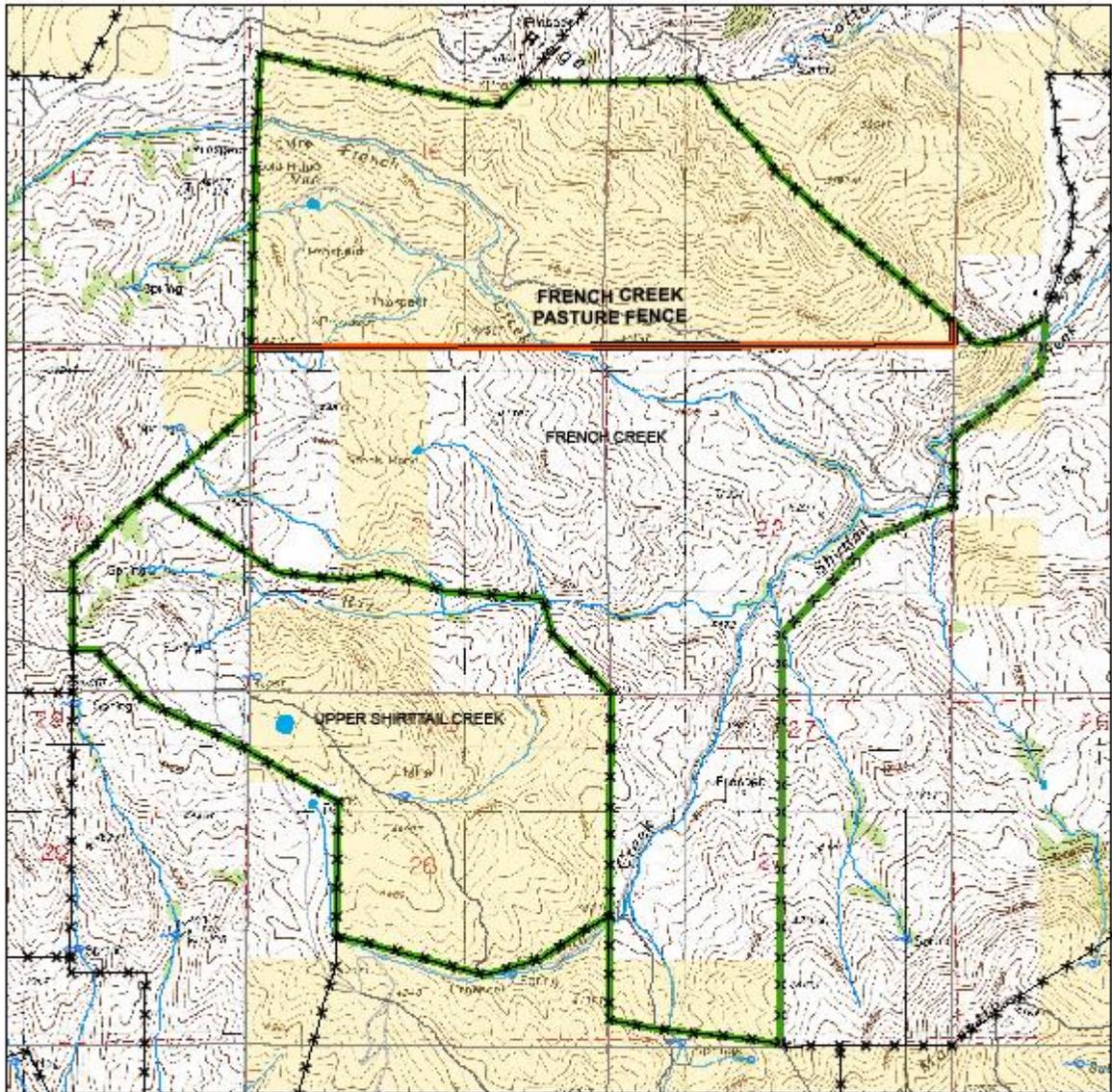
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

 Miles

 Kilometers

 Vicinity Map

12.2.4 Map 4



**French Creek and Upper Shirttail Allotments
With Proposed Projects**

Legend

-  Proposed Projects
-  Bureau of Land Management
-  U.S. Forest Service
-  Private

U.S. Department of Interior
Bureau of Land Management

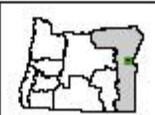
  

Vale District Baker Resource Area

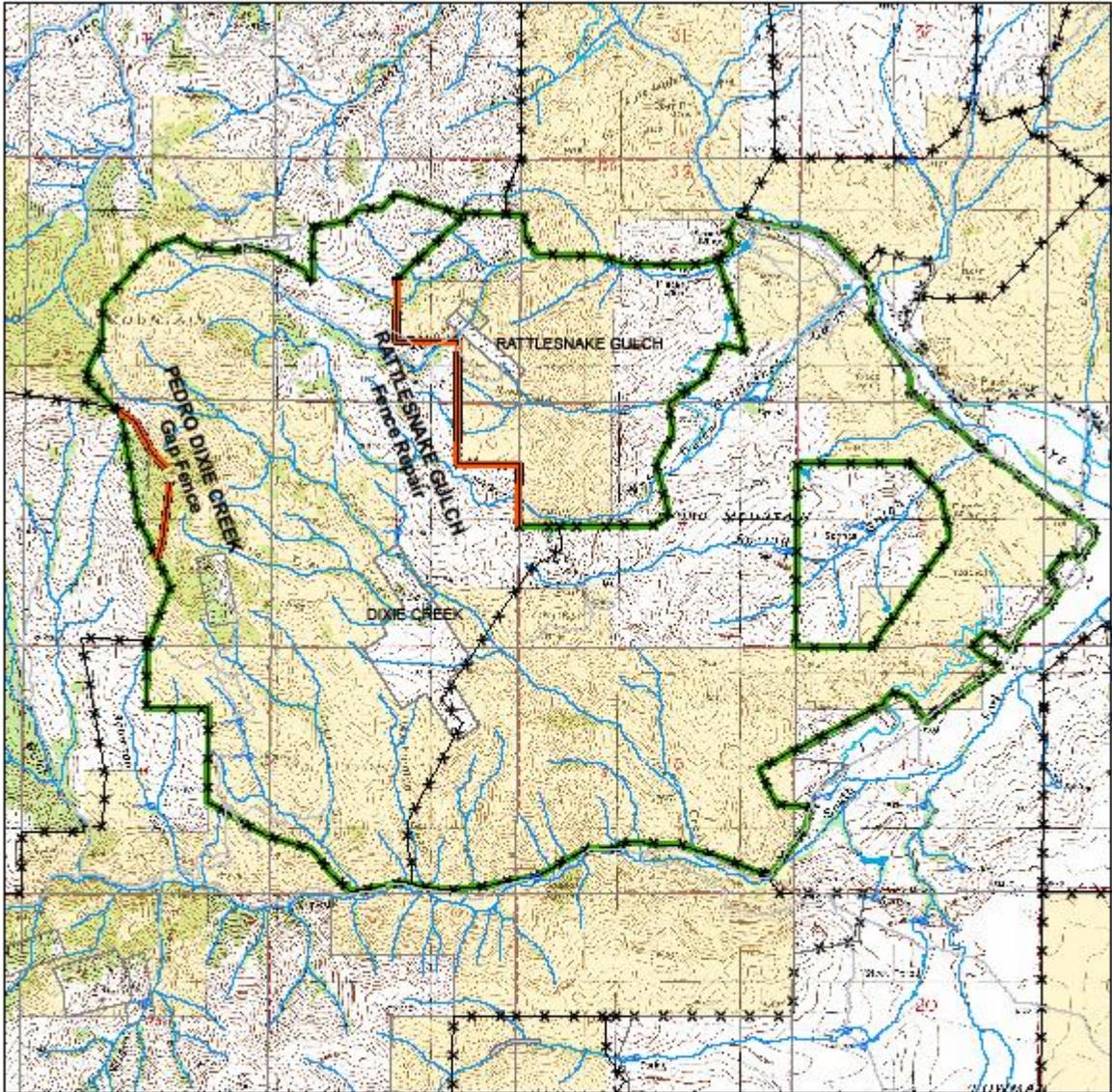
12/18/2008

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

0 0.25 0.5 Miles
0 0.1 0.2 0.4 Kilometers

 Vicinity Map

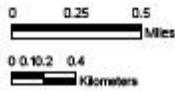
12.2.5 Map 5



**Dixie Creek/Rattlesnake Gulch Allotments
Proposed Projects**

Legend

-  Proposed Projects
-  Bureau of Land Management
-  U.S. Forest Service
-  Private



U.S. Department of Interior
Bureau of Land Management

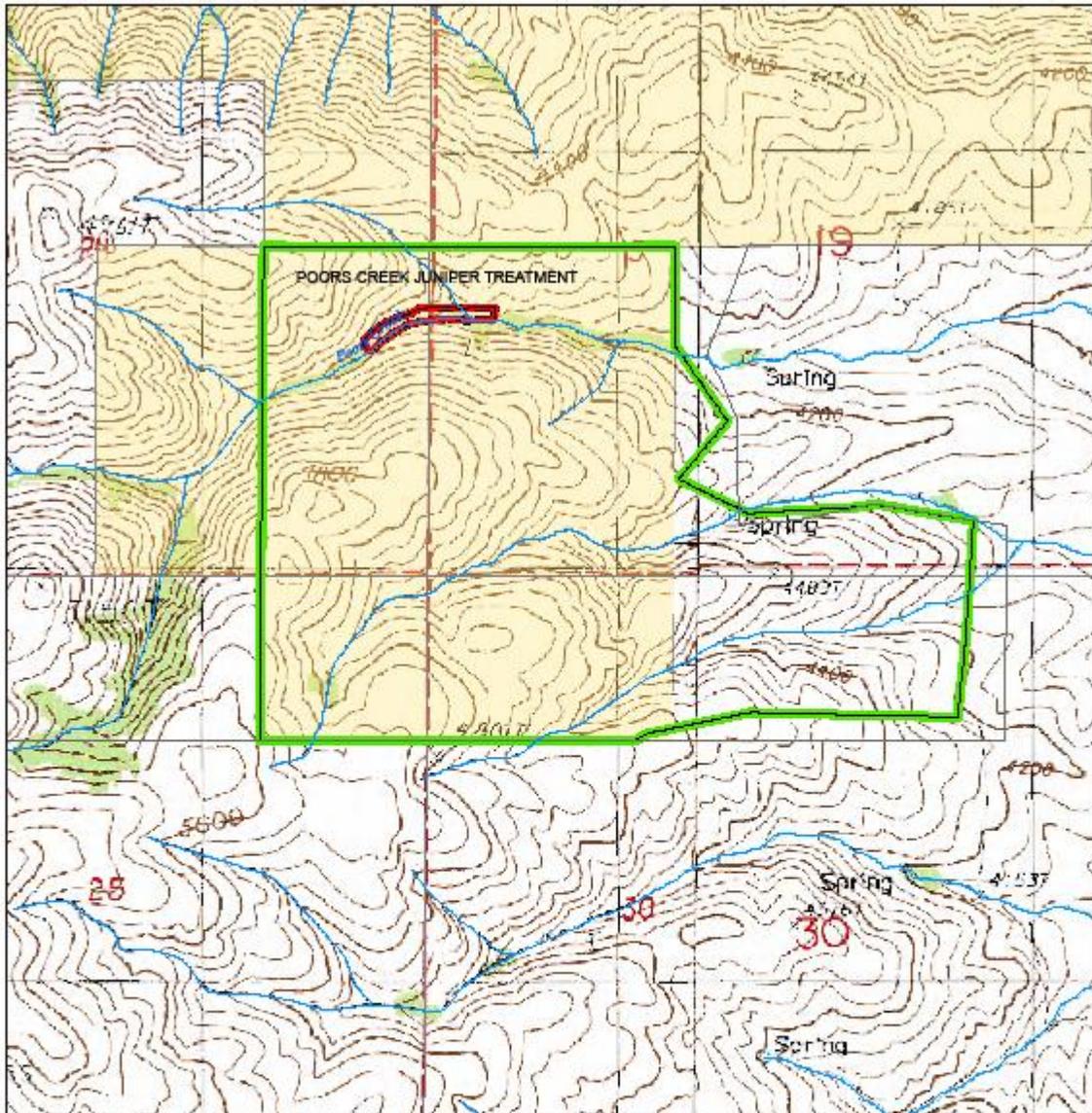


Vale District Baker Resource Area

12/18/2008

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

12.2.6 Map 6

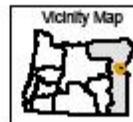
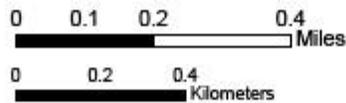


**Bowman Flat Allotment
Poor's Creek
Juniper Thinning Project**

U.S. Department of Interior
Bureau of Land Management

Legend

- Bureau of Land Management
- U.S. Forest Service
- Private

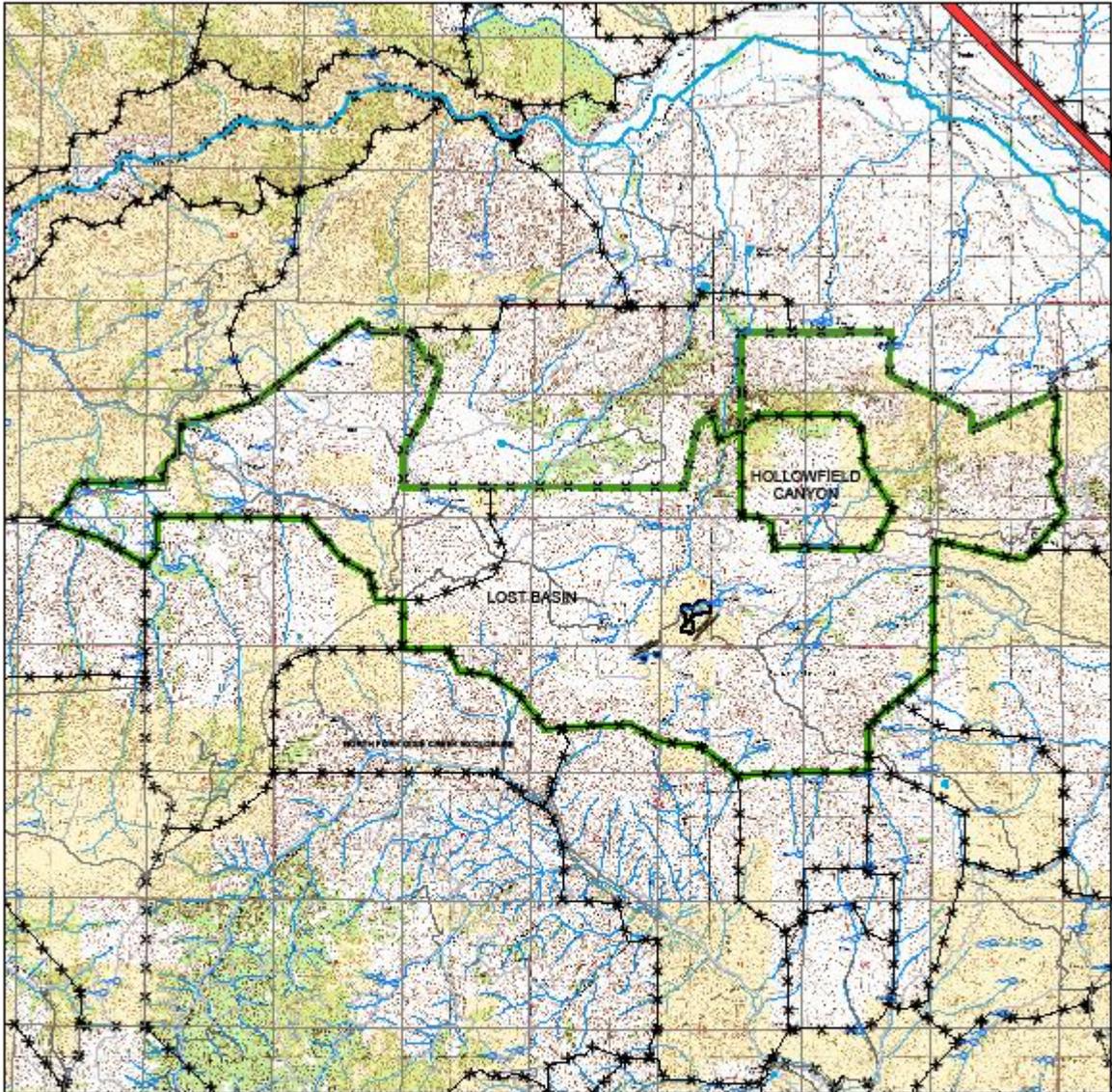


Vale District Baker Resource Area

12/17/2008

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

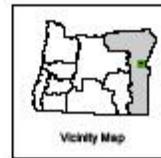
12.2.7 Map 7



**Lost Basin and Hollowfield Canyon Allotments
Proposed Projects**

Legend

-  Proposed Projects
-  Bureau of Land Management
-  U.S. Forest Service
-  Private



U.S. Department of Interior
Bureau of Land Management

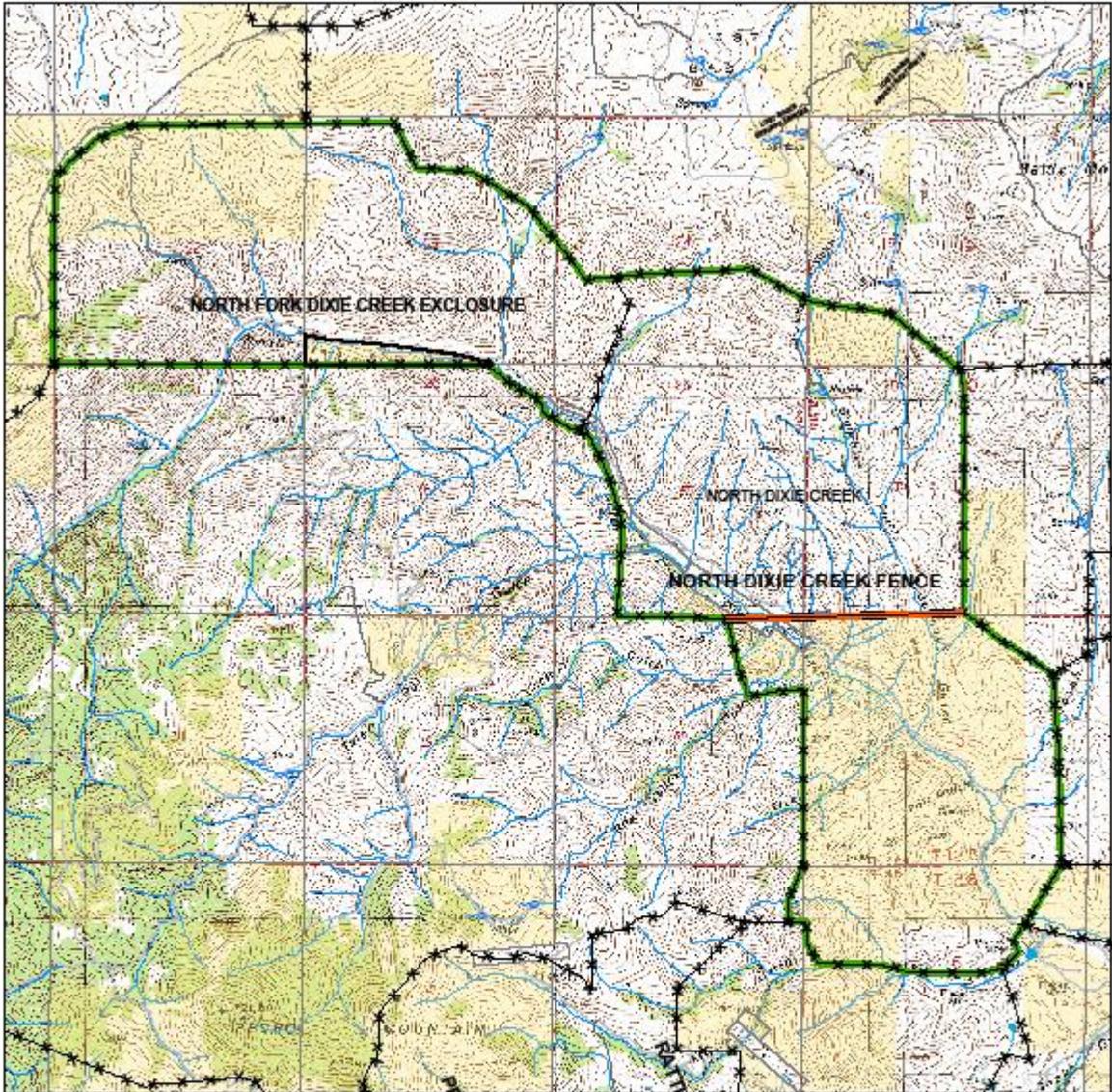


Vale District Baker Resource Area

12/18/2008

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

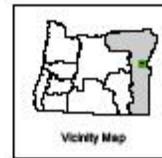
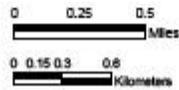
12.2.8 Map 8



**North Dixie Creek Allotment
Proposed Project**

Legend

-  Proposed Projects
-  Bureau of Land Management
-  U.S. Forest Service
-  Private



U.S. Department of Interior
Bureau of Land Management

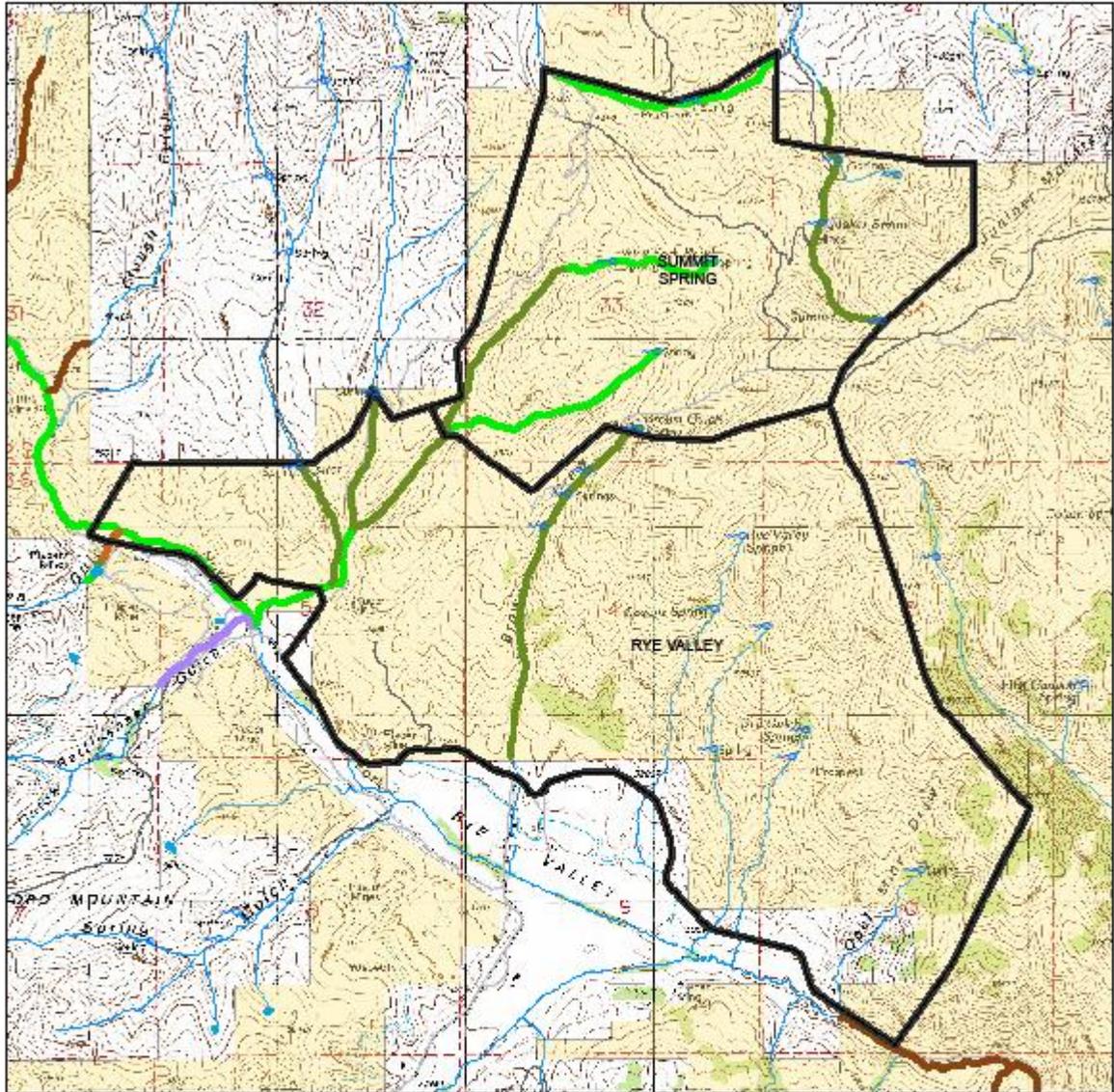


Vale District Baker Resource Area

12/18/2008

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

12.2.9 Map 9



**Summit Springs and Rye Valley Allotments
PFC Rating**

Legend

- F - Functional
- FARD - Functional-at-Risk Downward Trend
- FARN - Functional-at-Risk Trend Not Apparent
- FARU - Functional-at-Risk Upward Trend
- NF - Nonfunctional
- U - Unknown

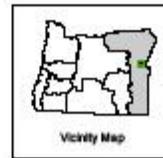
Bureau of Land Management

U.S. Forest Service

Private

0 0.2 0.4
Miles

0 0.2 0.4 0.8
Kilometers



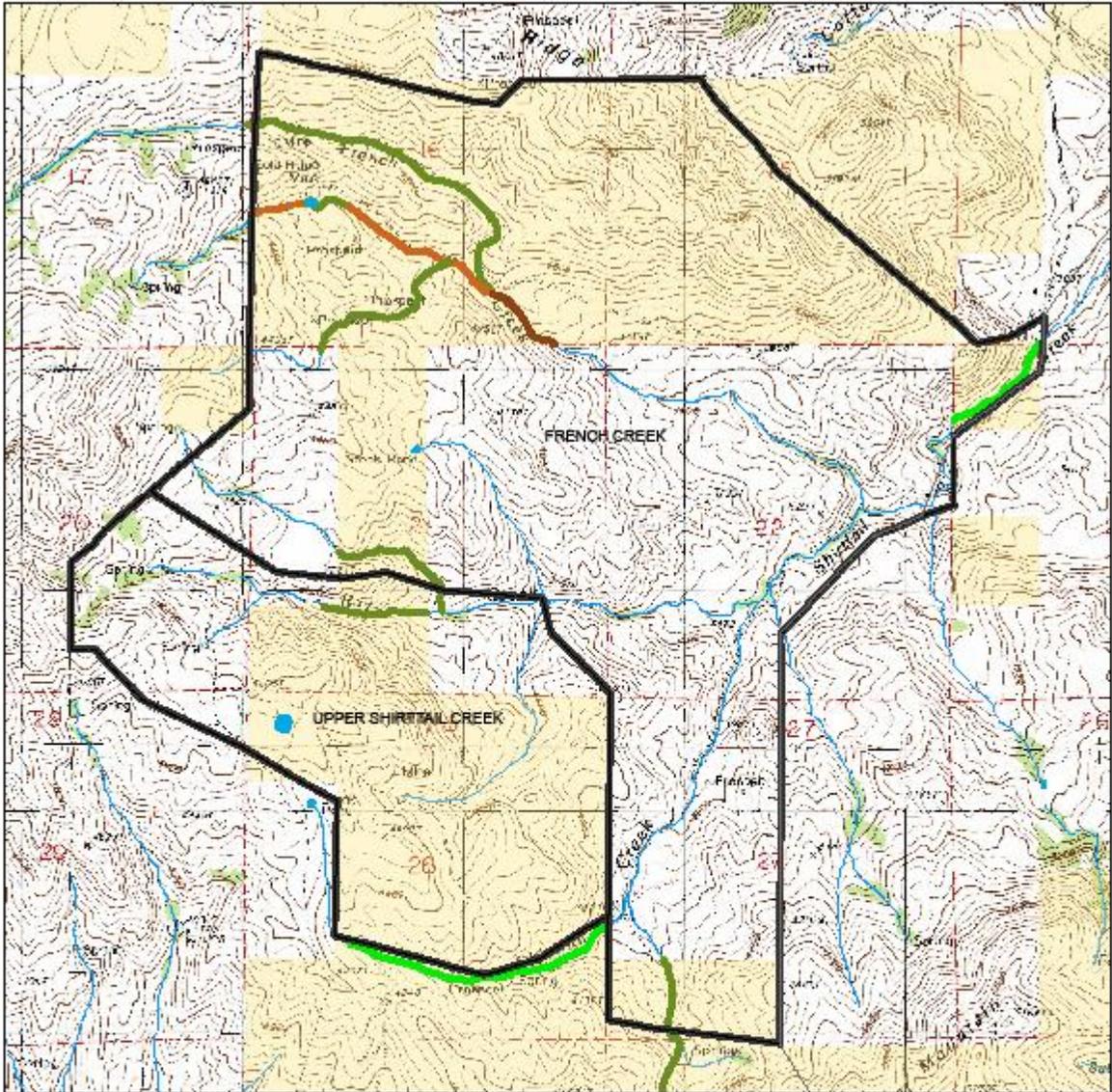
U.S. Department of Interior
Bureau of Land Management



Vale District Baker Resource Area

12/18/2008

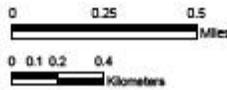
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.



**French Creek and Upper Shirttail Allotments
PFC Rating**

Legend

- █ F - Functional
- █ FARD - Functional-at-Risk Downward Trend
- █ FARN - Functional-at-Risk Trend Not Apparent
- █ FARU - Functional-at-Risk Upward Trend
- █ NF - Nonfunctional
- █ U - Unknown
- Bureau of Land Management
- U.S. Forest Service
- Private



U.S. Department of Interior
Bureau of Land Management

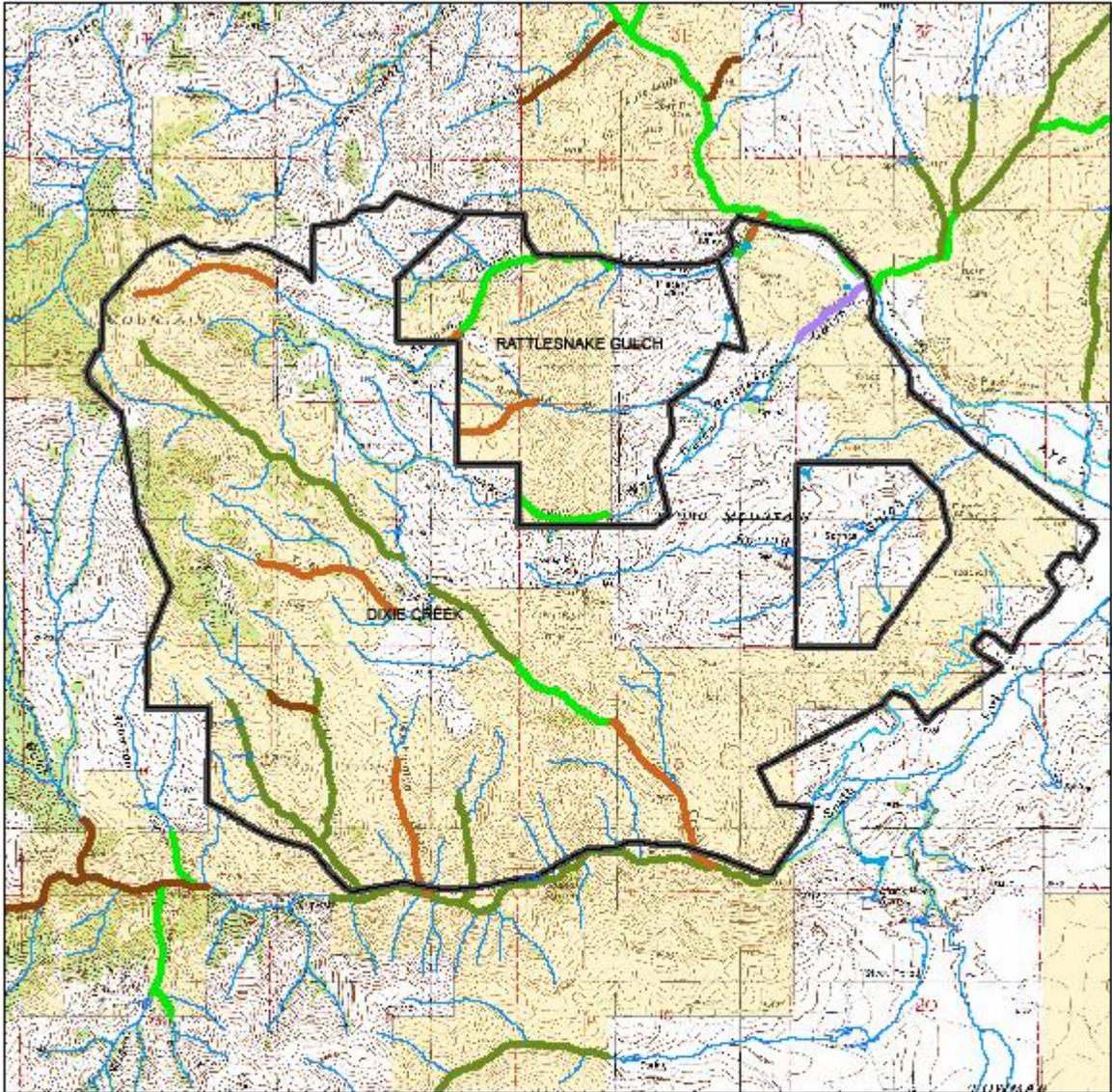


Vale District Baker Resource Area

12/18/2008

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

12.2.1 Map 11



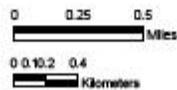
**Dixie Creek/Rattlesnake Gulch Allotments
PFC Rating**

Legend

PFC Ratings

- F - Functional
- FARD - Functional-at-Risk Downward Trend
- FARN - Functional-at-Risk Trend Not Apparent
- FARU - Functional-at-Risk Upward Trend
- NF - Nonfunctional
- U - Unknown

- Bureau of Land Management
- U.S. Forest Service
- Private



U.S. Department of Interior
Bureau of Land Management

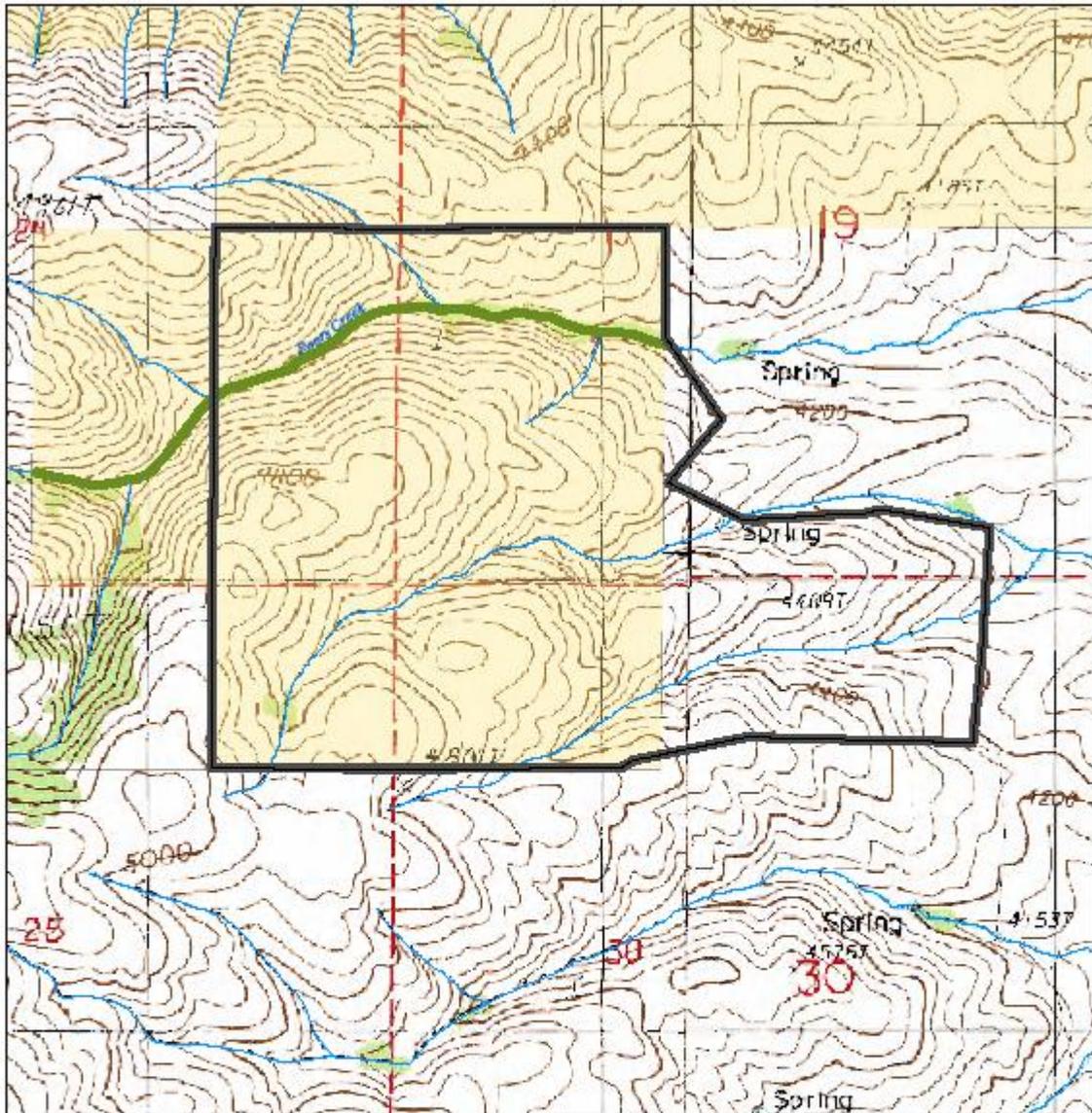


Vale District Baker Resource Area

12/18/2008

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

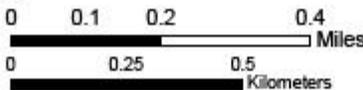
12.2.1 Map 12



**Bowman Flat Allotment
Poores Creek PFC Rating**

Legend

- F - Functional
- FARD - Functional-at-Risk Downward Trend
- FARN - Functional-at-Risk Trend Not Apparent
- FARU - Functional-at-Risk Upward Trend
- NF - Nonfunctional
- U - Unknown
- Bureau of Land Management
- U.S. Forest Service
- Private



U.S. Department of Interior
Bureau of Land Management

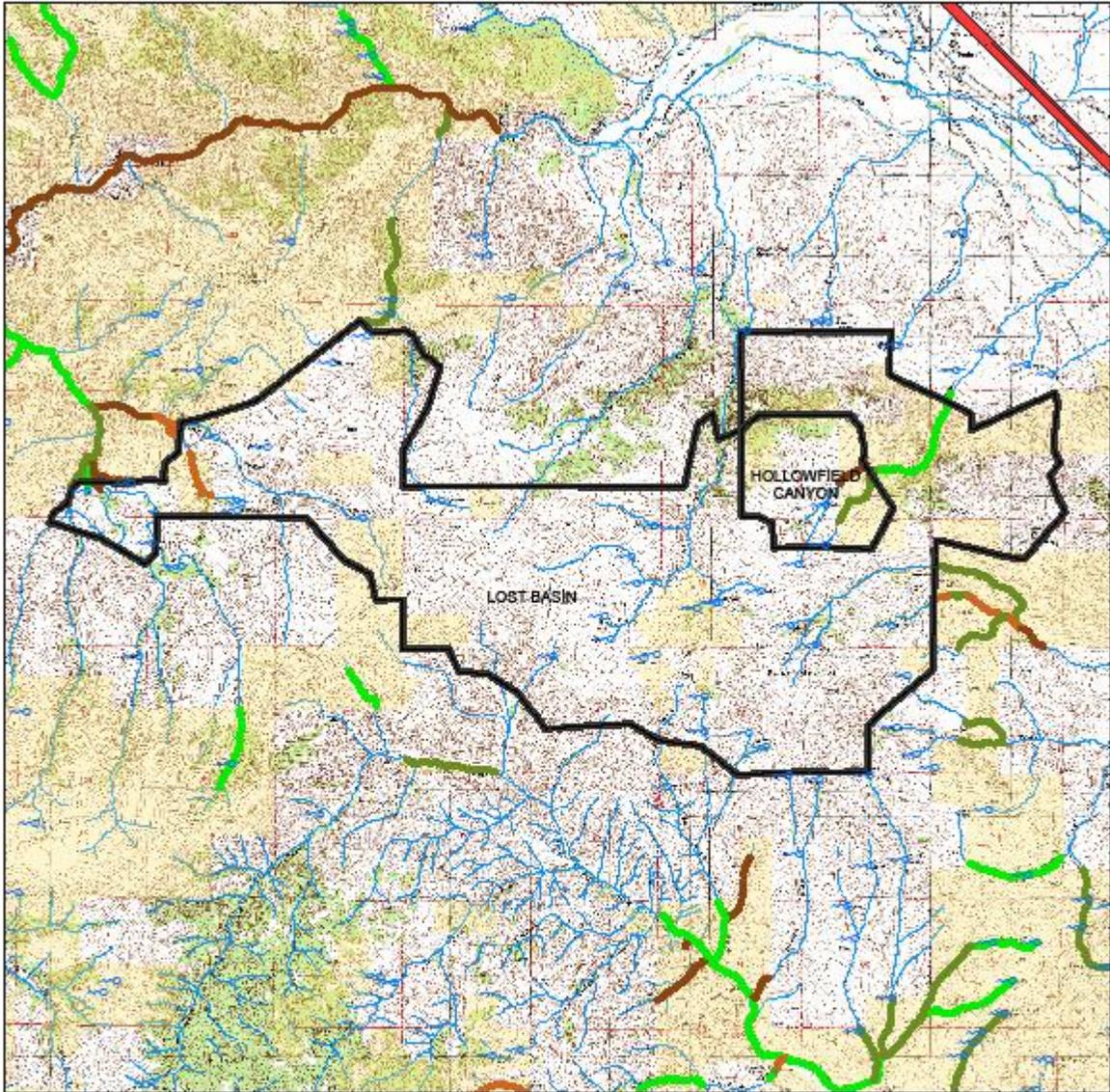


Vale District Baker Resource Area

12/17/2008

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

12.2.2 Map 13

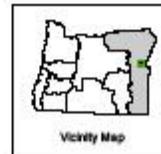
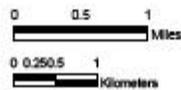


**Lost Basin and Hollowfield Canyon Allotments
PFC Rating**

Legend

- F - Functional
- FARD - Functional-at-Risk Downward Trend
- FARN - Functional-at-Risk Trend Not Apparent
- FARU - Functional-at-Risk Upward Trend
- NF - Nonfunctional
- U - Unknown

- Bureau of Land Management
- U.S. Forest Service
- Private



U.S. Department of Interior
Bureau of Land Management

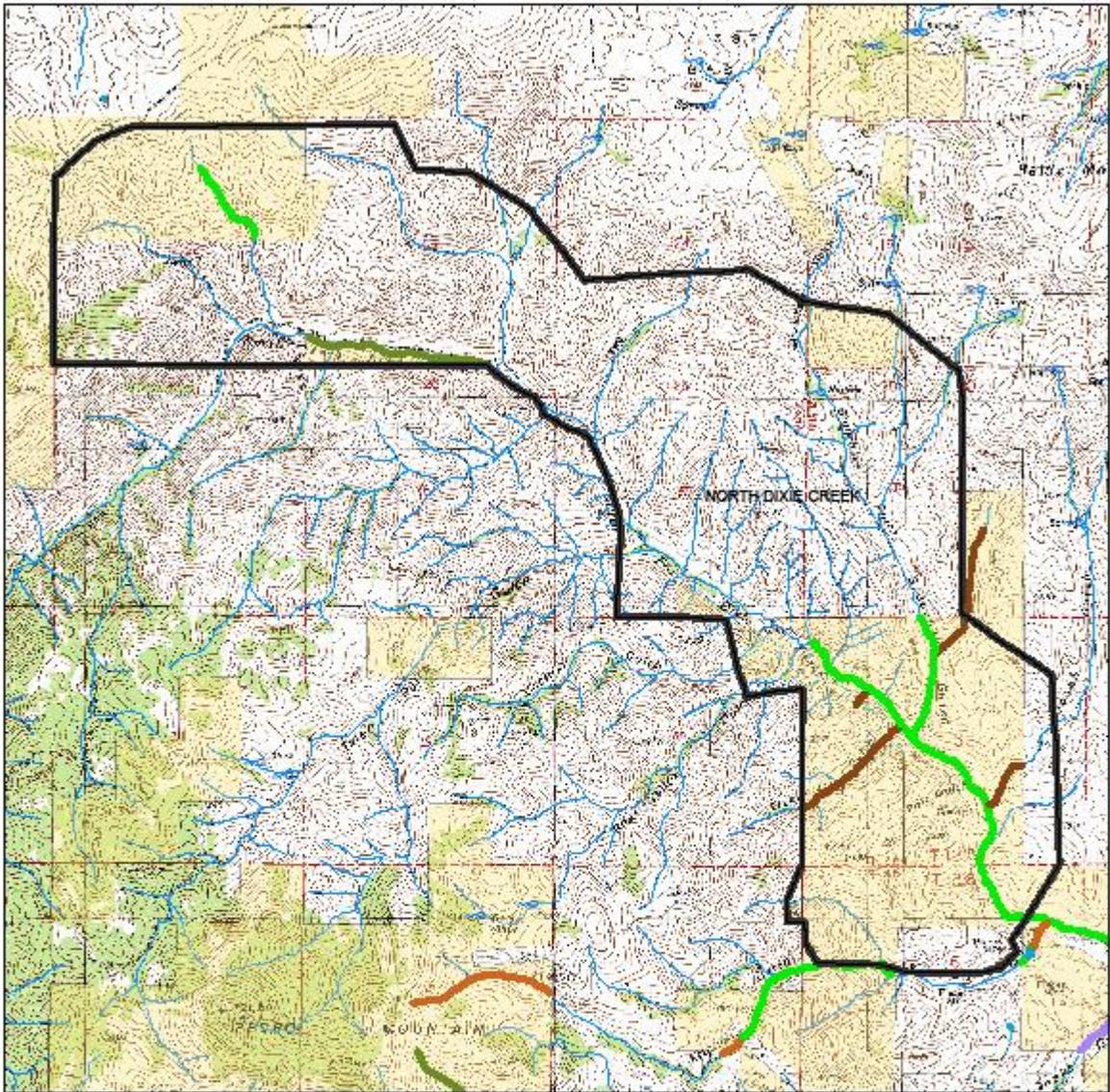


Vale District Baker Resource Area

12/18/2008

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

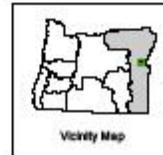
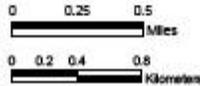
12.2.3 Map 14



**North Dixie Creek Allotment
PFC Rating**

Legend

- F - Functional
 - FARD - Functional-at-Risk Downward Trend
 - FARN - Functional-at-Risk Trend Not Apparent
 - FARU - Functional-at-Risk Upward Trend
 - NF - Nonfunctional
 - U - Unknown
- Bureau of Land Management
 - U.S. Forest Service
 - Private



U.S. Department of Interior
Bureau of Land Management



Vale District Baker Resource Area

12/18/2008

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