Baker Field Office

Draft Resource Management Plan and Environmental Impact Statement

U.S. Department of Interior
Bureau of Land Management

Volume 1

Chapters 1,2 and 3

BLM

Vale District

2011

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

Prepared by
Baker Resource Area
Vale District
October 2011

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Baker Field Office
P.O. Box 947
Baker City, Oregon 97814

IN REPLY REFER TO:

1610 (ORV050) P

Dear Reader:

Enclosed for your review and comment is the Draft Resource Management Plan/Draft Environmental Impact Statement (Draft RMP/EIS) for the Oregon Bureau of Land Management Baker Field Office. BLM prepared this document in consultation with cooperating agencies, and in accordance with the National Environmental Policy Act of 1969 (NEPA), the Federal Land Policy and Management Act of 1976 (FLPMA), implementing regulations, the BLM's land use planning handbook (H-1601-1), and other applicable law and policy.

The Planning Area consists of about 8,744,987 acres of land which includes about 428,425 acres of public lands managed by the Baker Field Office. These public lands are, collectively, referred to as the "Decision Area." The Decision Area is located in portions of Baker, Union, Wallowa, Malheur, Morrow, and Umatilla Counties in Oregon and Asotin County in Washington. When approved, this RMP will replace the Baker RMP of 1989 for the lands within the Decision Area and will guide the management of public lands administered by the Baker Field Office into the future. The Baker RMP and supporting information are available on the project website at: www.blm.gov/or/districts/vale/plans/bakerrmp.

The BLM encourages the public to provide information and comments pertaining to the analysis present in the Draft RMP/EIS. We are particularly interested in feedback on the proposed alternatives, the analysis of their respective management decisions, and any new information that would help the BLM as it develops the plan. In developing the Proposed RMP/Final EIS, which is the next phase of the planning process, the decision maker may select various management decisions from each of the alternatives analyzed in the Draft RMP/EIS for the purpose of creating a management strategy that best meets the needs of the resources and values in this area. As a member of the public, your timely comments on the Baker Draft Resource Management Plan will help the BLM formulate the Proposed RMP/Final EIS. Comments will be accepted for ninety (90) calendar days following the Environmental Protection Agency's (EPA) publication of the Notice of Availability in the Federal Register. The BLM can best utilize your comments and resource information submissions if received within the review period.

Comments may be submitted electronically at: BLM_OR_BK_RMP@blm.gov. Comments may also be submitted by mail to: P.O. Box 947, Baker City, OR 97814. To facilitate the analysis of comments and information submitted, we strongly encourage you to submit comments in an electronic format.

Your review and comments on the content of this document are critical to the success of this planning effort. We request that you make your comments as specific as possible.

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

Public meetings to provide an overview of the document, respond to questions, and take public comments will be announced by local media and public mailings at least 15 days in advance of the scheduled date.

Copies of the Draft RMP/EIS have been sent to affected Federal, state, and local government agencies and Tribal governments. Copies of the Draft RMP/EIS are available for public inspection at the following BLM locations:

Baker Field Office – Bureau of Land Management
3285 11th Street
Baker City, OR 97814

Vale District Office - Bureau of Land Management
100 Oregon Street
Vale, OR 97918

Oregon State Office - Bureau of Land Management
333 SW First Avenue
Portland, OR 97204

Thank you for your interest in the Baker Resource Management Plan. We appreciate the information and suggestions you contribute to the planning process. For additional information or clarification regarding this document or the planning process, please contact myself or Marc Pierce, Acting Assistant Field Manager, at 541-523-1256 or by e-mail at: BLM_OR_BK_RMP@blm.gov.

Sincerely,

Ted Davis

Ted Davis
Field Manager

Enclosure

Table of Contents

VOLUME 1

Summary **S-1**
A. Introduction S-1
B. Purpose and Need for the Resource Management Plan Revision S-1
C. Planning Issues Developed Identified Scoping S-2
1. Key Issues S-2
a. Key issue 1: Landscape Health/Land Use S-2
b. Key Issue 2: Renewable Energy Development S-2
c. Key Issue 3: Transportation and Access S-2
d. Key Issue 4. Livestock Grazing S-3
D. Alternatives S-3
1. The No Action Alternative S-3
a. Landscape Health S-3
b. Renewable Energy Development S-4
c. Transportation and Access S-4
d. Livestock Grazing S-4
2. The Action Alternatives S-4
a. Common to all Action Alternatives S-4
b. Alternative 1 ..... S-5
c. Alternative 2 ..... S-7
d. Alternative 3 ..... S-8
e. Alternative 4 ..... S-10
f. Alternative 5 ..... S-11
g. Alternative 5a S-12
3. Comparison of Alternatives S-13
E. Environmental Impacts S-16

Chapter 1. Introduction **1-1**
A. Purpose and Need for the Resource Management Plan Revision 1-1
1. Purpose 1-1
2. Need 1-3
a. New and Revised Polices and Guidance/Changes in Management Direction 1-4
b. Changing Conditions/New Data and Considerations 1-4
B. Planning Area and Map 1-5
1. Planning Area 1-5
2. Watersheds 1-9
C. Scoping/Issues 1-10
1. Public Scoping 1-10
2. Issues Addressed 1-10

a. Issues Used to Develop Alternatives 1-11
b. Other Issues Addressed in the EIS 1-14

D. Planning Guidance 1-17
1. Planning Criteria 1-17
2. Legislative and Regulatory Constraints 1-19
3. Relationship to BLM Policies, Plans, and Programs 1-19

E. Planning Process 1-21

F. Collaboration and Coordination 1-22
1. Cooperating agencies 1-22
2. Tribal Governments 1-23
3. Relationship to Other Plans 1-23

Chapter 2. Alternatives 2-1

A. Introduction 2-1
1. Development of the Alternatives 2-2
a. No Action Alternative 2-2
b. Action Alternatives 2-3

B. Description of the Action Alternatives 2-7
1. Alternative 1 (Preferred) 2-7
2. Alternative 2 2-11
3. Alternative 3 2-14
4. Alternative 4 2-17
5. Alternative 5 2-21
6. Alternative 5a 2-24
7. Alternative Summary 2-24

C. Action Alternatives Considered but not Analyzed in Detail 2-28

D. Resource Management Programs not Addressed by Alternatives 2-29
1. Paleontological Resources 2-29
2. Caves and Karsts 2-30
3. Backcountry Byways 2-30
4. Wilderness Areas 2-30
5. National Historic Trails 2-31

E. Action Alternatives Decision Tables 2-31
1. Summary of Environmental Consequences 2-208

Chapter 3. Affected Environment 3-1

A. Introduction 3-1

B. Resources 3-2
1. Climate 3-2
a. Current Conditions 3-2

b. Trends 3-4
2. Air Quality 3-7
a. Current Conditions 3-7
b. Trends 3-11
3. Water Resources 3-12
a. Current Condition 3-13
b. Trends 3-24
4. Soil Resources 3-27
a. Current Condition 3-27
b. Trends 3-31
5. Vegetative Communities 3-32
a. Current Condition 3-32
b. Trends 3-49
6. Invasive Species 3-56
a. Current Conditions 3-56
b. Trends 3-65
7. Fisheries (Including Special Status Fish Species) 3-68
a. Current Conditions 3-68
b. Trends 3-83
8. Wildlife 3-87
a. Current Condition 3-87
b. Trends 3-104
9. Special Status Species (Plants) 3-109
a. Current Condition 3-109
b. Trends 3-123
10. Special Status Species (Wildlife) 3-127
a. Current Conditions 3-127
b. Trends 3-143
11. Fire and Fuels Management 3-155
a. Current Condition 3-158
b. Trends 3-165
12. Cultural Resources 3-165
a. Current Condition 3-165
b. Trends 3-171
13. Resources of Importance to Native American Tribes 3-172
a. Current Conditions and Trends 3-172
14. Visual Resources 3-176
a. Current Condition 3-177
b. Trends 3-179
15. Lands with Wilderness Characteristics 3-179
a. Current Condition 3-180
b. Trends 3-182

C. Resource Uses 3-182
1. Facilities 3-183

a. Current Conditions 3-183
b. Trends 3-183
2. Forestry and Woodland Products 3-184
a. Current Conditions 3-184
b. Trends 3-187
3. Livestock Grazing 3-188
a. Current Conditions 3-188
b. Trends 3-192
4. Minerals 3-192
a. Current Conditions 3-192
b. Trends 3-198
5. Recreation 3-199
a. Current Conditions 3-199
b. Trends 3-206
6. Transportation and Access 3-211
a. Current Condition 3-211
b. Trends 3-213
7. Land Tenure 3-214
a. Current Conditions 3-214
b. Trends 3-216
8. Land Use Authorizations 3-217
a. Current Conditions 3-217
b. Trends 3-218
9. Public Access 3-219
a. Current Conditions 3-219
b. Trends 3-219
10. Withdrawals 3-219
a. Current Conditions 3-219
b. Trends 3-220

D. Special Designations 3-221
1. Areas of Critical Environmental Concern 3-221
a. Current Condition 3-222
b. Trends 3-230
2. Wild and Scenic Rivers 3-234
a. Current Conditions 3-234
b. Trends 3-237
3. Wilderness Study Areas 3-238
a. Current Conditions 3-238
b. Trends 3-240

E. Social and Economic Conditions 3-241
1. Socioeconomics 3-241
a. Current Conditions and Trends 3-241
2. Environmental Justice 3-266
a. Current Conditions and Trends 3-266

3. Public Safety 3-267
a. Current Conditions and Trends 3-267

List of Tables

Summary

Table S.1. Alternative Summary Table S-14

Chapter 1

Table 1-1. Land Surface Administration (in Acres) for the Baker Resource, Planning, and Decision Areas 1-8
Table 1-2. Decision Area Acres by County 1-8
Table 1-3. HUC 4 Watersheds in the Planning Area 1-9
Table 1-4. Acres and Subbasins (HUC 4) within the Planning Area 1-9
Table 1-5. Land Use Planning Process Steps 1-21

Chapter 2

Table 2-1. Factors and Conditions to be Considered before Mandating Rest from Grazing 2-9
Table 2-2. Alternative Summary Table 2-25
Table 2-3. Climate Change 2-33
Table 2-4. Air Quality 2-34
Table 2-5. Water Resources 2-36
Table 2-6. Soil Resources 2-41
Table 2-7. Vegetative Communities 2-44
Table 2-8. Invasive Species 2-58
Table 2-9. Fisheries (Includes Special Status Aquatic Species) 2-61
Table 2-10. Wildlife 2-65
Table 2-11. Special Status Species 2-73
Table 2-12. Fire and Fuels Management 2-81
Table 2-13. Cultural Resources and Resources of Importance to Native American Tribes 2-84
Table 2-14. Visual Resources 2-89
Table 2-15. Lands with Wilderness Characteristics 2-103
Table 2-16. Facilities 2-107
Table 2-17. Forestry and Woodland Products 2-108
Table 2-18. Proposed Sale Quantity and Treatment Acres Calculation Table 2-118
Table 2-19. Livestock Grazing 2-119
Table 2-20. Grazing Allotments and Areas/Allotments Unavailable For Grazing 2-127
Table 2-21. Minerals 2-130
Table 2-22. Recreation 2-135
Table 2-23. Travel and Transportation 2-142
Table 2-24. Lands and Realty 2-147
Table 2-25. Areas of Critical Environmental Concern (Existing) 2-157
Table 2-26. Areas of Critical Environmental Concern (Proposed) 2-193
Table 2-27. Wild and Scenic Rivers 2-203
Table 2-28. Wilderness Study Areas 2-205
Table 2-29. Public Safety 2-206

Chapter 3

Table 3-1. Estimated Tons of Carbon Stored above Ground in the Decision Area 3-5
Table 3-2. HUC 4 Watersheds in the Planning Area 3-12
Table 3-3. Acres and Subbasins (HUC 4) within the Planning Area 3-13
Table 3-4. Steam Distance and Flow Type by Subbasin within the Decision Area 3-14
Table 3-5. Acres of Public Lands within Source Water Protection Areas 3-17
Table 3-6. Subbasin TMDL Status as of July 2009 3-18
Table 3-7. TMDL Status by Subbasin for Streams in the Decision Area 3-19
Table 3-8. PFC Survey Results for BLM Streams within the Subbasins (2002-2009) 3-21
Table 3-9. Lentic PFC surveys (2006-2008) 3-23
Table 3-10. Roads within 100 Feet of Streams 3-23
Table 3-11. Road Density in the Decision Area by Subbasin 3-24
Table 3-12. Vulnerability to Water Erosion 3-29
Table 3-13. Site-Potential and Current Plant Communities in the Decision Area 3-33
Table 3-14. Upland Rangeland Health Standards 3-34
Table 3-15. PFC Assessment (2002 to 2009) 3-35
Table 3-16. Rangeland trends as of March 1986 (in acres) 3-49
Table 3-17. Rangeland trends as of March 2008 (in acres) 3-49
Table 3-18. Invasive Plants Designated Noxious According to the ODA and Counties in the Planning Area 3-58
Table 3-19. Modes of Thermally Induced Fish Mortality 3-69
Table 3-20. Native Fish Species in the Planning Area 3-69
Table 3-21. Non-Native Fish Species in the Planning Area 3-70
Table 3-22. Key Habitat Features Necessary for Healthy Fish Populations 3-71
Table 3-23. Special Status Fish Species 3-72
Table 3-24. Special Status Fish Species by Subbasin 3-73
Table 3-25. Key Wildlife Habitat Features for Common and Special Status Vertebrates 3-88
Table 3-26. Amount of Big Game Animal, Cougar, and Black Bear Acers and Habitat 3-95
Table 3-27. Neotropical Migratory Bird Species Likely To Occur Within the Decision Area 3-102
Table 3-28. Wildlife Habitat Trends and Reasons for the Expected Trends 3-105
Table 3-29. Sensitive Vascular Plants Documented in the Decision Area 3-111
Table 3-30. Strategic Vascular Plant Species in the Decision Area 3-122
Table 3-31. Strategic Moss, Liverworts, and Fungus Species in the Decision Area 3-122
Table 3-32. Number of Locations and Acreages for Special Status Plants in the Decision Area 3-124
Table 3-33. Special Status Species (Wildlife) Occurrence within the Planning and Decision Areas 3-128
Table 3-34. Four Scales (Orders) of Habitat Selection by Sage-grouse According to Johnson (1980) 3-138
Table 3-35. Mid-scale habitat indicators and relationship to habitat suitability for sage-grouse habitats according to Stiver et al. (2010) 3-138
Table 3-36. Historic Fire Regime Definitions 3-155
Table 3-37. FRCC Descriptions 3-158
Table 3-38. Baker FO Fire History 3-158

Table 3-39. Fire Frequency, 1980-2007 ... 3-159
Table 3-40. Fire Ignitions by Source, 1980-2007 ... 3-159
Table 3-41. Natural Fire Regime in the Planning Area ... 3-161
Table 3-42. Dominant Vegetation/BpS Historic Fire Regimes ... 3-162
Table 3-43. Cultural Plant Ecological Groupings (Ethno-Habitats) ... 3-174
Table 3-44. Current VRM Management Classes in the Decision Area ... 3-177
Table 3-45. Current VRI Inventory Classification in the Decision Area 2010 ... 3-178
Table 3-46. BLM Wilderness Characteristic Inventory Units ... 3-181
Table 3-47. USFS Potential Wilderness Areas and Adjoining BLM Units ... 3-182
Table 3-48. Developed/Semi-developed Recreation Areas in the Decision Area ... 3-183
Table 3-49. Results of Baker RMP Forest Inventory ... 3-185
Table 3-50. Section 3 Grazing Permits and Section 15 Grazing Leases ... 3-191
Table 3-51. Recreation Visitation (2009) - Number Recreation Area Annual Visitors ... 3-200
Table 3-52. Ten-Year Visitation in the Decision Area (1998-2009) ... 3-200
Table 3-53. Visitation by Type of Use (2009) ... 3-200
Table 3-54. Miles of Roads, Primitive Roads and Trails in the Planning and Decision Areas ... 3-211
Table 3-55. Road Mileage and Density within the Decision Area-2010 ... 3-212
Table 3-56. Lands Acquired Along the Grande Ronde River from LWCF Monies ... 3-216
Table 3-57. Existing ACECs in the Baker FO Planning Area ... 3-223
Table 3-58. Designated WSRs in the Decision Area ... 3-234
Table 3-59. Summary of the Baker RMP Planning Area WSR Eligibility Review ... 3-237
Table 3-60. Existing WSAs in the Decision Area ... 3-238
Table 3-61. Racial and Hispanic Composition of 2000 Population and the Change since 1990 ... 3-243
Table 3-62. Share of Population Living Below Poverty Level and Change Between 1989 and 1999 ... 3-248
Table 3-63. Estimated Annual Employment Contribution by Resource Program ... 3-250
Table 3-64. Estimated Annual Labor Income Contribution by Resource Program ... 3-251
Table 3-65. Annual AUM Authorizations in the Planning Area ... 3-252
Table 3-66. Baker FO Expenditures and Employment ... 3-259

List of Figures

Chapter 3

Figure 3-1. 2006 Baker City Air Quality Summary ... 3-8
Figure 3-2. 2006 La Grande Air Quality Summary ... 3-9
Figure 3-3. PM10 trend for Eastern Oregon Cites using the Second Highest 24 hr Average ... 3-11
Figure 3-4. Actual and projected population change for counties within the analysis area ... 3-242
Figure 3-5. Analysis area industry employment distribution, 2006 ... 3-244
Figure 3-6. Employment history of the analysis ... 3-245
Figure 3-7. Average Annual Unemployment Rates of Six-County Economic Analysis Area ... 3-247
Figure 3-8. Economic Analysis Area Labor Income Distribution ... 3-249
Figure 3-9. Total Harvest and Harvests by Agency within The Analysis Area ... 3-254

Figure 3-10. Share of BLM harvest from total harvest within the analysis area 3-255
Figure 3-11. Annual Payments in Lieu of Taxes received by Planning Area counties 3-257
Figure 3-12. BLM entitlement acreages within Planning Area counties 3-258

List of Maps

Chapter 1

Map 1-1. Baker FO Planning Area 1-6
Map 1-2. Mineral and Surface Estate on CD
Map 1-3. Subbasins and Water Quality on CD

Chapter 2

Map 2-1. VRM: No Action Alternative 2-92
Map 2-2. VRM: Alternative 1 2-94
Map 2-3. VRM: Alternative 2 2-96
Map 2-4. VRM: Alternative 3 2-98
Map 2-5. VRM: Alternatives 4 and 5 2-100
Map 2-6. Lands with Wilderness Characteristics ..... on CD
Map 2-7. Recreation Management Areas 2-140
Map 2-8. Recreation Opportunity Spectrum ..... on CD
Map 2-9. Travel Management, No Action Alternative ..... on CD
Map 2-10. Travel Management, Alternatives 1 & 5 ..... on CD
Map 2-11. Travel Management, Alternative 2 ..... on CD
Map 2-12. Travel Management, Alternative 3 ..... on CD
Map 2-13. Travel Management, Alternative 4 ..... on CD
Map 2-14. Land Tenure Classification Zones ..... on CD
Map 2-15. Avoidance/Exclusion Areas, No Action Alternative ..... on CD
Map 2-16. Avoidance/Exclusion Areas, Alternative 1 ..... on CD
Map 2-17. Avoidance/Exclusion Areas, Alternative 2 ..... on CD
Map 2-18. Avoidance/Exclusion Areas, Alternative 3 ..... on CD
Map 2-19. Avoidance/Exclusion Areas, Alternative 4 ..... on CD
Map 2-20. Avoidance/Exclusion Areas, Alternative 5 ..... on CD
Map 2-21. Mineral Withdrawal, No Action Alternative ..... on CD
Map 2-22. Mineral Withdrawal, Alternatives 1 & 4 ..... on CD
Map 2-23. Mineral Withdrawal, Alternative 2 ..... on CD
Map 2-24. Mineral Withdrawal, Alternative 3 ..... on CD
Map 2-25. Mineral Withdrawal, Alternative 5 ..... on CD
Map 2-26. ACECs, Existing and Proposed ..... on CD
Map 2-27. Joseph Creek ACEC 2-180
Map 2-28. Grand Ronde River ACEC 2-181
Map 2-29. Proposed Lime Hill/Mount Wilson RNA 2-182
Map 2-30. Keating Riparian ACEC/RNA 2-183
Map 2-31. Powder River ACEC 2-184
Map 2-32. Unity Bald Eagle ACEC 2-185
Map 2-33. Hunt Mountain ACEC, No Action Alternative 2-186
Map 2-34. Hunt Mountain ACEC, Alternatives 1, 3, 4, &5 2-187

Map 2-35. Oregon Trail ACEC 2-188
Map 2-36. Oregon Trail ACEC, NHOTIC 2-189
Map 2-37. Sheep Mountain ACEC 2-190
Map 2-38. Homestead ACEC 2-191
Map 2-39. South Fork Walla Walla River ACEC 2-192
Map 2-40. Maggie Peak ACEC/RNA 2-199
Map 2-41. Denny Flat ACEC 2-200
Map 2-42. Virtue Flat ACEC 2-201
Map 2-43. Snake River Goldenweed ACEC/RNA 2-202

Chapter3
Map 3-1. Planning Area Geology ..... on CD
Map 3-2. Soils Sensitive to Water Erosion ..... on CD
Map 3-3. Soils Sensitive to Wind Erosion ..... on CD
Map 3-4. Sagebrush Communities 3-36
Map 3-5. Forested Lands 3-44
Map 3-6. Invasive Weeds 3-66
Map 3-7. Listed Fish Species Habitat ..... on CD
Map 3-8. Critical Habitat (Fish) ..... on CD
Map 3-9. Big Game Range 3-98
Map 3-10. Greater Sage-grouse Key Habitat on ..... CD
Map 3-11. Sage-grouse distribution in the Western U.S. ..... on CD
Map 3-12. FRCC Codes and WUI Zones ..... on CD
Map 3-13. Fire History 3-156
Map 3-14. Livestock Grazing Allotments, All ..... on CD
Map 3-15. Livestock Grazing Allotments, South ..... on CD
Map 3-16. Rangeland Health Standards ..... on CD
Map 3-17. Existing Mining Claims 3-196
Map 3-18. Historic Mineral Areas ..... on CD
Map 3-19. Existing Transportation Network, North ..... on CD
Map 3-20. Existing Transportation Network, South ..... on CD
Map 3-21. Existing Transportation Network, West ..... on CD
Map 3-22. Existing ROWs ..... on CD
Map 3-23. Wind Energy Potential ..... on CD

VOLUME 2

Chapter 4. Environmental Consequences 4-1

A. Introduction 4-1
1. Analytical Assumptions and Guidelines 4-1
2. Incomplete or Unavailable Information 4-2
3. Types of Impacts 4-2

B. Impacts to Resources 4-3
1. Climate 4-3

a. Indicators, Methods, and Assumptions 4-3
b. Impacts to Climate 4-5
c. Cumulative Impacts 4-16
2. Air Quality 4-19
a. Indicators, Methods, and Assumptions 4-19
b. Impacts to Air Quality 4-21
c. Cumulative Impacts 4-25
3. Water Resources 4-26
a. Indicators, Methods, and Assumptions 4-27
b. Impacts to Water Resources 4-29
c. Cumulative Impacts 4-60
4. Soil Resources 4-66
a. Indicators, Methods, and Assumptions 4-67
b. Impacts to Soils 4-69
c. Cumulative Impacts 4-95
5a. Vegetative Communities (Rangeland and Riparian) 4-99
a. Indicators, Methodology and Assumptions 4-99
b. Impacts to Vegetative Communities (Rangeland and Riparian) 4-104
c. Cumulative Impacts 4-158
5b. Vegetative Communities (Forest Vegetation) 4-185
a. Indicators, Methodology and Assumptions 4-185
b. Impacts to Forest Vegetation 4-186
c. Cumulative Impacts 4-212
6a. Invasive Species (Invasive Plants and Noxious Weeds) 4-216
a. Indicators, Methods, and Assumptions 4-216
b. Impacts to Invasive Plants and Noxious Weeds 4-218
c. Cumulative Impacts 4-241
6b. Invasive Species (Terrestrial and Aquatic Animals) 4-244
a. Indicators, Methods, and Assumptions 4-244
b. Impacts to Invasive Species (Terrestrial and Aquatic Animals) 4-246
c. Cumulative Impacts 4-252
7. Fisheries (Including Special Status Species) 4-254
a. Indicators, Methods, and Assumptions 4-254
b. Impacts to Fisheries 4-262
c. Cumulative Impacts 4-303
8. Wildlife 4-312
a. Indicators, Methods, and Assumptions 4-314
b. Impacts to Wildlife 4-317
c. Cumulative Impacts 4-342
9. Special Status Species (Plants) 4-359
a. Indicators, Methods, and Assumptions 4-360
b. Impacts to Special Status Plants 4-362
c. Cumulative Impacts 4-384
10. Special Status Species (Aquatic Species) 4-388
11. Special Status Species (Wildlife) 4-388

a. Indicators, Methods, and Assumptions 4-388
b. Impacts to Special Status Species (Wildlife) 4-392
c. Cumulative Impacts 4-451
12. Fire and Fuels Management 4-491
a. Indicators, Methods, and Assumptions 4-491
b. Impacts to Fire and Fuels Management 4-494
c. Cumulative Impacts 4-505
13. Cultural Resources and Resources of Importance to Native American Tribes 4-507
a. Indicators, Methods, and Assumptions 4-508
b. Impacts to Cultural Resources and Resources of Importance to Native American Tribes 4-513
c. Cumulative Impacts 4-557
14. Visual Resources 4-563
a. Indicators, Methods, and Assumptions 4-564
b. Impacts to Visual Resources 4-566
c. Cumulative Impacts 4-592
15. Lands with Wilderness Characteristics 4-578
a. Indicators, Methods, and Assumptions 4-579
b. Impacts to Lands with Wilderness Characteristics 4-580
c. Cumulative Impacts 4-592

C. Impacts to Resource Uses 4-595
1. Facilities 4-595
a. Indicators, Methods, and Assumptions 4-595
b. Impacts to Facilities 4-596
c. Cumulative Impacts 4-604
2. Forest and Woodland Products 4-606
a. Indicators, Methodology and Assumptions 4-606
b. Impacts to Forest and Woodland Products 4-589
c. Cumulative Impacts 4-618
3. Livestock Grazing 4-622
a. Indicators, Methods, and Assumptions 4-622
b. Impacts to Livestock Grazing 4-624
c. Cumulative Impacts 4-650
4. Minerals 4-652
a. Indicators, Methods, and Assumptions 4-653
b. Impacts to Minerals 4-655
c. Cumulative Impacts 4-674
5. Recreation 4-677
a. Indicators, Methods, and Assumptions 4-678
b. Impacts to Recreation 4-679
c. Cumulative Impacts 4-701
6. Travel and Transportation 4-704
a. Indicators, Methods, and Assumptions 4-704
b. Impacts to Travel and Transportation 4-706

c. Cumulative Impacts 4-720
7. Lands and Realty 4-725
a. Indicators, Methods, and Assumptions 4-727
b. Impacts to Lands and Realty 4-729
c. Cumulative Impacts 4-755

D. Impacts to Special Designations 4-761
1. Areas of Critical Environmental Concern and Research Natural Areas 4-761
a. Indicators, Methods, and Assumptions 4-762
b. Impacts to ACECs/RNAs 4-765
c. Cumulative Impacts 4-780
2. Wild and Scenic Rivers 4-784
a. Indicators, Methods, and Assumptions 4-786
b. Impacts to WSRs 4-788
c. Cumulative Impacts 4-796
3. Wilderness Study Areas 4-798
a. Indicators, Methods, and Assumptions 4-799
b. Impacts to WSAs 4-800
c. Cumulative Impacts 4-807

E. Impacts to Social and Economic Conditions 4-809
1. Socioeconomics 4-809
a. Indicators, Methodology and Assumptions 4-809
b. Impacts to Economic Conditions 4-813
c. Impacts to Social Conditions 4-843
d. Cumulative Impacts 4-861
2. Public Health and Safety 4-865
a. Indicators, Methods, and Assumptions 4-865
b. Impacts to Public Health and Safety 4-866

Chapter 5. Consultation and Coordination 5-1

A. Introduction 5-1

B. Cooperating Agencies 5-1
1. Tribal Involvement 5-2
2. Local Government 5-3
3. State Government 5-3
4. Federal Government 5-4
5. Resource Advisory Council 5-4

C. Public Involvement 5-5
1. Information Sharing 5-6

D. List of Preparers 5-6

List of Tables

Chapter 4

Table 4-1. Estimated Annual Average CO2 Equivalent Production Metric Ton/Year 4-6
Table 4-2. RMA Acres for the No Action Alternative 4-187
Table 4-3. RMA Acres for Alternative 2 compared to the No Action Alternative 4-201
Table 4-4. RMA Acres for Alternative 4 compared to the No Action Alternative 4-206
Table 4-5. Number of Documented Locations of Sensitive Plants in the Decision Area and in ACECs 4-372
Table 4-6. Impact Analysis Criteria and Impacts Analyzed for Special Status Species 4-388
Table 4-7. Comparison between VRI and VRM Classes in the Decision Area 4-565
Table 4-8. VRI Protection Percent (%) by Alternative 4-565
Table 4-9. Road Ownership in the Decision Area 4-720
Table 4-10. Estimated Annual Employment Contribution by Resource Program 4-724
Table 4-11. Estimated Annual Labor Income Contribution by Resource Program 4-725
Table 4-12. ACEC Acres by Alternative 4-762
Table 4-13. RNA acre by Alternative (Included within ACEC Acres Total) 4-763
Table 4-14. BLM Outputs per Alternative 4-813
Table 4-15. Potential Acres Treated per Decade by Prescribed Dire, Wildland Fire, and Other Methods 4-816
Table 4-16. Payments to Counties under the Alternatives (2009 dollars) 4-817
Table 4-17. Average Annual Employment Contribution by Sector and Alternative 4-819
Table 4-18. Average Annual Labor Income Contribution by Sector and Alternative (Thousands of 2011 dollars) 4-821
Table 4-19. Average Annual Employment1 by Program by Alternative (Full and Part-time Jobs) 4-824
Table 4-20. Average Annual Labor Income by Program by Alternative (Thousands of 2011 dollars) 4-824
Table 4-21. ACEC, WSR, and Lands with Wilderness Characteristics 4-825
Table 4-22. Social Indicators per Alternatives 4-844

Chapter 5

Table 5-1. Tribes, Agencies and Governments Approached for Cooperator Status 5-1
Table 5-2. List of Preparers 5-7
Table 5-3. List of Contributors 5-8

List of Figures

Chapter 4

Figure 4-1. Influences on stream channels at a range of spatial and temporal scales (Montgomery and Buffington 1998) 4-259
Figure 4-2. Relationship between recovery time and sensitivity to disturbance for different spatial scales (Frissell et al. 1986; Naiman 1998; Naiman et al. 1992b) 4-260
Figure 4-3. A hierarchy of spatial scales and terms for managing watersheds and aquatic and riparian resources 4-261

VOLUME 3

List of Appendices

Chapter 1
Appendix 1.1. Laws, Regulations, And Policies that Apply to all Alternatives

Chapter 2
Appendix 2.1. Best Management Practices
Appendix 2.2. Aquatic and Riparian Management Strategy
Appendix 2.3. Livestock Grazing Systems
Appendix 2.4. Sagebrush Structure and Canopy Closure
Appendix 2.5. Determining Stocking Carrying Capacity
Appendix 2.6. Process for Relinquishment Of Preference
Appendix 2.7. Recreation Management Areas
Appendix 2.8. Extensive Recreation Management Area (Erma) Direction
Appendix 2.9. Area of Critical Environmental Concern Monitoring Form

Chapter 3
Appendix 3.1. 303(D) Listed Streams Within The Decision Area
Appendix 3.2. Comparison Between Rangeland Health Assessment and the Ironside Ecosite Inventory
Appendix 3.3. Sensitive Plant Species
Appendix 3.4. Fragstats Analysis of the Baker Subpopulation of Greater Sage-Grouse
Appendix 3.5. Current Livestock Grazing Allotments
Appendix 3.6. Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington
Appendix 3.7. 2010 Progress Report On Evaluations and Determinations of Rangeland Health by Allotment and Management Category
Appendix 3.8. Details on the Communication Sites Currently Located in the Decision Area
Appendix 3.9. Vale District Office Inventory of Potential Wild and Scenic Rivers in the Baker Resource Management Plan Planning Area

Literature Cited LC-1
Glossary G-1
Abbreviations and Acronyms AA-1

SUMMARY

A. INTRODUCTION

The U.S. Department of the Interior, Bureau of Land Management (BLM) is engaged in a planning process to update management direction for the portion of the State of Oregon administered by the BLM's Vale District, Baker Field Office (FO). This Planning Area includes parts of Baker, Union, Wallowa, Malheur, Morrow, and Umatilla counties in Oregon and Asotin County in Washington. The entire geographic region encompassed in the Planning Area includes approximately 8.7 million acres of public and private lands, of which the BLM administers approximately 428 thousand surface acres and 3.7 million subsurface/mineral-estate acres (refer to Map 1.2 and Table 1.1). These public lands are referred to as the Decision Area throughout this document.

The BLM manages public lands under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 United States Code §1701 et seq.) and other applicable laws. Land use planning regulations, given in 43 Code of Federal Regulations 1600, set forth procedures for the BLM to prepare land use plans and make planning decisions in accordance with FLPMA. These plans and decisions are the basis for every on-the-ground action the BLM undertakes. To ensure that management of public lands is consistent with the provisions of FLPMA and other applicable laws and policy guidance, the BLM prepares and periodically updates its land use plans, known as resource management plans (RMPs).

While the BLM makes decisions applicable only to public lands and the resources it administers (i.e., the Decision Area), the agency is responsible for collaboratively planning with adjacent jurisdictions and the public to encourage compatible land uses within a regional context (in this case, the Planning Area).

B. PURPOSE AND NEED FOR THE RESOURCE MANAGEMENT PLAN REVISION

The purpose of the Baker FO Draft RMP/Environmental Impact Statement (EIS) is to revise the current Baker RMP (BLM 1989) in order to address the growing needs of the Planning Area and provide a framework for future land management actions. The Draft RMP/EIS will consolidate and replace the current management guidance for the Decision Area and respond to changed conditions by identifying and carrying forward previous decisions that are still applicable and, where necessary, modify existing management direction.

The Baker RMP revision is needed to address significant and ongoing changes that have occurred since the signing of the Record of Decision for the 1989 Baker RMP that have altered the natural, social, political, and managerial environments within the Planning Area, including the following:

Increased pressure for access to and use of public lands due to regional population growth and urban expansion

Emerging recreational activities, many of which are based on recently developed technologies that have yielded new or improved recreational equipment, such as global-positioning-system units, off-highway vehicles (OHVs), and over-snow vehicles

Environmental changes that have occurred as a direct result of public land use, such as increased recreation, mineral development, and facility development

New or revised management responsibilities resulting from new legal and BLM policy requirements

New listings or de-listings of species under the Endangered Species Act or as BLM sensitive species

C. PLANNING ISSUES DEVELOPED IDENTIFIED SCOPING

A planning issue is a major issue, controversy, or dispute regarding management of resources on public lands that can be addressed in a variety of ways. Public scoping meetings and comment solicitation began on June 25, 2008 and ended on August 31, 2008. The planning team analyzed and categorized comments generated during the scoping period and categorized them in to four key issues that were used to develop the alternatives. These are identified below. The planning team also identified nine secondary issues that need to be addressed in this Draft RMP/EIS. These issues are discussed in Chapter 2 of the Draft RMP/EIS.

1. KEY ISSUES

a. Key issue 1: Landscape Health/Land Use

How should the diverse landscapes and resources within the Planning Area be managed?

What level of human alteration of the landscape and natural systems is acceptable?

Should change in landscape health be measured against current or historical conditions?

What is the desired range of conditions and how should they be achieved?

b. Key Issue 2: Renewable Energy Development

How should the Baker FO manage renewable energy development?

What areas should be open to renewable energy development?

Where should renewable energy development be restricted?

c. Key Issue 3: Transportation and Access

How should the Baker FO manage transportation and access?

Which existing routes should remain open, which should have limited access, and which should be closed to vehicular access and motorized use?

Should new routes and trails be created?

Should the BLM acquire legal access to isolated parcels of public land or sell those parcels due to lack of legal access?

d. Key Issue 4. Livestock Grazing

How will livestock grazing on public lands be addressed?
Should livestock grazing be restricted in certain areas?
Are there areas where livestock grazing could be increased?

D. ALTERNATIVES

This section summarizes the No Action Alternative and five action alternatives, plus one sub-alternative, for managing public lands in the Planning Area. The goal of developing alternatives is to prepare different combinations of management to address issues and to resolve conflicts among uses. Alternatives must meet the purpose and need; be reasonable; provide a mix of resource protection, use, and development; be responsive to the issues; and meet the established planning criteria. Each alternative is a complete land use plan that provides a framework for multiple use management of the full spectrum of resources, resource uses, and programs present in the Planning Area. Under all alternatives, the BLM would manage the public lands in accordance with all applicable laws, regulations, and BLM policy and guidance. Each alternative reflects intergovernmental and interagency collaboration, and public participation.

Below is a brief description of the main features of each of the alternatives for resolving the key issues associated with managing public lands within the Planning Area (i.e., Landscape Health, Renewable Energy Development, Transportation and Access, and Livestock Grazing). Chapter 2 of the Draft RMP/EIS provides a comprehensive description of each alternative, including management common to all alternatives.

1. THE NO ACTION ALTERNATIVE

The No Action Alternative is the current management situation for the Decision Area and serves as a baseline for most resource and land-use allocations. Selecting Alternative A for the Baker FO RMP would continue current management without change to land or public uses or resource management, and would not address issues that were unforeseen or nonexistent when the current Baker RMP was finalized in 1989.

a. Landscape Health

The BLM would manage rangeland vegetation to achieve greater amounts of mid or late seral conditions, dependent of Geographic Unit direction.
The BLM would set a 60 percent utilization limit on deferred rotation and rest rotation grazing systems on native range and a 65 percent utilization limit on the wheatgrass seedings. On rotational or spring/fall systems, the BLM would set utilization at 50

percent of annual forage production. A limit of 40 percent utilization would be used for continuous spring, spring/summer, and season-long grazing. The BLM designed these use objectives to fit the benefits of the various grazing systems while still maintaining and improving the vigor of the key species.

b. Renewable Energy Development

Wilderness areas and wild sections of wild and scenic river (WSR) segments would remain excluded from right-of-way (ROW) development.

c. Transportation and Access

The BLM would designate most of the Decision Area (287,611 acres) as "open" to cross-country travel. Some special management areas (SMAs) and specific roads or trails (3,594 acres) would be closed to motorized use. Travel on the remaining 138,042 acres would be limited to existing roads.

d. Livestock Grazing

The BLM would continue to authorize grazing on 388,510 acres and permit livestock use for 47,000 AUMS. Although the current Baker RMP (BLM 1989) authorized grazing on 418,601 acres with a grazing preference of 55,437 AUMs, changes have been made in land ownership, jurisdiction, and AUMs allotted since 1989 that has lead to a reduction in the number of acres grazed and AUMs. The need to meet or move towards meeting rangeland health standards also contribute to such changes.

The BLM would direct management of livestock grazing towards meeting or making considerable progress toward fulfillment of any rangeland health standards that have not been met (if not met due to existing livestock management actions) as directed by the Vale District Planning Update in 2000, which amended the current Baker RMP (BLM 1989).

2. THE ACTION ALTERNATIVES

a. Common to all Action Alternatives

While the management decisions under the five action alternatives and one sub-alternative vary, numerous decisions would be implemented under all of the alternatives. Many of these consist of management actions carried forward from the current planning document because they were found acceptable and reasonable under all the alternatives. Many management decisions are common among the alternatives because they reflect current policies, procedures, or other restrictions. The action alternatives also address the key issues as identified below.

Landscape Health

The BLM would maintain or enhance habitat connectivity and biodiversity, placing an emphasis on Wyoming big sagebrush and riparian vegetative communities.

Renewable Energy Development

The BLM would provide opportunities for the development of renewable energy resources while minimizing adverse impacts to other resource values.

Transportation and Access

All public lands within the Planning Area would be designated as open, closed, or limited to motorized and mechanical uses.

Livestock Grazing

The BLM would continue to direct the management of livestock grazing towards meeting or making considerable progress toward fulfillment of any rangeland health standards that have not been met (if not met due to existing livestock management actions) and to maintaining or improving conditions where rangeland health standards have been met.

b. Alternative 1

Alternative 1 emphasizes adaptive management to achieve long-term ecosystem health and resiliency while providing for a variety of resource uses. The BLM would promote management activities that maintain and/or restore ecosystem health and connectivity and place restoration emphasis on Wyoming big sagebrush and riparian habitats in areas where analysis has shown a degraded condition. Alternative 1 provides for a wide range of activities that benefit local, regional, and national economies. A broad use of tools would be available for resource restoration and stabilization, including biological, chemical, mechanical, prescribed fire, and natural processes, as appropriate to the specific ecosystem. Right-of-way development, which includes energy development, would face moderate restrictions and the BLM would pursue mineral withdrawal on a moderate number of acres.

Landscape Health

The BLM would reclaim the loss of Wyoming big sagebrush habitat at a ratio of 1:2 (e.g., for every acre taken out of production two acres would be reclaimed) for ROWs, leases, energy, and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain mahogany could be used as substitutes for Wyoming big sagebrush at the same ratio (1:2).

The BLM would manage Wyoming big sagebrush canopy cover, with an emphasis on enhancing sagebrush obligate wildlife habitat and ecosystem function. Priority areas

would include sage-grouse key habitat in the Powder River and Burnt River watersheds. Sagebrush management methods would primarily include mechanical or herbicidal treatments and, to a lesser degree, prescribed fire.

The BLM would reduce or maintain road density in native Wyoming big sagebrush communities to increase or maintain vegetation connectivity. Motorized primitive trails and roads in the Level II maintenance category or lower that do not receive use would be given priority for removal.

The BLM would base setting forage utilization targets on the grazing system, key plant growth stage, biotic crusts, and wildlife habitat.

Riparian stubble height targets would apply only to streams that flow at least ¼ -mile across public lands. The BLM would set the target for initial riparian stubble height at 3-4 inches for stream banks that are dry and stable to moderately vulnerable to impacts from livestock grazing, and 6-8 inches for those that are highly vulnerable to impacts from livestock grazing.

Renewable Energy Development

The BLM would exclude energy and non-energy related ROWs on 72,618 acres, including wilderness areas, wilderness study areas (WSAs), designated and suitable WSR corridors, the Oregon Trail Area of Critical Environmental Concern (ACEC; excluding National Historic Oregon Trail Interpretive Center [NHOTIC] administrative site uses), the proposed Virtue Flat ACEC, and identified lands with wilderness characteristics. In addition, the BLM would identify 32,299 acres as avoidance areas, including special status plant habitat, cultural sites, existing and proposed ACECs, NHOTIC scenic viewshed, relic sites, and Coyote Peak.

Transportation and Access

The BLM would designate Virtue Flat OHV Play Area consisting of 4,918 acres (1 percent of the Decision Area) as open to OHV use. Congressionally designated areas (wilderness, wild sections of WSRs, WSAs, and Oregon Trail); French Gulch; Sawmill Creek, Joseph Creek, Hunt Mountain, and Grande Ronde ACECs; and public lands with no legal public access, consisting of 83,214 acres (19 percent of the Decision Area), would be closed to motorized vehicle use. The BLM would also close specific areas to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 340,293 acres (80 percent of the Decision Area), would be limited to existing roads and trails.

Livestock Grazing

The BLM would authorize livestock grazing on 388,310 acres, with 40,115 acres unavailable for grazing. Initially, grazing preference would be 47,000 animal unit months (AUMs), changing to an estimated 41,500 AUMs with full implementation of the RMP.

c. Alternative 2

Alternative 2 emphasizes the sustainable development of natural resources, recognizing the public's need for domestic sources of minerals, energy, food, timber, and fiber from public lands, and protecting the custom, culture, and economic stability of local communities. While Alternative 2 adheres to all laws and policies and strives towards ecosystem health and maintaining or enhancing Wyoming big sagebrush and riparian habitats, it emphasizes development, recreational opportunities, livestock grazing, timber harvest, and other resource uses for economic gain. A broad set of tools would be available for resource restoration and stabilization, including biological, chemical, mechanical, prescribed fire, and natural processes where appropriate, feasible, and beneficial to the ecosystem. This alternative would place the fewest restrictions on ROW development (including energy development) and pursue no additional acres for mineral withdrawal.

Landscape Health

The BLM would reclaim the loss of Wyoming big sagebrush habitat at a ratio of 1:1 for ROWs, energy, and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain mahogany could be used in substitute of Wyoming big sagebrush at the same ratio (1:1). Restoration projects would be conducted in areas that would result in a net increase in livestock AUMs.

Where appropriate, the BLM would reduce Wyoming big sagebrush cover to improve perennial understory vegetation production for livestock use while maintaining or enhancing landscape-scale sagebrush obligate wildlife species habitat. The BLM would place the highest priority for sagebrush canopy cover reduction projects on grazing allotments that have more than 20 percent Wyoming big sagebrush canopy cover and a healthy understory of native grass. Prescribed burning, herbicide, and mechanical treatments would be the primary methods to treat sagebrush cover.

The BLM would maintain or increase road density in Wyoming big sagebrush communities.

The BLM would set a 60 percent utilization limit on deferred rotation and rest rotation grazing systems on native range, and 65 percent on the wheatgrass seedings. The utilization rate would be 50 percent of annual forage production on rotational or spring/fall systems and 40 percent for continuous spring, spring/ summer, and season long grazing. The BLM designed these use objectives to fit the benefits of the various grazing systems while still maintaining and improving the vigor of the key species.

Riparian stubble height targets would only apply to streams that flow at least 1 mile across public lands. The BLM would set the target for initial riparian stubble height at 2-3 inches for stream banks that are dry and stable to moderately vulnerable to livestock impacts, and 3-4 inches for those that are moderately to highly vulnerable to livestock impacts.

Renewable Energy Development

The BLM would exclude energy and non-energy related ROWs on 25,236 acres, including wilderness areas, WSAs, designated WSR corridors, and Oregon Trail ACEC (excluding NHOTIC administrative site uses). In addition, the BLM would identify 25,725 acres as avoidance areas, including special status plant habitat, cultural sites, NHOTIC, relic sites, and existing ACECs (minus Hunt Mountain).

Transportation and Access

The BLM would designate the Virtue Flat OHV Play Area, Denny Flat, and Sunday Hill, consisting of 22,074 acres (5 percent of the Decision Area), as open to OHV use. Wilderness, wild sections of WSRs, WSAs, and Sawmill Creek, Oregon Trail, Joseph Creek, and Grande Ronde ACECs, consisting of 39,109 acres (9 percent of the Decision Area), would be closed to motorized vehicle use. The BLM would also close specific areas to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 367,242 acres (86 percent of the Decision Area), would be limited to existing roads and trails.

Livestock Grazing

The BLM would authorize livestock grazing on 396,210 acres, with 32,215 acres unavailable for grazing. Initially, grazing preference would be 47,000 AUMs, changing to an estimated 47,350 AUMs with full implementation of the RMP.

d. Alternative 3

Alternative 3 emphasizes recreational use and opportunities on public lands for the enjoyment of present and future generations through a wide range of sustainable recreational activities. Management actions would focus on visitor experience, uses, facilities, and access, with provisions for a moderate amount of ecosystem health maintenance and/or restoration. The BLM would place restoration emphasis on Wyoming big sagebrush and riparian habitats in areas where analysis has shown a degraded condition. The wide range of recreational activities could benefit local, regional, and national economies. Alternative 3 allows for a broad use of tools for resource restoration and stabilization including biological, chemical, mechanical, prescribed fire, and natural processes where appropriate, feasible, and beneficial to the ecosystem. Right-of-Way development would experience moderate restrictions, and the BLM would pursue mineral withdrawal on a minimal number of acres.

Landscape Health

The BLM would reclaim the loss of Wyoming big sagebrush habitat at a ratio of 1:2 for ROWs, leases, energy, and transmission line projects. Restoration of aspen, bitterbrush,

willow, or mountain mahogany could be used as substitutes for Wyoming big sagebrush at the same ratio (1:2).

The BLM would emphasize enhancing sagebrush obligate wildlife habitat and ecosystem function when managing Wyoming big sagebrush canopy cover. Priority areas would include the sage-grouse habitat in the Powder River and Burnt River watersheds. Sagebrush management methods would primarily include mechanical or herbicide treatments and, to a lesser degree, prescribed fire.

The BLM would reduce or maintain road density in native Wyoming big sagebrush communities to increase or maintain vegetation connectivity. Motorized primitive trail and roads in Level II maintenance category or lower, without use, would receive priority for removal.

The BLM would set forage utilization targets on the grazing system, key plant growth stage, biotic crusts, and wildlife habitat.

Riparian stubble height targets would only apply to streams that flow at least 1/2 mile across public lands. The BLM would set the target for initial riparian stubble height at 2-3 inches for stream banks that are dry and stable, 3-4 inches for those that are moderately vulnerable to livestock impacts, and 6-8 inches for those that are highly vulnerable to livestock impacts.

Renewable Energy Development

The BLM would exclude energy and non-energy related ROWs on 40,500 acres, which includes wilderness areas, WSAs, designated and suitable WSR corridors, Oregon Trail ACEC (excluding NHOTIC administrative site uses), Virtue Flat OHV Play Area, and NHOTIC Scenic Viewshed. In addition, the BLM would identify 35,170 acres as avoidance areas, including special status plant habitat, cultural sites, relic sites, existing and proposed ACECs, and identified lands with wilderness characteristics.

Transportation and Access

The BLM would designate the Virtue Flat OHV Play Area, Denny Flat, and Sunday Hill, consisting of 22,074 acres (5 percent of the Decision Area), as open to OHV use. Congressionally mandated areas (wilderness, wild sections of WSRs, and WSAs); Sawmill Creek, Oregon Trail, Joseph Creek, Hunt Mountain, and Grande Ronde ACECs; and areas with no legal public access, consisting of 75,174 acres (18 percent of the Decision Area), would be closed to motorized vehicle use. The BLM would also close specific areas to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 331,177 acres (77 percent of the Decision Area), would be limited to existing roads and trails.

Livestock Grazing

The BLM would authorize livestock grazing on 380,165 acres, with 48,260 acres unavailable for grazing. Initial grazing preference would be 46,320 AUMs, changing to an estimated 35,500 AUMs with full implementation of the RMP.

e. Alternative 4

Alternative 4 focuses on aggressive protection and restoration measures to maintain or enhance native vegetation, biodiversity, and connectivity. It emphasizes management actions that are the quickest to move towards long-term ecosystem health and resiliency and promotes activities that maintain and/or restore ecosystem health. The BLM would focus on Wyoming big sagebrush and riparian habitats because these habitats are often in a degraded condition. Alternative 4 allows for a broad use of tools for resource restoration and stabilization, including biological, chemical, mechanical, prescribed fire, and natural processes where appropriate, feasible, and beneficial to the ecosystem. While livestock grazing could be used as a tool to achieve desired resource conditions, opportunities for livestock grazing and other resource commodity uses or development that benefit local, regional, and national economies would be limited or reduced under this alternative. Particular types of ROW development would face some substantial restrictions and the BLM would pursue mineral withdrawal on a moderate number of acres.

Landscape Health

The BLM would reclaim the loss of Wyoming big sagebrush habitat at a ratio of 1:3 for ROWs, leases, and energy and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain mahogany could also be used, but at a ratio of 1:2.
The BLM would manage Wyoming big sagebrush canopy cover with an emphasis on enhancing sagebrush obligate wildlife habitat and ecosystem function. Priority areas would include the sage-grouse key habitat in the Powder River and Burnt River watersheds. Sagebrush management methods methods would primarily include mechanical or herbicide treatments and, to a lesser degree, prescribed fire.
The BLM would reduce road density in native Wyoming big sagebrush communities to increase vegetation connectivity.
The BLM would set a light (21-40 percent) livestock grazing utilization standard.
The BLM would set riparian stubble height targets at 6-8 inches for all streams, which would apply only to streams that flow at least one-eighth of a mile across public lands.

.

Renewable Energy Development

The BLM would exclude energy and non-energy related ROWs on 81,152 acres, including wilderness areas, WSAs, designated and suitable WSR corridors, Oregon Trail ACEC (excluding NHOTIC administrative site uses), Virtue Flat ACEC, Denny Flat ACEC, and identified lands with wilderness characteristics. The BLM would designate a

5-mile exclusion area for wind development around all sage-grouse leks, totaling an additional 44,328 acres. In addition, the BLM would identify 153,941 acres as avoidance areas including special status species plant habitats, cultural sites, existing and proposed ACECs, NHOTIC scenic viewshed, relic sites, and Coyote Peak.

Transportation and Access

The BLM would designate the Virtue Flat OHV Play Area, consisting of 4,918 acres (1 percent of the Decision Area), as open to OHV use. Congressionally mandated areas (wilderness, wild sections of WSRs, WSAs, and Oregon Trail); French Gulch; Joseph Creek, Sawmill Creek, Hunt Mountain, Grande Ronde, and Virtue Flat ACECs; and areas with no legal public access, consisting of 124,515 acres (31 percent of the Decision Area), would be closed to motorized vehicle use. The BLM would also close specific areas to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 298,992 acres (68 percent of the Decision Area), would be limited to existing roads and trails.

Livestock Grazing

The BLM would authorize livestock grazing on 334,260 acres and identify 94,165 acres as unavailable for grazing. Initial grazing preference would be 42,150 AUMs, changing to an estimated 30,700 AUMs with full implementation of the RMP.

f. Alternative 5

Alternative 5 focuses on allowing natural processes to take place with an emphasis on "light on the land" management actions. The BLM would promote management activities that maintain and/or restore ecosystem health, including Wyoming big sagebrush and riparian habitat, only when such activities can be accomplished with minimal ground disturbance. Alternative 5 would limit the range of management tools available for resource restoration and stabilization and reduce or limit the range of activities that benefit local, regional, and national economies. Right-of-way development, including particular types of energy development, would face some substantial restrictions, and the BLM would pursue mineral withdrawal on a considerable number of acres.

Landscape Health

The BLM would reclaim the loss of Wyoming big sagebrush habitat from authorized BLM actions (e.g., facility developments, vegetation treatments, and route maintenance/ construction at a ratio of 1:3 and only reseed such reclaimed areas by aerial or broadcast methods. Aspen, bitterbrush, willow, or mountain mahogany could be used during reclamation efforts in substitution of Wyoming big sagebrush at a 1:2 ratio.

The BLM would emphasize enhancing sagebrush obligate wildlife habitat and ecosystem function when managing Wyoming big sagebrush communities, with natural processes

being the primary tool for such management. Priority areas would include the sage-grouse habitat in the Powder and Burnt river watersheds. Mechanical, herbicide, and, to a lesser degree, prescribed fire would be the primary sagebrush management methods. The BLM would only authorize non-ground-disturbing mechanical treatments and reduce road density in Wyoming big sagebrush communities to increase vegetation connectivity.

The BLM would set forage utilization targets for light use (21-40 percent).

The BLM would set riparian stubble height targets at 6-8 inches for all stream banks, which would only apply to streams that flow at least one-eighth of a mile across public lands. The BLM would not allow grazing on all 303 (d) streams.

Renewable Energy Development

The BLM would exclude energy and non-energy related ROWs on 104,982 acres, which includes wilderness areas, WSAs, designated and suitable WSR corridors, all existing and proposed ACECs (excluding NHOTIC administrative site uses), and identified lands with wilderness characteristics. The BLM would designate a 5-mile exclusion area for wind development around all sage-grouse leks, totaling an additional 141,973 acres. In addition, the BLM would identify 3,961 acres as avoidance areas, including special status plant habitat, cultural sites, NHOTIC scenic viewshed, relic sites, and Coyote Peak.

Transportation and Access

The BLM would designate the Virtue Flat OHV Play Area, consisting of 4,918 acres (1 percent of the Decision Area), as open to OHV use. Congressionally mandated areas; Oregon Trail; French Gulch; Joseph Creek, Sawmill Creek, Hunt Mountain, and Grande Ronde ACECs; and areas with no legal public access, consisting of 83,214 acres (19 percent of the Decision Area), would be closed to motorized vehicle use. The BLM would also close specific areas to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 340,293 acres (79 percent of the Decision Area), would be limited to existing roads and trails.

Livestock Grazing

The BLM would authorize livestock grazing on 263,915 acres, with 164,510 acres unavailable for grazing. Initially, grazing preference would be 35,760 AUMs, changing to an estimated 22,500 AUMs with full implementation of the RMP.

g. Alternative 5a

Alternative 5a is a sub-alternative of Alternative 5 that incorporates the same management actions as Alternative 5 except that all allotments that are currently available to grazing would be closed when current permits expire and no further grazing of domestic livestock would be permitted throughout the life of the RMP. All other management objectives, land use

allocations, and management actions would be the same as those proposed under Alternative 5, with the exception of those that specifically relate to livestock grazing.

3. COMPARISON OF ALTERNATIVES

Table S.1 below summarizes the primary differences between the alternatives.

Table S.1. Alternative Summary Table

Management Action	No Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5*
WATER RESOURCES						
Stream Restoration (miles)	N/A	50 miles/10 years	20 miles/10 years	40 miles/10 years	80 miles/10 years	80 miles/10 years
VEGETATIVE RESOURCES						
Loss of Wyoming big sagebrush habitat	N/A	Reclaimed at a 1:2 ratio	Reclaimed at a 1:1 ratio	Reclaimed at a 1:2 ratio	Reclaimed at a 1:3 ratio	Reclaimed at a 1:3 ratio
Minimum Riparian Stubble height (inches)	N/A	3-4 (stable streams) 6-8 (vulnerable streams)	2-3 (stable streams) 3-4 (vulnerable streams)	2-3 (stable streams) 3-4 (moderate) 6-8 (vulnerable)	6-8 (all streams)	6-8 (all streams) No grazing on all 303(d) streams
Minimum stream length on BLM for stubble height target	N/A	¼ mile	1 mile	½ mile	$^{1}/_{8}$ mile	$^{1}/_{8}$ mile
Decadal juniper reductions	N/A	5,000-20,000 acres	N/A, unless an economic benefit can be realized.	5,000-20,000 acres	15,000-30,000 acres	Limited to riparian and Wyoming big sagebrush areas
SPECIAL STATUS SPECIES (WILDLIFE)						
ROW exclusion acres for identified key sage-grouse habitat	N/A	41,563 acres for all ROWs	2,396 acres for all ROWs	13,295 acres for all ROWs	45,482 acres for all ROWs and 42,343 acres for wind development only	51,026 acres for all ROWs and 114,738 acres for wind development only
Wind development avoidance buffers for sage-grouse	N/A	Virtue Flat ACEC = exclusion area/3-mile for other leks avoided	2-mile for occupied leks	3-mile for occupied leks	5-mile within/ adjacent to Virtue Flat and Denny Flat ACECs; 3-mile for other occupied leks	N/A
VISUAL RESOURCES						
Visual Resource Management (VRM) Class I**	17,918 acres: 4 %	18,543 acres: 4 %	17,918 acres: 4 %	18,543 acres: 4 %	18,543 acres: 4 %	18,543 acres: 4 %
VRM Class II	144,215 acres: 33%	241,779 acres: 56%	109,096 acres: 25%	247,375 acres: 58%	247,495 acres: 58%	247,495 acres: 58%
VRM Class III	57,354 acres: 13%	142,544 acres: 33%	220,674 acres: 52%	136,946 acres: 32%	159,687 acres: 37%	159,687 acres: 37%
VRM Class IV	208,705 acres: 49%	25,558 acres: 6%	80,738 acres: 19%	25,560 acres: 6%	2,588 acres: 1%	2,588 acres: 1%
LANDS WITH WILDERNESS CHARACTERISTICS						
Acres managed to protect wilderness characteristics	N/A	13,223 acres	0 acres	13,223 acres	13,223 acres	13,223 acres

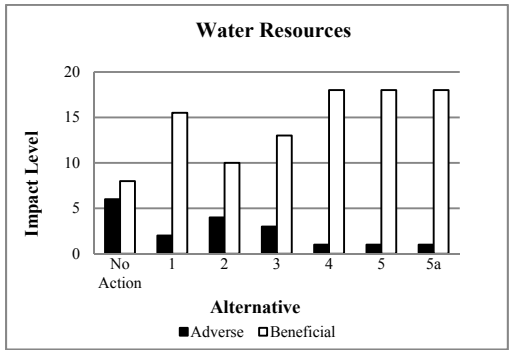
Table S.1. Alternative Summary Table

Management Action	No Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5*
LIVESTOCK GRAZING						
Acres available for grazing	418,601 acres	388,310 acres	396,210 acres	380,165 acres	334,260 acres	Alt. 5: 263,915 acres Alt. 5a: 0 acres
Acres unavailable for grazing	9,824 acres	40, 115 acres	32,215 acres	48,260 acres	94,165 acres	Alt. 5: 164,510 acres Alt. 5a: 428,425 acres
AUMs	55,437	47,000 initially 41,500 ultimately	47,000 initially 47,350 ultimately	46,320 initially 35,500 ultimately	42,150 initially 30,700 ultimately	Alt. 5: 35,760 initially 22,500 ultimately Alt. 5a: 0
TRANSPORTATION						
Open to OHV use	287,611 acres/67%	4,918 acres/1%	22,074 acres/5%	22,074 acres/5%	4,918 acres/1%	4,918 acres/1%
Limited to existing roads	138,042 acres/32%	340,293 acres /79%	367,242 acres/84%	331,177 acres/77%	298,992 acres/68%	340,293 acres/79%
Closed to motorized use	3,594 acres/1%	83,214 acres/19%	39,109 acres/9%	75,174 acres/18%	124,515 acres/31%	83,214 acres/19%
LANDS AND REALTY						
ROW Exclusion Areas (all types)	25,236 acres	72,618 acres	25,236 acres	40,500 acres	81,152 acres/Wind Only Exclusion 44,328 acres	104,982 acres/ Wind Only Exclusion 141,973 acres
Avoidance Areas	N/A	32,299 acres	25,725 acres	35,170 acres	153,941 acres	3,961 acres
Pursue mineral withdrawal	398 acres	20,096 acres	N/A	6,041 acres	20,096 acres	95,504 acres
AREAS OF CRITICAL ENVIRONMENTAL CONCERN						
Number/Acres of ACECs	10 existing 40,245 acres	8 existing/4 new 83,756 acres	7 existing 34,419 acres	10 existing/2 new 47,992 acres	10 existing/4 new 93,991 acres	10 existing/4 new 93,991 acres

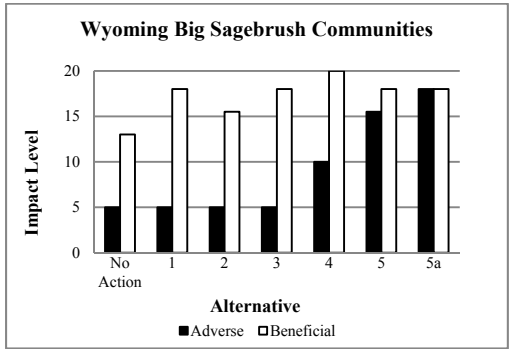
*Management actions and land use allocations under the sub-alternative (Alternative 5a) are the same as under Alternative 5, except that there would be no grazing and no grazing-related management actions/allocations.
** Percentages are similar based on rounding error.

E. ENVIRONMENTAL IMPACTS

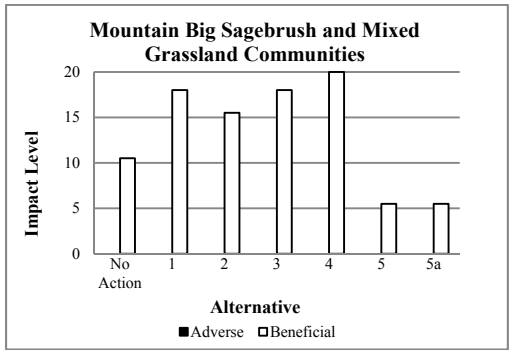
The following figures summarize and compare the anticipated long-term impacts of implementing the management actions and land use authorizations of the No Action Alternative and the five action alternatives. Only those resource management programs that are directly related to the planning issues are presented in the following figures. These figures are based on the impact analysis presented in Chapter 4 and display the overall magnitude of impacts under each alternative. In general, an impact can be adverse or beneficial and can be negligible, minor, moderate, and major. In the figures below, such impacts are based on a scale of 0 to 20, with 0 being no impacts and 20 being extreme major impacts. Following this rating scale, negligible impacts are within the range of 1 to 5, minor are within a range of 6 to 10, moderate are within a range of 11 to 15, and major impacts are within a range of 16 to 20. Chapter 4 provides the details on how magnitude of impacts are defined and rated for each resource management program.



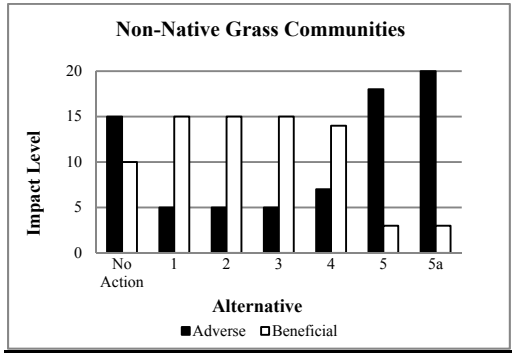
Adverse Impacts: Slowed recovery from impacts that reduced stream bank stability and water quality. These include impacts from grazing, roads, OHV use, mining, and energy corridors.
Beneficial Impacts: Improved water quality to achieve water quality standards and meet beneficial uses from riparian and livestock management



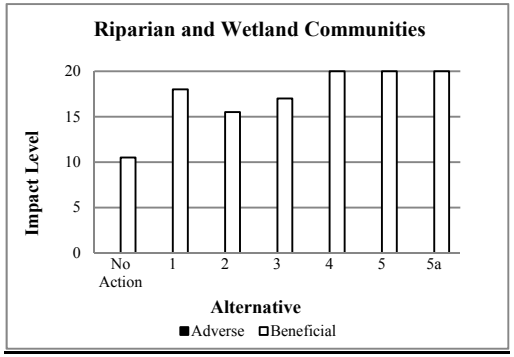
Adverse Impacts: Increased wildfire severity or frequency that is high enough to kill or reduce vigor of native grasses.
Beneficial Impacts: Improved rangeland health from restricting OHV use, restoring disturbed sites, livestock grazing management, prescribed fire, wildfire suppression, weed management, and mitigation of ground disturbing projects.



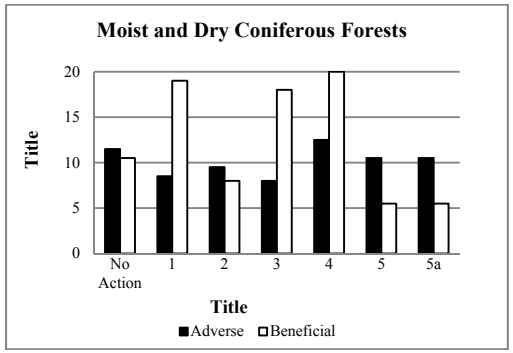
Beneficial Impacts: Improved rangeland health from changing livestock management and juniper reduction



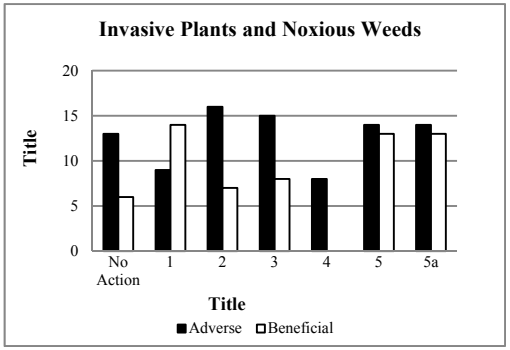
Adverse Impacts: Increased wildfire severity or frequency that is high enough to convert native sagebrush communities to non-native annual grasses.
Beneficial Impacts: Reduced spread of non-native annual grass into native rangeland vegetation communities, restoration of existing non-native annual grass communities, and improved rangeland health within the non-native perennial grass communities.



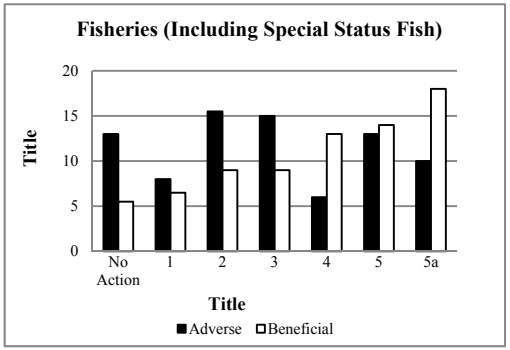
Beneficial Impacts: Improved riparian condition from changing livestock grazing, road improvement or decommissioning, and stream restoration.



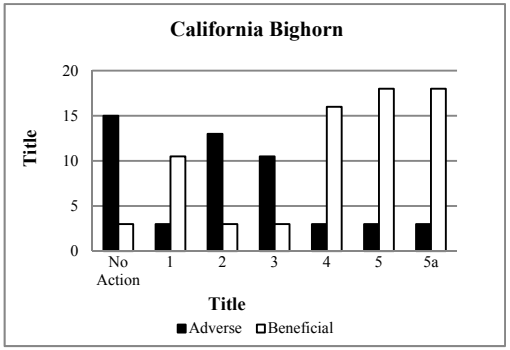
Adverse Impacts: Restricted or prohibited opportunities to improve old-growth forest condition by proposed management strategy.
Beneficial Impacts: Improved health, structure, composition, extent, and distribution of old growth forest due to active forest management.



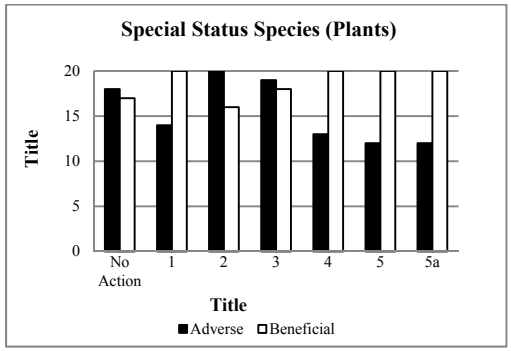
Adverse Impacts: Increased potential for weed introduction/establishment due to ground disturbance, increase use, or denied or restricted restoration activities.
Beneficial Impacts: Decreased potential for weed introduction/establishment due to improved forest and rangeland health, public education opportunities, or limits on off-road travel.



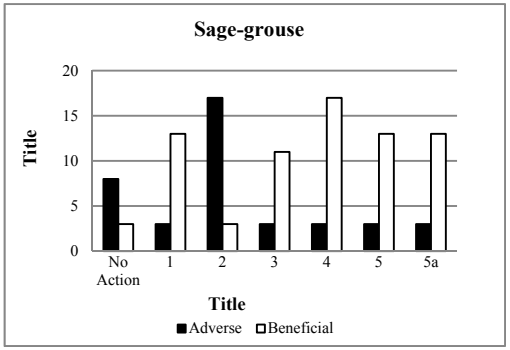
Adverse Impacts: Degraded aquatic and riparian habitat quality and quantity due to livestock grazing, fire, and vegetation treatment efforts.
Beneficial Impacts: Maintained and enhanced of aquatic and riparian habitat quality and quantity due to conservation and restoration actions, improved rangeland health, reduced fire frequency, and vegetation treatments.



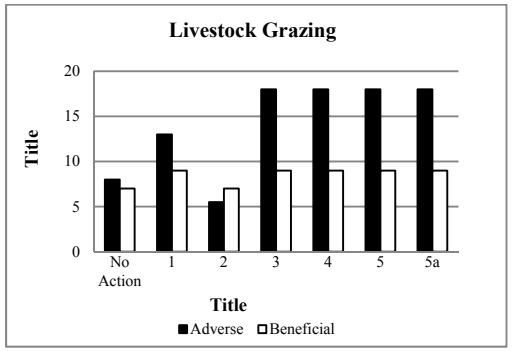
Adverse Impacts: Continued habitat loss and fragmentation, and potential for disease and parasite transmission from domestic livestock.
Beneficial Impacts: Increased habitat protection due to buffers from land-use authorizations, reduced potential from disease and parasite transmission, and increased potential for strengthening genetic diversity and population numbers via transplants.



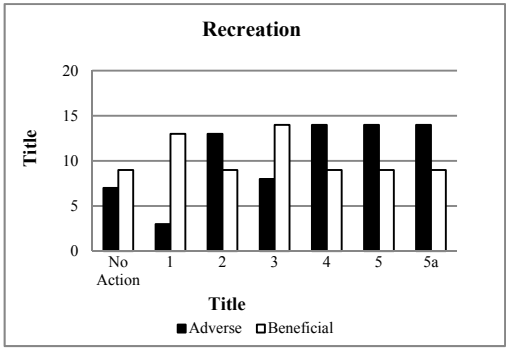
Adverse Impacts: Loss or adverse modification of habitat and/or individual plants due to ongoing energy development, mining, livestock grazing, and conversion of Wyoming sagebrush habitats to annual rangelands
Beneficial Impacts: Maintained or improved habitats and protection of individual plants through ACEC designations and special management.



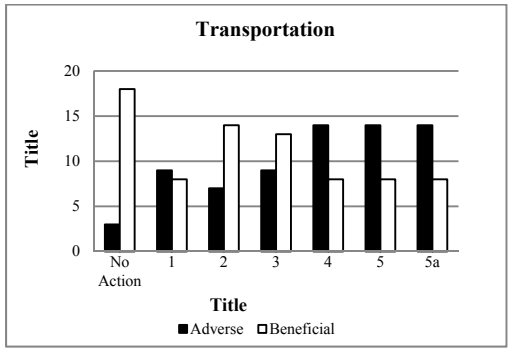
Adverse Impacts: Continued habitat loss and fragmentation in Wyoming big sagebrush communities due to development of mineral resources, limited restoration efforts, and minimal protection buffers.
Beneficial Impacts: Increased habitat protection by minimizing conflicts between livestock and sage-grouse, implementing water quality restoration plans and best management practices, establishing stream buffers, controlling juniper, designating sage-grouse ACEC, establishing wind energy exclusion areas, and ensuring adequate residual hiding cover for nesting sage-grouse by basing perennial grass utilization on growth stages,



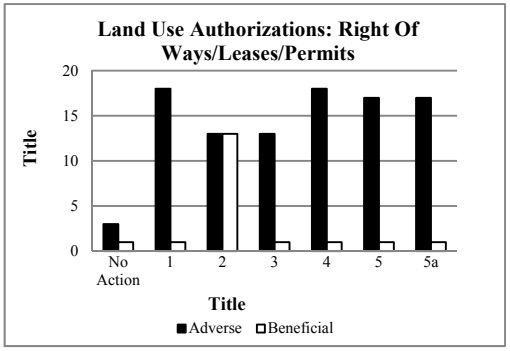
Adverse Impacts: Reduced land available to grazing and reduced forage consumed by livestock.
Beneficial Impacts: Improved quality and sustainability of forage due to following rangeland health standards.



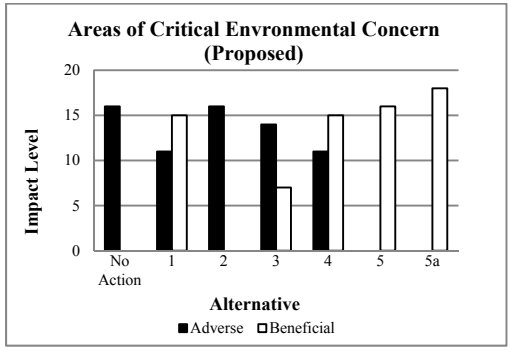
Adverse Impacts: Restricted recreational opportunities or decreased public satisfaction due to limits placed on public use or facilities, degradation of resources, or increased user conflicts.
Beneficial Impacts: Maintenance or enhancement of recreational uses and improvement of public satisfaction due to improved access/facilities, increased opportunities, reduced user conflicts, or improved resources.



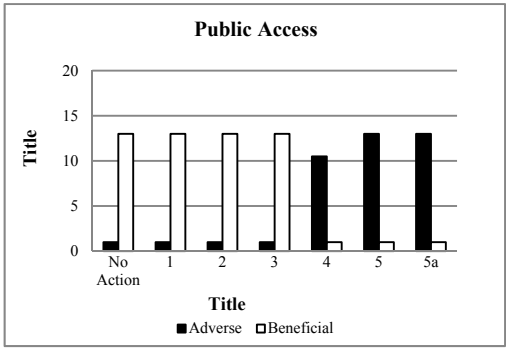
Adverse Impacts: Reduced use of the transportation network due to route closures and seasonal restrictions.
Beneficial Impacts: Maintained or improved use of the transportation network due to limited closures and seasonal restrictions.



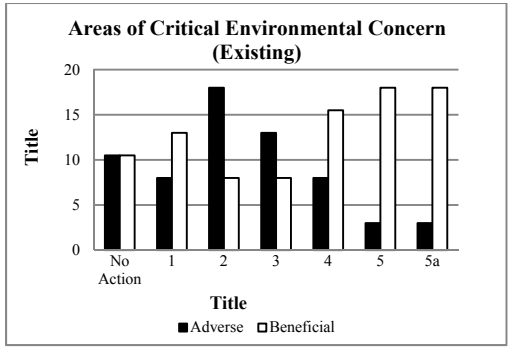
Adverse Impacts: Restricted/reduced opportunities due to special designations, exclusion and avoidance areas, no surface occupancy for leasable minerals, mitigation requirements that increase cost and time of developments, alternate site location, denial of use, retrofitting of developments, and size limitation on development
Beneficial Impacts: Increased opportunities/fewer restrictions due to improve roads for commodity production, limited avoidance/exclusion areas, less stringent mitigation measures, fewer special designations, less stringent requirements for developments.



Beneficial Impacts: Protection of relevant and important values



Adverse Impacts: Reduced access or increased costs due to administrative access only, closed roads, mitigation requiring alternate site location, or denial of access construction.
Beneficial Impacts: Increased administrative and/or public access due to open roads, pursuing public access, or less stringent mitigation requirements.



Adverse Impacts: Threats to relevant and important values.
Beneficial Impacts: Protection of relevant and important values

CHAPTER 1. INTRODUCTION

A. PURPOSE AND NEED FOR THE RESOURCE MANAGEMENT PLAN REVISION

This Draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) identifies broad-scale management direction for public lands within the National System of Public Lands administered by the Bureau of Land Management (BLM), Baker Field Office (FO). It establishes goals and desired outcomes for resource management and identifies management actions and allowable uses designed to achieve those desired outcomes. It also provides the basis for future management actions by creating a framework for developing subsequent detailed plans for specific resources and uses. The Final EIS and Record of Decision (ROD) for this planning effort will replace the current Baker RMP (BLM 1989). The authority and guidance for the development of BLM RMPs is found in the Federal Land Policy and Management Act (FLPMA) 43 U.S. Code (USC) §§ 1701-1785, 43 Code of Federal Regulations (CFR) 1600, and BLM's Land Use Planning Handbook H-1601-1 (BLM 2005). Section 102 of FLPMA sets forth the requirement for periodically projecting the present and future use of public lands and their resources using the land use planning process. Sections 201 and 202 of FLPMA establish the BLM's land use planning requirements. The purpose and need section of this Draft RMP/EIS provides a context and framework for establishing and evaluating the reasonable range of alternatives described in Chapter 2.

1. PURPOSE

The purpose of a land use plan is to ensure BLM-administered public lands are managed in accordance with FLPMA, which requires, in part, that "the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use" (43 USC §1701 [Sec. 102.a.8]). In addition, the Act requires that "the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands" (43 USC. §1701 [Sec. 102.a.12]).

In general, a purpose is a goal or objective that the BLM is trying to reach through writing or revising an RMP. The Baker FO oversees the management of many resources, resource uses, and special designations, each of which require a specific set of goals and objectives to guide their management. This makes drafting a concise and unambiguous statement of purpose for the overall RMP a difficult task. To construct such a statement, the Baker FO planning team first drafted a broad purpose statement, which consisted of several statements intended to incorporate the goals and objectives for all the resource management programs addressed in this Draft RMP/EIS. The planning team later tailored these goals and objectives to help guide the development of the management actions for each resource, resource use, and special designation

(See Chapter 2, Tables 2.3 - 2.29 for more detailed goals and objectives). This process resulted in all-inclusive statements of purpose and need.

The purpose of this Draft RMP/EIS is to revise the current Baker RMP (BLM 1989) in accordance with FLPMA in a fashion that addresses the growing needs of the Decision Area, and to select a management strategy that best achieves the following:

- Considers the long-term effects of climate change on resource management activities and how management activities can contribute to climate change
- Maintains or improves air, water, and soil resources
- Promotes watershed health and function and improves water quality in streams identified as impaired by the state under the Clean Water Act section 303(d) [33 USC section 1313(d)], commonly referred to as 303(d)-listed streams
- Improves, restores, or maintains the biological diversity, distribution, connectivity, and structure of vegetation communities that the BLM has determined are desirable
- Manages forests to sustain or restore their health and long-term productivity
- Controls the introduction and proliferation of noxious weeds and undesirable invasive plant and animal species and reduces the extent and density of established populations.
- Provides sustainable habitats for wildlife, fish, and native plants, particularly those identified as special status species
- Reintroduces or permits the reintroduction of the natural role of fire back into the landscape while avoiding/limiting unwanted resource damage from wildfire by reducing hazardous fuels
- Protects or mitigates eligible cultural resources and collaborates with Native American tribes to manage culturally and traditionally important places and natural resources
- Identifies and protects areas of high scenic quality while providing for multiple uses and other resource needs
- Identifies lands with wilderness characteristics outside of existing wilderness study areas (WSAs) and considers protection of such areas.
- Provides for managing lands consistent with the Standards for Rangeland Health and Guidelines for Grazing Management for Oregon and Washington (BLM 1997) and contributes, overall, to a sustainable local livestock industry
- Provides that, consistent with the principles of multiple use, some public lands are available for mineral exploration and development in accordance with existing mining laws and regulations, while preventing any unnecessary or undue degradation of public lands
- Provides for various forms of outdoor recreational opportunities
- Manages motorized and mechanized vehicle uses of public lands to protect resource values, promote public safety, provide recreational use opportunities, and minimize conflicts among various users

Provides land tenure adjustments, land use authorizations, and public access, and recommends withdrawals consistent with law and policy and with other resources and resource uses

Provides for energy and non-energy developments in a manner that protects public safety and conserves and protects natural resources

Protects unique and special areas through special area designations (e.g., areas of critical environmental concern [ACECs], ACEC/research national areas [RNAs], and sections of waterways determined suitable for wild and scenic river [WSR] designation.), identification as avoidance/exclusion areas, and/or withdrawal from mineral development

Provides for public health and safety at public land development sites and in areas of concentrated use

2. NEED

Resource management plan revisions are necessary where monitoring and evaluation findings, new data, new or revised policy, or changes in circumstances indicate that decisions in an existing plan (an entire RMP or a major portion of an RMP) need to be updated in order to guide resource management (43 CFR 1610.5-6). Failure to meet some plan objectives and the availability of new information that increases opportunities to improve performance of other plan objectives necessitate revisions to RMPs.

The BLM identified the need to revise the existing Baker RMP through a Preplan Analysis (BLM 2003), consideration of the Analysis of the Management Situation (AMS) (BLM 2009), and examination of issues identified during the public scoping process and through collaboration with cooperating local, state, and federal agencies. Since the signing of the ROD for the 1989 Baker RMP, significant and ongoing changes have occurred that have altered the natural, social, political, and management environments. Under FLPMA, the BLM has the responsibility to update land use plans to reflect existing conditions through the process of developing, maintaining, and revising RMPs, when appropriate. It has been determined that revision of the Baker RMP (BLM 1989) is necessary based on the factors listed below:

Increased pressure for access to and use of public lands due to regional population growth and urban expansion

Emerging recreational activities, many of which are based on recently developed technologies that have yielded new or improved recreational equipment, such as global-positioning-system units, off-highway vehicles (OHVs), and over-snow vehicles

Environmental changes that have occurred as a direct result of public land use, such as increased recreation, mineral development, and facility development

New or revised management responsibilities resulting from new legal and BLM policy requirements (e.g., new wind energy policy outlined in Wind Energy Development Programmatic EIS [BLM 2005] and clarified by IM 2009-043)

New listings (e.g., bull trout) or de-listings (e.g., bald eagle) under the Endangered Species Act (ESA)

New designations (e.g., sage-grouse) and de-designations (e.g., pileated woodpecker) from the BLM State Director's special status species list

a. New and Revised Polices and Guidance/Changes in Management Direction

Since the signing of the ROD for the Baker RMP in 1989, additional guidance has been developed that has changed management direction for public lands in the Planning Area. A list of laws, regulations, and policies can be found in Appendix 1.1. This list includes some of the more important and relevant policy changes and new guidance that reflects a need for the RMP revision.

b. Changing Conditions/New Data and Considerations

Some important changes in the conditions of the Planning Area that helped to determine the need for a revised RMP, including some that are reasonably foreseeable over the life of the RMP, are provided below:

Availability of new data
Recognition of the need for BLM management to adjust to climate change and its impacts on the vegetative and aquatic resources
Consideration of leasable and renewable energy resources and energy transportation systems, as required by national policies
Consideration of future energy facility sites, including power line and pipeline rights-of-way (ROWs)
Changes to listings under the ESA, including bull trout (threatened, 1998); Snake River fall run, Snake River spring/summer run, and Mid Columbia spring run Chinook salmon (threatened, 1992); Mid Columbia and Snake River steelhead (threatened, 1997, 1999); as well as the delisting of the gray wolf and bald eagle, and the possibility of new listings and de-listings in the future
Recent biological opinions issued under the ESA indicating additional guidance is needed to protect listed fish species in portions of the Decision Area
Changes in ecological integrity based on the condition of soil and vegetation in areas impacted from land uses and natural disturbances
Concern with landscape fragmentation and loss of plant and animal species diversity or genetic resilience due to loss of connectivity within and between blocks of upland forest, shrub-steppe, and riparian habitats
Invasive and noxious weed encroachment and the expansion of juniper and other woody species beyond their historic range of variability (HRV)
Forest health issues and impacts from insect and disease epidemics
Concern about communities in close proximity to public lands that have high fuel loads and are at risk for catastrophic fire (i.e., communities at risk)

New information regarding the importance of late and older seral species, historic disturbance factors such as fire on the landscape, and sustainable use and development on public lands

Changing socioeconomic conditions and opportunities to revise management direction to provide employment through both traditional commercial activities and contracted forest and rangeland health initiatives

Identification of high priority areas and special emphasis watersheds for conservation and restoration activities within the Decision Area

Identification of 303(d) listed streams and the anticipated identification of Total Maximum Daily Load (TMDL) levels and development of water quality restoration plans

Designation of WSRs and the preparation of the Wallowa and Grande Ronde Rivers Management Plan and the John Day WSR RMP Amendment/ROD (2001)

Identification of lands with wilderness characteristics

Nominations of ACECs

Acquisition and disposal of lands

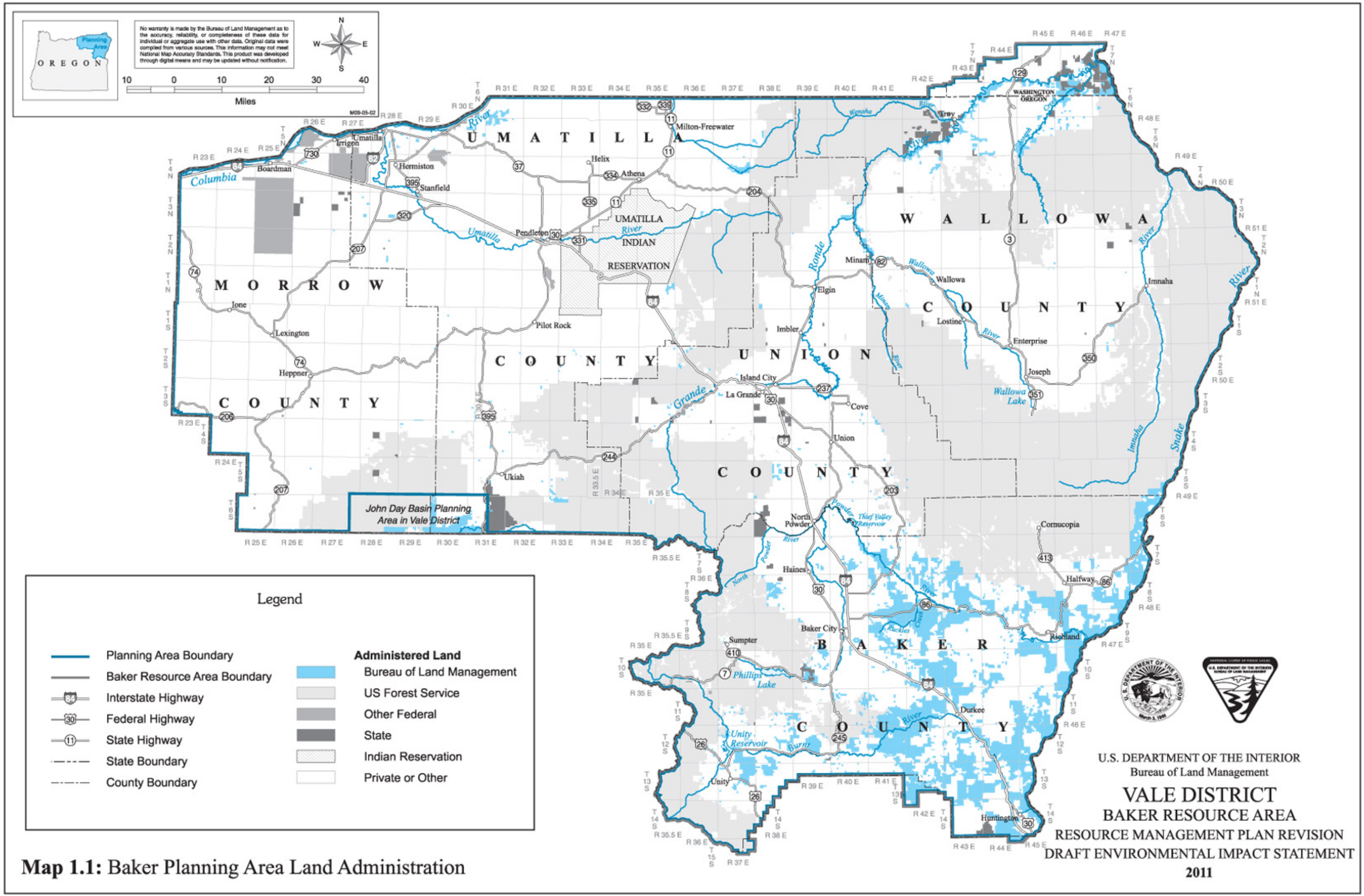
Application for renewal of a Federal Energy Regulatory Commission hydropower license by Idaho Power for the Hells Canyon Complex dams

B. PLANNING AREA AND MAP

1. PLANNING AREA

This Draft RMP/EIS addresses public lands managed by the Baker FO within the Vale District of the BLM (see Map 1-1). The Planning Area for this planning effort is the Baker Resource Area, with the exception of lands located in the southwestern portion of the Resource Area within the hydrologic boundaries of the John Day River Basin, west of Highway 395 in Grant County. The Prineville District Office analyzes and manages these lands as part of the John Day Basin RMP, which is currently undergoing revision (see BLM 2008a for the John Day Basin Draft RMP).

The Baker Planning Area covers parts of Baker, Union, Wallowa, Malheur, Morrow, and Umatilla counties in Oregon and Asotin County in Washington. The Planning Area includes approximately 8,662,511 acres of land, 428,425 acres of which are public lands administered by the BLM. The BLM is responsible only for the management of public lands within the Planning Area, which are referred to collectively as the Decision Area. Table 1-1 provides an overview of surface ownership within the Baker Resource, Planning, and Decision areas. In addition, there are numerous land management agreements between the BLM and other state or federal agencies administered by the BLM within the Planning Area. Examples of these agreements are those associated with WSRs, wilderness, cooperative travel management areas, and recreation sites. Cooperating agencies include the United States Forest Service (USFS), Oregon Parks and Recreation Department (OPRD), Oregon Department of Fish and Wildlife (ODFW), and Washington Department of Fish and Wildlife (WDFW). The BLM also administers 3,724,790 acres of mineral estate within the Planning Area (see Map 1-2 on the CD), 3,316,671 acres of



Map 1.1: Baker Planning Area Land Administration

which include both federal surface and federal mineral estate. The remaining 408,119 acres are considered split estate lands, with the surface estate being under private ownership and the mineral estate reserved to the federal government.

Table 1-1. Land Surface Administration (in Acres) for the Baker Resource, Planning, and Decision Areas

Land Ownership	Resource Area	Planning Area	Decision Area
Federal Ownership (Total)	3,440,940	3,381,906	428,425
Public lands (BLM)	443,042	428,425	428,425
USFS	2,911,700	2,867,443	--
Department of Defense	48,849	48,849	--
Corps of Engineers	24,512	24,352	--
USFWS	9,204	9,204	--
Bureau of Reclamation	3,633	3,633	--
Private	5,069,655	5,047,455	--
Bureau of Indian Affairs	158,790	158,790	--
State Lands	75,601	74,322	--
TOTAL	**8,744,987**	**8,662,511**	**428,425**

The general land pattern in the Baker Planning Area is characterized by small to moderate-sized parcels of public lands that are widely scattered and intermingled with private, state, and federal lands administered by the USFS and other federal agencies. The lack of large contiguous tracts of land in the Decision Area makes it challenging when addressing concerns such as protection and restoration measures to maintain or enhance native vegetation, biodiversity, and habitat connectivity. The 428,425 acres of BLM surface ownership constitutes only approximately five percent of the 8,662,511 acres in the Planning Area.

Most of the Decision Area (84 percent) is located in Baker County, with the remainder of public lands scattered across five other counties in Oregon and one county in Washington (see Table 1-2). Communities in the Planning Area include Baker City, Union, La Grande, Pendleton, Elgin, Wallowa, Enterprise, Joseph, Halfway, Umatilla, Heppner, North Powder, Oxbow, Richland, Asotin, Durkee, Unity, Huntington, Hermiston, and Milton-Freewater.

Table 1-2. Decision Area Acres by County

County	Decision Area Acres in County	Percent of Decision Area in County	Percent of County in Decision Area
Asotin (Washington)	14,156	3.46	3
Baker	364,523	84.35	18
Malheur	10,252	2.49	<1
Morrow	554	0.15	<1
Umatilla	12,035	2.98	<1
Union	6,480	1.54	<1
Wallowa	20,426	5.04	<1
TOTAL	428,425	100.01	

2. WATERSHEDS

Based on hydrologic data, the Baker Planning Area can be divided into specific drainage areas. Watersheds are identified using hydrologic unit codes (HUC): the smaller the HUC number, the larger the watershed. The entire Planning Area falls under one HUC 1 or "region" (specifically, the Pacific Region), three HUC 2s or subregions, 5 HUC 3s or basins, and 16 HUC 4s or subbasins. Table 1-3 shows the relationships of the HUC numbering system and level of watersheds within the Planning Area, while Map 1-3 (on the CD) shows the locations of the 16 subbasins.

Table 1-3. HUC 4 Watersheds in the Planning Area

HUC Field	Region #	Name	Category
1	**17**	**Pacific Northwest**	**region**
2	***1705***	***Middle Snake***	***subregion***
3	170501	Middle Snake/Boise	basin
4	17050119	Willow	subbasin
3	170502	Middle Snake/Powder	basin
4	17050201	Brownlee Reservoir	subbasin
4	17050202	Burnt River	subbasin
4	17050203	Powder River	subbasin
2	***1706***	***Lower Snake***	***subregion***
3	170601	Lower Snake	basin
4	17060106	Lower Grande Ronde	subbasin
4	17060102	Imnaha	subbasin
4	17060104	Upper Grande Ronde River	subbasin
4	17060105	Wallowa	subbasin
2	***1707***	***Middle Columbia***	***subregion***
3	170701	Middle Columbia	basin
4	17070101	Middle Columbia-Lake Wallula	subbasin
4	17070102	Walla Walla	subbasin
4	17070103	Umatilla	subbasin
4	17070104	Willow (Morrow Co)	subbasin
3	170702	John Day	basin
4	17070204	Lower John Day	subbasin
4	17070202	North Fork John Day	subbasin

Table 1-4 shows the subbasins that are at least partially within the Planning Area. The Planning Area is spread out among the subbasins, while the Decision Area is mostly within Brownlee Reservoir, Burnt River, and Powder River subbasins. Map 1.3 illustrates the location of the HUC 4 subbasins in the Planning Area.

Table 1-4. Acres and Subbasins (HUC 4) within the Planning Area

Subbasin #	Subbasin Name	Subbasin (Acres)	Planning Area (Acres)	% Planning Area in Subbasin	Decision Area (Acres)	% Decision Area in Subbasin
17050201	Brownlee Reservoir	833,486	334,583	3.86	85,050	19.85
17050202	Burnt	703,045	700,569	8.09	152,411	35.57
17060101	Hells Canyon	346,254	124,327	1.44	0	0

Table 1-4. Acres and Subbasins (HUC 4) within the Planning Area

Subbasin #	Subbasin Name	Subbasin (Acres)	Planning Area (Acres)	% Planning Area in Subbasin	Decision Area (Acres)	% Decision Area in Subbasin
17060102	Imnaha	544,006	543,959	6.28	543	0.13
17060106	Lower Grande Ronde	971,001	844,630	9.75	25,454	5.94
17070204	Lower John Day	2,021,050	104,908	1.21	40	0.01
17060103	Lower Snake-Asotin	449,931	68,521	0.79	4,489	1.05
17070101	Middle Columbia-Lake Wallula	1,651,659	409,287	4.72	3,286	0.77
17070202	North Fork John Day	1,182,755	377,100	4.35	2,246	0.52
17050203	Powder	1,092,562	1,092,257	12.61	131,946	30.80
17070103	Umatilla	1,610,946	1,616,108	18.66	4,188	0.98
17060104	Upper Grande Ronde	1,046,628	1,046,616	12.08	4,369	1.02
17050116	Upper Malheur	1,553,321	112	< 01	0	0
17070102	Walla Walla	1,126,171	307,100	3.55	2,776	0.65
17060105	Wallowa	610,200	610,209	7.04	2,647	0.62
17050119	Willow	485,380	20,754	0.24	8,929	2.08
17070104	Willow (Morrow Co)	555,813	461,471	5.33	51	0.01
Total		**16,784,208**	**8,662,511**	**100.00**	**428,425**	**100.00**

C. SCOPING/ISSUES

1. PUBLIC SCOPING

The first step in the preparation of an RMP is identifying resource management and use issues that should be addressed in developing the alternatives. These planning issues focus the direction and character of future public land management so that existing resource conflicts may be resolved, desired future resource conditions may be achieved, and future demands for resource use may be met.

The BLM identified the planning issues for the Planning Area through scoping, which began with publication of a Notice of Intent (NOI) to produce the Baker RMP and accompanying EIS in the *Federal Register* on January 15, 2008 (Vol. 73, No. 10 pp. 2,520-2,521). Public scoping meetings and comment solicitation began on June 25, 2008 and ended on August 31, 2008. For scoping purposes, the BLM scheduled open houses in nine communities, attended community government meetings in six communities, created a website, and mailed 1,188 scoping letters soliciting written comments. In addition, the BLM engaged in meetings and phone conversations with other federal and state government agencies. This public scoping process generated a wide range of public comments that were used to focus the planning process, develop the significant issues, and formulate alternatives.

2. ISSUES ADDRESSED

During the scoping process, the BLM identified important issues to address in this Draft RMP/EIS. The detailed Scoping Report for the Baker FO RMP revision can be found in the AMS (BLM 2009) and on the Baker FO's website (http://www.blm.gov/or/districts/vale/plans/

bakerrmp/documents.php). For planning purposes, an "issue" is defined as a matter of controversy or dispute over potential land and resource allocations, levels of resource use, production, and related management practices (BLM 2008b). Issues can be addressed in a variety of ways and, in essence, help determine what decisions will be made in the RMP and what the Draft EIS must address pursuant to NEPA.

a. Issues Used to Develop Alternatives

Based on the scoping comments received and their subsequent analysis and evaluation, the BLM identified four key planning issues as being within the scope of this Draft RMP/EIS. All four issues center on the larger question of how much resource use and human activity should be allowed, while still providing the mandated level of resource protection.

The issues presented here are broadly stated. Nested within each of these issues are many resource questions that were addressed during this planning process. The variety of ways these questions can be answered, within BLM legal mandates and the constraints of current management direction, helped to formulate the five action alternatives considered in this Draft RMP/EIS, which are detailed in Chapter 2.

Key Issue 1: Landscape Health/Land Use

How should the Baker FO manage the diverse landscapes and resources within the Decision Area?

Many of the comments received during public scoping concerned what level of human alteration of the landscape and natural systems is acceptable, which is closely tied to the other issues addressed below. Opinions vary on whether change in landscape health should be measured against current or historical conditions, what time period to consider for historical conditions, and what the desired range of conditions are and how they should be achieved. Some commenters believed that ecosystem conditions should be restored to the natural HRV that existed prior to the extensive impacts caused by human activities and developments. These commenters tended to advocate limiting or excluding resource uses (e.g., grazing, recreation, mineral exploration and extraction, and renewable energy development) and using proactive approaches such as vegetation treatments and fire as tools to restore landscape health to historic conditions. On the other side of the issue are those commenters who stressed that healthy landscapes include sustainable land uses that have historically occurred in the Planning Area and provide revenue and employment, as well as outdoor recreational opportunities. Some of these commenters also felt that public lands could support new or additional forms of land use without compromising landscape health. Finally, several commenters felt that federal land management should make up for the lack of functioning ecosystem conditions on private lands by providing quality habitat and connectivity on public lands for species such as sage-grouse.

The BLM manages public lands and resources under the principles of multiple use and sustained yield (FLPMA Section 302[a]; FLPMA Section 102[7]), unless lands are dedicated to another

use by law (e.g., as wilderness or WSRs). Managing public lands for multiple use balances recreational, community, commercial, scientific, historical, and cultural interests with long-term protection of renewable and nonrenewable resources. These resources include diverse vegetative communities and unique habitats that contain timber, minerals, watersheds, fish, wildlife, visual resources, WSRs, WSAs, wilderness areas, and lands with wilderness characteristics and encompass a host of natural, scenic, scientific, recreational, and cultural values. In managing and protecting these resources, the BLM also recognizes public needs for energy, minerals, food, communication, wood products, ROWs, community lands, and fiber. Such use and management of public lands must stay within the guidelines of numerous federal laws, regulations, and policies, which also limit the range of alternatives presented in the Draft RMP/EIS.

Key Issue 2: Renewable Energy Development

How should the Baker FO manage renewable energy development?

What areas should be open to renewable energy development and in what areas should the BLM restrict such use?

The Baker FO can allow for various degrees of development of renewable energy resources, such as wind, geothermal, biomass, and solar power, as well as allow for the placement of powerlines across public lands. In near future, there is the potential for the development of new sources of energy within the Decision Area. A number of commenters and groups voiced their support for such developments, mainly for wind energy, because they felt it would bring income into the area and provide clean power that is environmentally responsible. Others were not as supportive of such developments because they felt there would be environmental costs, including adverse effects on fish and wildlife and their habitats and diminished scenic quality of the area. Several commenters urged that the development of wind turbines, powerlines, and other structures occur in "seldom seen" areas so that they do not obstruct the view from the Baker Valley or the National Historic Oregon Trail Interpretive Center (NHOTIC).

Due to the issues identified above, the needs of companies seeking ROWs for renewable energy developments on public lands often conflict with the desires of those who value natural-appearing landscapes, as well as resource protection. The BLM encourages the development of renewable energy within acceptable areas, consistent with FLPMA, the Energy Policy Act of 2005, and the BLM Energy and Mineral Policy (2008). For wind energy development specifically, the BLM Land Use Planning Handbook (H-1601-1; BLM 2005) directs that land use planning efforts address existing and potential development areas for renewable energy projects. However, such development must take impacts to other resources, such as visual and wildlife, into consideration on public lands. For example, the Wind Energy Development Programmatic EIS (2005), as clarified by IM 2009-043, outlines wind energy development policies and best management practices to avoid adverse impacts. These and other such policies and mandates will guide the Baker FO in identifying areas for potential development of renewable energy sites, assessing impacts of renewable energy development, and identifying avoidance and exclusion

areas where renewable energy development would be incompatible with specific resource values. Land use authorizations/ROWs for renewable energy developments are discussed in the Lands and Realty sections of this RMP.

Key Issue 3: Transportation and Access

How should the Baker FO manage transportation and access?

Which existing routes should remain open, which should have limited access, and which should be closed to vehicular access and motorized use?

Should the BLM create new routes and trails?

Should the BLM acquire legal access to isolated parcels of public land or sell those parcels due to lack of legal access?

Transportation and access emerged from the scoping process as important issues for the public. The current transportation system in the Planning Area consists of sections of paved interstate or state highways; numerous paved or gravel/dirt secondary roads contained within either county or BLM road systems; and scattered, mostly unimproved "trails" or roads open for OHV and/or non-motorized use. In addition, most of the public lands are currently classified as "open" for cross-country motorized use. Some commenters felt that all existing routes should remain open for recreational and resource uses, with the creation of some new routes and trails, and that most of the area should remain open for OHV use. Others believe closing a number of routes and limiting or restricting vehicular access, especially motorized uses, would provide the best protection of resources.

Even with the existing network of roads and potential for cross-country travel, most of the isolated parcels of public land in the Planning Area lack legal access. A number of commenters and groups expressed that the BLM needs to acquire more legal access to isolated parcels of public lands or better access to private in-holdings, while others stressed the need for the BLM to sell certain parcels of isolated public land due to the lack of legal access. The identified need to secure legal access is, however, primarily a land tenure issue.

Due to gaps in the current transportation system data, an official Travel Management Plan (TMP) cannot be completed until the BLM collects sufficient data. Additional time is needed to ensure the collection of accurate data to provide for appropriate levels of travel management analysis and planning. The BLM intends for the TMP to be completed within 5 years of signing of the ROD for this RMP revision. The BLM's regulations at 43 CFR Subpart 8342 (especially 43 CFR 8342.1 & 8342.2), as well as Executive Order (EO)11644 and BLM's Land Use Planning Handbook (H-1601-1; BLM 2005), require all OHV area designations that direct motorized and mechanized uses of public lands to be completed at the RMP level. All public lands within the Planning Area would be designated as open, closed, or limited to motorized and mechanical uses

in accordance with 43 CFR 8342.1. Following this guidance, this RMP revision does address motorized and mechanized vehicle use on an area-wide level, including the designations of open, limited to existing roads and trails, and closed, to serve as interim management until the completion of the TMP. The TMP will include route designations, area closures, and route development or decommissioning as necessary.

Key Issue 4. Livestock Grazing

How should the Baker FO address livestock grazing on public lands?

Should the BLM restrict livestock grazing in certain areas?

Are there areas where livestock grazing could be increased?

Livestock grazing was identified as an issue for a number of commenters during the scoping process. Comments ranged from placing tighter restrictions on grazing, including eliminating grazing in many sensitive areas and tightening monitoring, while others supported increasing grazing activities in the Planning Area. Those wanting to limit grazing cited numerous environmental concerns brought about by grazing (e.g., erosion, weed dispersal, damaging native plants, and affecting wildlife habitat). Those supporting maintaining or increasing grazing levels on public lands cited the socioeconomic reasons (e.g., area income and jobs) and some benefits of grazing (e.g., fuels reduction), and believed that environmental impacts from livestock grazing were not substantial enough to warrant the reduction of current grazing animal unit months.

All land uses, including livestock grazing, need to be incorporated into the concept of overall environmental health and multiple use management. The BLM developed statewide standards for rangeland health and guidelines for livestock grazing management for Oregon and Washington (BLM 1997) that conform to all federal grazing regulations. The objectives of these regulations are to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy rangelands (BLM 1997). While the demand for grazing on public lands to help make local livestock operations viable will continue and possibly increase in the future, other natural resource concerns will also drive changes in livestock grazing. Competing interests seem inevitable. Possible modifications to current grazing levels and practices are addressed in the Draft RMP/EIS.

b. Other Issues Addressed in the EIS

In addition to the four key issues that drove the development of the five action alternatives presented in Chapter 2, the Baker FO identified nine additional issues that need to be addressed in this Draft EIS/RMP. These secondary issues, originally identified as management concerns in the AMS, are generally of a program-specific nature and may or may not be externally generated

or controversial. Nonetheless, they deserve an appropriate level of consideration in the planning process. The BLM has identified two types of secondary issues:

1. Topics raised during scoping that require attention, but which have a lower level of controversy regarding their management than the key issues identified above. While secondary issues are addressed in the RMP, some do not allow for much variance in management due to restrictions imposed by law, regulation, or policy.
2. Issues relating to resource use, development, and protection opportunities that stem from new information or changed circumstances, and the need to reassess the appropriate mix of allowable uses. These issues can usually be addressed through guidance provided by BLM's Land Use Planning Handbook (BLM 2005).

Nine secondary issues were identified during the scoping process, as well as by the RMP planning team as they discussed items that needed to be addressed in this EIS.

Secondary Issue 1: Vegetation and Soils Management

How will sagebrush steppe, riparian, and wetland habitats be managed to maintain, improve, or restore healthy plant communities?

How should the Baker FO manage riparian and wetland areas and upland vegetation communities to improve or maintain proper functioning condition, as well as improve or maintain water and habitat quality for riparian-dependent species?

What changes should the Baker FO consider in grazing, fuels management, recreation, and roads management to promote healthy vegetation communities and soils and to improve the control of noxious and invasive plants?

How should the Baker FO manage forest vegetation communities in order to provide habitat for wildlife, as well as forage for domestic animals and a sustainable supply of wood fiber?

Secondary Issue 2: Fire Management

How should the Baker FO manage wildland fire, fuels, and prescribed fire to be consistent with resource objectives, while simultaneously protecting life and property?

Where and under what conditions should the Baker FO use fire as a management tool?

Which areas should continue to receive full suppression strategies to protect important resource values, and which areas should receive management response with less than full suppression strategies?

Secondary Issue 3: Water Quality/Aquatic Resources/Fisheries

How should the Baker FO maintain or improve aquatic habitat and water quality for fish, plants, and other aquatic organisms and riparian-dependent species?

How should the Baker FO improve and maintain water quantity and quality for both ground and surface water, as well as for the promotion of hydrologic recovery?

How should the Baker FO maintain the existence and promote the recovery of ESA-listed fish species and their habitat, and help prevent future listings in cooperation with ODFW, WDFW, USFWS, and the National Oceanic Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries)?

Secondary Issue 4: Wildlife Management

How can the Baker FO achieve wildlife habitat management with emphasis on ecosystem function and connectivity to ensure self-sustaining populations and a natural abundance and diversity of wildlife resources on public lands?

Secondary Issue 5: Recreation Management

How should the Baker FO manage recreation, both developed and dispersed, to meet public demand, while simultaneously protecting other resource values and providing for the health and safety of the public?

How should the Baker FO address the growing demand for commercial recreation and organized group uses?

How and where should the Baker FO manage recreation use levels?

Are there any new facilities or special management areas that the Baker FO needs to consider to meet recreational needs?

Secondary Issue 6: Minerals

How should the Baker FO manage mineral resources to meet public demand and still protect or conserve other natural resources?

Are there areas that should be closed to locatable mineral entry or mineral leasing?

Where are the areas that are suitable for production and removal of common mineral materials?

Secondary Issue 7: Lands and Realty

How should the Baker FO manage its land tenure and authorized land uses?

Which lands should the Baker FO make available for disposal, exchange, or acquisition?

Which areas are appropriate for ROW development and other land use authorizations?

Secondary Issue 8: Special Management Areas

How should the Baker FO manage currently designated special management areas?

Are there other areas that the Baker FO should designate or identify for special management?

Secondary Issue 9: Tribal Government and Community Interests

How should the Baker FO manage public lands to meet the needs of Native American tribes?

What management actions should the Baker FO consider in order to facilitate and meet the needs of tribal traditions and treaty rights and provide for sustainable harvest of traditional foods, including cultural plants, fish, and wildlife?

What actions could the Baker FO take to protect areas of traditional cultural significance?

D. PLANNING GUIDANCE

1. PLANNING CRITERIA

Bureau of Land Management planning regulations (43 CFR 1610) require preparation of planning criteria for all RMPs. Planning criteria are the constraints or "ground rules" that guide and direct the development of the RMP and determine how the planning team and the public approach the development of alternatives and, ultimately, the selection of a Preferred Alternative. Criteria ensure plans are tailored to the identified issues, so unnecessary data collection and analyses are avoided. Planning criteria are based upon both analyses of information pertinent to the Planning Area and standards prescribed by applicable laws, regulations, agency guidance, and professional judgment. They are also the result of consultation and coordination with the public; other federal, state and local agencies; and Indian tribes. The proposed planning criteria, which were made available for public comment during the public scoping period, can be found in the scoping report, and are summarized below:

1. The Baker FO will manage the Decision Area to protect and conserve resources, while simultaneously recognizing the need for resource uses in accordance with FLPMA and other applicable laws and regulations.

2. Decisions presented in the Baker RMP will only apply to the Decision Area (i.e., BLM-administered public lands within the Planning Area).
3. Cooperating Agency status will be encouraged for affected federal, state, and local governments and Indian tribes. The environmental analyses, input, and proposals of Cooperating Agencies will be used to the maximum extent possible, as consistent with BLM responsibilities (43 CFR 1501.6 [a] [2]).
4. The RMP planning effort will be collaborative. Decisions in the RMP will strive to be compatible with existing plans and policies of adjacent local, state, federal, and tribal agencies, as long as the decisions are consistent with federal law governing the administration of public lands and compatible with the RMP purpose and need.
5. The BLM will use current scientific information, research, technologies, and results of inventory, monitoring, and coordination to determine appropriate local and regional management strategies that strive to enhance or restore impaired ecosystems.
6. Lands located within the Planning Area's administrative boundary, and subsequently acquired by the BLM, will become part of the Decision Area and managed consistent with the RMP, subject to any constraints associated with the acquisition.
7. The RMP will recognize valid existing rights within the Decision Area, consistent with applicable law.
8. The RMP will recognize the states' responsibility to manage wildlife. The BLM would consult with ODFW or WDFW before establishing no-hunting zones or periods for the purposes of protecting public safety, administration, or public use and enjoyment.
9. Terms and conditions and reasonable and prudent measures from existing final biological opinions will be included.
10. The RMP will address motorized use designation and access, and may identify special use areas. Route inventories will not be completed for the entire Decision Area prior to completion of the RMP. Public lands will be designated as "open," "limited" or "closed" to motorized and mechanized vehicle uses. Decisions concerning specific routes in "limited" areas may be made in the RMP; however, most decisions about specific routes will be deferred until the TMP is completed, which is estimated to occur within 5 years of the ROD.
11. The RMP will follow the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington (BLM 1997).
12. As part of this RMP process, the BLM will analyze areas for potential designation as ACECs in accordance with 43 CFR 1610.7-2. The BLM will also analyze river corridors for recommendation and designation under the WSR Act.
13. All previously established WSAs will continue to be managed for wilderness values and character until Congress designates them as wilderness areas, or releases them for multiple use management, unless management direction as set forth in the approved RMP continues management for wilderness values and character, regardless of their release by Congress.
14. Under Executive Order 13175 and FLPMA, the planning process will ensure opportunities for meaningful and timely government-to-government consultation between federally recognized American Indian Tribes and Federal Land Managers.

The planning criteria also encompass identifying analytical assumptions, methods for impact analysis, and data needs (e.g., incomplete and unavailable information). The estimation of impacts is also guided by the planning criteria, and includes ranges of impacts where effects cannot be precisely determined. The planning team created such guidelines for each resource management program (i.e., resources, resource uses, special designations, and social and economic conditions). These can be found in Chapter 4, Environmental Impacts.

2. LEGISLATIVE AND REGULATORY CONSTRAINTS

Federal agencies are mandated under NEPA to prepare EISs for major federal actions significantly affecting the quality of the human environment (42 USC § 4332[C]). Bureau of Land Management planning regulations requires the preparation of an EIS for the RMP revision process (BLM 2005). This Draft RMP/EIS also conforms to the CEQ regulations for implementing NEPA requirements (40 CFR 1500-1508).

Resource management plans ensure that the BLM manages public lands in accordance with the intent of Congress as stated in FLPMA, under the principles of multiple use and sustained yield. As required by FLPMA, public lands must be managed in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water, and cultural resources and values, and that also, where appropriate, preserves and protects certain public lands in their natural condition, provides food and habitat for fish and wildlife and domestic animals, and provides for outdoor recreation and human occupancy and use by encouraging collaboration and public participation through the planning process. In addition, "public lands must be managed in a manner that recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber (i.e., multiple use) from public lands" (43 USC. §1701 [Sec. 102.a.12]).

The planning guidance contained in 43 CFR 1600, NEPA, and FLPMA guide the BLM planning process. Appendix 1.1 contains a listing of other relevant federal laws, regulations, and policies relating to the use and management of public lands, and that are specific to resource/resource use.

3. RELATIONSHIP TO BLM POLICIES, PLANS, AND PROGRAMS

In addition to the federal mandates and guidelines mentioned above, the planning team considered a number of existing management plans, programmatic documents, and standards and guidelines in the preparation of this Draft RMP/EIS including the following:

<u>Land Use Plans and Amendments</u>

Baker RMP (BLM 1989)
South Fork Walla Walla River Area Plan Amendment (BLM 1992)
Vale District Fire Management Plan (BLM 2004)

Vale District Planning Updates

Activity (Implementation) Level Plans

Wallowa and Grande Ronde WSR Management Plan (BLM 1993)
Powder River Management Plan (BLM 1994b)
Lime Hill Coordinated Activity Plan (BLM 2001b)
Oregon National Historic Trail Management Plan, Vale District (BLM 1989)
Final EIS Vegetation Treatment on BLM in Thirteen Western States (BLM 1991)
Ironsides Grazing Management EIS (BLM 1981)

Programmatic NEPA Documents

Vegetation Treatments Using Herbicides on BLM Lands in Oregon Programmatic EIS (BLM 2010).
Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS and Programmatic Environmental Report (BLM 2007).
Northwest Area Noxious Weed Control Program (BLM 1985) and Supplement (BLM 1987).
Interim Strategies for Managing Anadromous Fish-producing Watershed on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California –"PACFISH" (USFS and BLM 1994)
Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada –"INFISH" (USFS and BLM 1995)
Final Programmatic EIS on Wind Energy Development on BLM-Administered Lands in the Western United States (2005)
Approved RMP Amendments/ROD for Designation of Energy Corridors on BLM-Administered Land in the 11 Western States (2009)

Policy and Rules

Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington (1997)
USFS and BLM Protocol for Addressing Clean Water Act Section 303(d) Listed Waters (USFS and BLM 1999)
Oregon Noxious Weed Strategic Plan (BLM 2001c)
EO 11644, Use of OHVs on Public Lands
CFR (43) 8340.0-5 OHV Allocations and Minimization Criteria
IM 2008-014 Clarification of Guidance and Integration of Comprehensive Travel and Transportation Management Planning into the Land Use Planning
Roads and Trails Terminology Report of 2005
Secretary's Order 3310 – Protecting Wilderness Characteristics on Lands Managed by the Bureau of Land Management

These documents have been examined not only to assure appropriate integration and, where applicable, compliance, but also to identify information that is still appropriate for inclusion in the RMP and/or decisions that are still valid and can be carried forward into the documents being prepared. Such decisions considered appropriate or valid are identified in Chapter 2, many of which come from the current Baker RMP (BLM 1989), or its amendments, and are carried through all alternatives (see Tables 2-3 - 2-29). Activity plans that have been tiered off these plans have also been considered in this planning effort, but may require revision to be consistent with the new RMP.

E. PLANNING PROCESS

In accordance with 43 CFR 1610.4, preparation of an RMP involves interrelated steps as described in Table 1-5, which includes where this Draft RMP/EIS fits in the overall planning process.

Table 1-5. Land Use Planning Process Steps

Planning Steps	Description
Identify Issues	Issues or land use problems that need to be resolved are identified. This ongoing process ties to the NEPA scoping process.
Develop Planning Criteria	Planning criteria establish constraints and guides for the planning process; streamline the process; establish standards, rules, and measures; set the scope of inventory and data collection; identify the range of alternatives; and estimate the extent of analysis. Preliminary planning criteria developed by the BLM can be modified through public comments.
Issue NOI/Scoping	The NOI is published in the Federal Register, local media, mailings, etc. The NOI identifies the preliminary issues and planning criteria and provides for a 30-day public review and comment period. This is also the start of the formal NEPA scoping process inviting the public to identify issues or land use problems that need to be resolved. In addition to the Federal Register notice, ideas are solicited through mailings, newspaper articles, public meetings, and workshops. Ideas from public, private, and internal sources are gathered, screened, and evaluated. The issues that guide the planning process are also summarized.
Collect Inventory Data	Inventory data are collected based on the planning criteria. Data are generally collected from existing sources. New data collection is limited to what is needed to resolve the planning issues identified.
AMS	Information is gathered on the current management situation, pertinent physical and biological characteristics are described, and the capability and condition of the resources are evaluated. This analysis provides a reference for developing and evaluating alternatives.
Formulate Alternatives	A range of reasonable combinations of resource uses and management practices is identified. Reasonable alternatives are developed that address issues identified during scoping and that offer a distinct choice among potential management strategies. This includes a “No Action" alternative.
Estimate Effects of Alternatives	The impacts of each alternative on the environment and management situation are estimated.
Select the Preferred Alternative	The Field Manager recommends to the State Director a preferred alternative that best resolves planning issues and promotes balanced multiple use objectives. The State Director approves the selection of the preferred alternative along with the other alternatives under consideration.

Table 1-5. Land Use Planning Process Steps

Planning Steps	Description
Issue Draft RMP/EIS	**The Notice of Availability (NOA) is published in the Federal Register, media, mailings, etc. The NOA notifies the public of the availability of the Draft RMP/EIS and provides for a 90-day public review and comment period.**
Issue Proposed RMP EIS	Public comments are evaluated and any needed modifications are made. A second NOA is published and a copy of the proposed RMP/Final EIS is filed with the Environmental Protection Agency. This initiates the 30-day protest period under 43 CFR 1610.5-2.
Governor's Consistency Review	A 60-day Governor's review to identify inconsistencies with state or local plans is initiated simultaneously with the public comment period.
Protests	The State Director may sign and implement portions of the plan not under protest.
Notice of Significant Change	When a protest period or consistency review results in significant changes to the proposed plan, a Notice of Significant Change is issued, which provides for an additional 30-day comment period.
Plan Approval	Once protests have been resolved and the Governor's consistency review has been completed, the State Director approves the RMP by signing the ROD.
Monitor and Evaluate the RMP	The BLM ensures that the plan is continually monitored and evaluated until it is replaced.

F. COLLABORATION AND COORDINATION

Title II, Section 202 of FLPMA provides guidance for the BLM's planning process to coordinate planning efforts with American Indian Tribes, other federal departments, and agencies of state and local governments. One means to coordinate planning efforts is through collaboration. A brief discussion of cooperating agencies and tribal governments is presented below. A more detailed list of these groups, along with other special interest groups and stakeholders involved in the planning process, is presented in Chapter 5. Another means of coordination is to be consistent with state and local plans, as well as plans of other federal agencies, which is also discussed below.

1. COOPERATING AGENCIES

The BLM has notified and asked local, state, and federal agencies and tribal governments to collaborate with the BLM during the development of the Baker RMP. Representatives from these agencies and tribes bring vast knowledge and a broad range of interests to the table and enhance the ability of the BLM to identify important issues and to address them with an appropriate range of alternatives. Although no agency or tribal government has decided to be formal cooperators at this time, some have shown interested in being involved in the process.

The intent is for representatives from the various agencies and tribal governments to meet periodically to review and develop content initiated by BLM staff. This group can help play a role in refining issue development, formulating alternatives, and identifying key publics, as well as providing prepublication review of key documents. Cooperators can keep the BLM informed of new concerns for their organizations or community that may be relevant to the RMP process.

2. TRIBAL GOVERNMENTS

Guided by national policy and law, the BLM is committed to continuing consultation and cooperative management whenever possible. The BLM recognizes its responsibility to provide federally recognized tribal governments sufficient opportunities to contribute to land use decisions and to consider those concerns or issues related to cultural/religious and natural resources. This trust relationship is based upon negotiated treaties or other agreements, as well as Supreme Court decisions, that recognize the sovereignty of American Indian Nations to govern themselves as distinct political communities.

To date, the BLM has conducted meetings to identify preliminary issues with representatives from the Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, and Burns Paiute Tribe. Additional consultation meetings will be ongoing, and meetings are anticipated with other tribes that have treaty rights and interests in the Decision Area. The BLM contacted the following tribal governments with an invitation to participate as cooperators in the land use planning process:

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

3. RELATIONSHIP TO OTHER PLANS

Section 202 of FLPMA, subsection (c)(9) requires that BLM plans are consistent with officially approved or adopted resource-related plans of other local, state, and federal governments to the extent those plans are consistent with federal laws and regulations applicable to public lands. In order to coordinate planning efforts with other federal departments and agencies of state and local governments, the Baker FO has kept abreast of federal, state, and local plans, assured that consideration is given to such plans, and worked with these groups to avoid inconsistencies among their various plans to the greatest extent possible under federal law, regulation, and policy. Following this, members of the planning team reviewed and considered plans formulated by county, state, and federal governments that relate to management of lands and resources in the Decision Area as this Draft RMP/EIS was developed. Although the BLM FO reviewed and considered the various plans, planning team members did not consider consistency where such plans were guided by different laws and regulations that are not consistent with FLPMA. The plans reviewed include the following:

<u>County Plans</u>

Baker County, Oregon

Union County, Oregon
Wallowa County, Oregon
Umatilla County, Oregon
Morrow County, Oregon
Asotin County, Washington

State Comprehensive Wildlife Conservation Strategies and State Lands Plans

State Comprehensive Outdoor Recreation Plan
Land Conservation and Development Commission's 19 Statewide Planning Goals and Guidelines
Eastern Oregon Ecosystem Health Strategy (Governor Kitzhaber's 11-Point Plan)
Oregon Forest Practices Act
Oregon Healthy Streams Partnership, including water quality management area plans for agricultural areas designated under Senate Bill 1010
Oregon Department of Environmental Quality's (ODEQ's) developing regional haze state implementation plan for Oregon (involving the Eagle Cap and Hells Canyon Wildernesses) and plans for particulate non-attainment in the LaGrande urban area.
ODEQ's Nonpoint Source Control Program Plan and Oregon's 2000 Water Quality Status Assessment Report - 305(b) Report
ODEQ's TMDLs Program
ODFW Wildlife Diversity Plan, Native Fish Conservation Policy and Hatchery Management Policy, Greater Sage-Grouse Conservation Assessment and Strategy for Oregon, Oregon Plan for Salmon and Watershed Health, Bighorn Sheep and Rocky Mountain Goat Plan, Elk Management Plan, Mule Deer Management Plan, Wolf Management Plan and Cougar Management Plan, and Oregon Conservation Strategy.
WDFW Washington Comprehensive Wildlife Conservation Strategy (only used in Washington's portions of the BLM).
Oregon's Statewide Comprehensive Historic Preservation Plan
Oregon Water Resource Commission's 1995-1999 Strategic Water RMP
OPRD State Scenic Waterway management plans
Division of State Land and the State Land Board Asset Management Plan
Oregon Noxious Weed Strategic Plan

Other Federal Agency Plans

Malheur National Forest Land Use Plan (1990)
Wallowa-Whitman National Forest Land Use Plan (1990)
Hells Canyon National Recreation Area Comprehensive Management Plan (1993)
Umatilla National Forest Land Use Plan (1990)
Boardman Bombing Range-Integrated Natural Resources Management Plan (1999)
Umatilla Army Depot Installation Restoration Program (1993)
Two Rivers RMP (1986)
John Day RMP (1985)

John Day River Management Plan (2001)
John Day Basin Draft RMP (2009)
Southeastern Oregon RMP (2002)

CHAPTER 2. ALTERNATIVES

A. INTRODUCTION

This chapter describes and compares six alternatives, which consist of the "No Action" Alternative and five action alternatives, along with one sub-alternative. Each alternative consists of a set of management goals, management objectives, land use allocations, and the management actions needed to meet the stated purpose and need for the Baker Resource Management Plan (RMP) revision (see Chapter 1). Each alternative is subsequently assessed for potential environmental impacts, which are summarized at the end of this chapter. A detailed discussion of potential impacts by alternatives is presented in Chapter 4, Environmental Consequences. Each alternative represents a different emphasis for potential management, as defined by the application of the following:

Management goals that are broad statements of desired outcomes that usually are not quantifiable and usually pertain to all alternatives

Management objectives that identify specific desired outcomes for resources and are usually quantifiable and measurable and may have established timeframes for achievement

Land use allocations that identify areas where specific activities are allowed, restricted, or excluded, such as national landscape conservation system lands, riparian management areas (RMAs), right-of-way (ROW) exclusion areas for development (e.g., energy development), off-highway vehicle (OHV) management areas, and available or unavailable grazing areas

Management actions that provide measures that will be applied to activities covered by the RMP to achieve management objectives for resource management programs

Monitoring that will be used to determine if the resource management objectives are being met, or whether the management actions need to be revised to meet such objectives

Most management goals are the same for the action alternatives and all goals meet the purpose and need. Management goals for the No Action Alternative are often not the same as the management goals for the action alternatives, or they are entirely lacking, and, therefore, do not meet the purpose and need. The management objectives, land use allocations, and management actions can differ among all action alternatives as they address and resolve the purpose and need in different ways. For instance, the management actions may vary in terms of the degree of protection offered for each resource and use; the approaches to management for each resource and use; combinations of allowable, conditional, and prohibited uses in various parts of the Decision Area; and/or levels and methods for restoration.

While the Bureau of Land Management (BLM) would generally apply management actions where and when necessary and practical to achieve management objectives, they may decide not to apply a management action when:

Site-specific circumstances would make application of the management action unnecessary to achieve RMP objectives
Site-specific circumstances would make application of the management actions impractical
Application of the management action would be inconsistent with other RMP decisions

1. DEVELOPMENT OF THE ALTERNATIVES

The No Action Alternative, which involves continuing to implement the current Baker RMP (BLM 1989), as modified due to subsequent plan modifications and amendments (see BLM 2009). In addition to the No Action Alternative, the BLM developed five alternatives and one sub-alternative using public comments, ideas, and concerns from the BLM planning team, and input from state and federal agencies and tribal and local governments. National Environmental Policy Act (NEPA) and BLM management planning regulations(43 Code of Federal Regulations [CFR] 1610.4-5) require the formulation of a reasonable range of alternatives that explore alternative means of meeting the purpose and need for the RMP revision. The purpose and need statement thus helps define the range of alternatives.

In addition to fulfilling the purpose and need, a reasonable alternative must also be feasible and practicable, not exorbitant, and not merely a variation of an alternative analyzed in detail. The BLM designed each action alternative presented in this chapter to meet the purpose and need for the RMP; address the issues identified in Chapter 1; and conform to current laws, regulations, and policies.

a. No Action Alternative

Council on Environmental Quality regulations direct that environmental impact statements (EISs) describe the No Action Alternative (40 CFR 1502.14 (d)), which involves continuing to implement the management direction in the current Baker RMP (BLM 1989), along with management guidance from other management plans and documents that amend the current RMP (i.e., plan amendments). Changes in a number of areas due to new data, new or revised policy, and/or changes in circumstances not addressed under current management direction have led to the need to revise the current Baker RMP (BLM 1989). Since it would be a continuation of current management practices, the No Action Alternative is the only alternative analyzed in this Draft RMP/EIS that does not respond to the purpose and need for the RMP revision. As a result, the No Action Alternative provides both a useful baseline for comparison of environmental effects (including cumulative effects) and demonstrates the consequences of not meeting the purpose and need for the RMP revision.

Details of the objectives, allocations, and management actions that comprise the No Action Alternative are provided in Table 2-2– Table 2-29, where they are presented alongside those of the action alternatives. The key components of the No Action Alternative are summarized below:

The BLM would manage rangeland vegetation to achieve greater amounts of mid- or late-seral conditions, dependent of geographic unit (GU) direction.

The BLM would leave open all grazing lands except for Hunt Mountain Area of Critical Environmental Concern (ACEC), South Fork Walla Walla ACEC, portions of the Oregon Trail ACEC, and portions of the Keating Riparian ACEC for potential livestock use. Acquired lands in the Grande Ronde ACEC would not be left open for livestock.

The BLM would manage the majority of forestlands to produce timber.

The BLM would use prescribed fire, planned ignitions, and unplanned ignitions in order to meet resource objectives, such as to manipulate plant succession, increase habitat diversity, promote nutrient cycling, reduce fuel loads, control insect and disease infestations, control unwanted vegetation, and to reintroduce fire into a natural role.

The BLM would designate all public lands that constitute the Decision Area as "open" to cross-country travel, except for certain areas within special management areas (SMAs) that are closed to off-road travel or specific roads or trails that are closed.

Wild sections of wild and scenic rivers (WSRs), wilderness areas, and the National Historic Oregon Trail Interpretive Center (NHOTIC), consisting of 3,602 acres, would remain withdrawn from mineral entry, subject to valid existing claims. In addition, the BLM would continue to pursue withdrawal for mineral entry for 185 acres in the Keating Riparian ACEC and 213 acres within the Straw Ranch and Echo Meadows portions of the Oregon Trail ACEC.

Wilderness areas and wild sections of WSRs would remain excluded from ROW development.

b. Action Alternatives

As stated earlier, the Baker Field Office (FO) developed five action alternatives and one sub-alternative that they are analyzing in this Draft RMP/EIS. Under NEPA, agencies are required to rigorously explore and objectively evaluate a reasonable range of alternatives. Each of the alternatives analyzed in this Draft RMP/EIS represent a set of separate management objectives, land use allocations, and management actions that meet the purpose and need in different ways while remaining feasible and practical, and, as a result, they represent a reasonable range of alternatives.

Management Common to all Action Alternatives

While the management decisions under the five action alternatives and one sub-alternative vary, numerous decisions would be implemented under all the alternatives. Many of these consist of management actions carried forward from the current planning document because the BLM found them acceptable and reasonable under all the alternatives. Many management decisions are common among the alternatives because they reflect current policies, procedures, or other restrictions. This includes management actions in the resource management programs that deal with climate change, air quality, cultural resources, and resources of importance to Native American tribes. The management actions common to all action alternatives can be found in

Tables 2.3 – 2.29, along with those management actions that vary among the alternatives. Below are some of the noteworthy similarities.

Laws, Policies, Mandates, and Authorities

All action alternatives follow all laws, policies, mandates, and authorities that are applicable to the specific resources and resource uses. Applicable regulations are presented in Appendix 1.1.

Standard Operating Procedures

The following is an abbreviated list of the standard operating procedures (SOPs; i.e., administrative actions) that the BLM would follow under all the action alternatives, subject to applicable procedures and regulations. These also apply to the No Action Alternative.

Cooperation, collaboration, and coordination with state and federal agencies; tribal, state, and local governments; and private landowners
Recreation site and facility maintenance and or improvement
Permit issuance
Trespass resolution
Hazardous materials and solid waste removal
Land surveying
Providing for public health and safety
Public signing and environmental education
Preventing the spread of noxious weeds and other invasive plants
Following protocol when surveying/monitoring
Coordination with permittees, operators, contractors, and private land owners
Including pre-project surveys in project design
Competitive and commercial recreation activities
Biological and geophysical sampling and surveying
Road maintenance
Law enforcement
Ongoing incidental removal of trees, snags, or logs for safety or operational reasons
Development of cooperative agreements with other state and federal agencies, tribes, local governments, and private land owners
Monitoring of projects, permits, operations, and contracts
Developing and making available information pamphlets
Implementing of all current laws, regulations, mandates, and BLM policy
Development, award, and administration of contracts
Collection of data from surveys, monitoring, and other studies to update database records
Implementation of mitigation measures to reduce adverse project impacts when applicable

Increasing public awareness, knowledge, and appreciation of the values, benefits, and diversity of various natural resources and resource uses

Supporting research on the biology and ecology of special status plant, wildlife, and fish species, including the completion of conservation strategies for priority special status species, using partnerships with other state, federal, and private organizations

Making available different types of informational signs and pamphlets at recreational kiosks, which includes information on ways to reduce recreational impacts on natural resources

Best Management Practices

Best management practices (BMPs) are applied during implementation of projects and help to ensure that adverse impacts to natural resources are minimized. They are applied based on site-specific evaluation and are effective and practical means to achieve management goals for a given site. A list of current BMPs associated with this Draft RMP/EIS is presented in Appendix 2.1. While BMPs are often developed in conjunction with land use plans, they are not considered land use plan decisions as they require site-specific design. The BLM can update or modify BMPs without a plan amendment. Such updates would be based on the most up-to-date information and data available to the BLM at that time and, if applicable, would be used for the basis of any future amendments/updates to the RMP.

How the Alternatives Address the Significant Issues

All action alternatives address the significant issues identified in Chapter 1. How and where in this Draft RMP they accomplish this is addressed below.

Issue 1: Landscape Health (Vegetative Communities)

Management actions that specifically benefit landscape health, which refers to the condition in which vegetative ecosystems sustain their complexity, diversity, resiliency, and productivity, are addressed in the vegetative communities sections. In addition, most other natural resource sections contain management actions that promote landscape health as well.

Issue 2: Renewable Energy Development (ROWs - Lands and Realty)

Energy development is addressed under lands and realty, under the sub-heading "Land Use Authorizations: Energy and Non-energy ROWs/Leases/Permits." Geothermal energy development is discussed under the leasable minerals section. An ROW is an authorization to place facilities over, on, under, or through public lands for construction, operation, maintenance, or termination of a project. Public lands within the Planning Area are available for ROWs unless within an exclusion area, which is an area with important resource values where land use authorizations would not be authorized in order to ensure the protection of those resources. Right-of-way development could also be restricted in avoidance areas, which are areas

containing sensitive or unique resources where land-use authorizations could result in impacts to the resources, and may not be permitted unless such impacts can be avoided or mitigated.

Issue 3: Transportation and Access (Travel Management)

Bureau of Land Management policy calls for all OHV area designations to be completed at the RMP level. Following this, the five action alternatives calls for the designation of OHV management areas, referred to as "travel management areas." In addition, BLM regulations (See 43 CFR 8342.1, 8342.2[b]) require that RMPs assign OHV area designations to the public lands that constitute the Decision Area. This RMP revision addressees OHV land use allocations for motorized and mechanized vehicle use on an area-wide level, using the following definitions:

> **Closed**: A "closed" area is where no form of motorized vehicular use is allowed, as specifically identified under the final alternative selected for the RMP. The following "closed" areas would exist across all alternatives: wilderness, wilderness study areas (WSAs), wild sections of WSRs, Joseph Creek ACEC, and Oregon Trail ACEC.
> **Open**: An "open" area is where all types of vehicle use is permitted at all times anywhere in the area subject to the operating regulations and vehicle standards set forth in subparts 43 CFR 8341 and 8342. The only area "open" to cross-country travel under all the alternatives would be the Virtue Flat OHV Play Area.
> **Limited**: Unless specifically identified in area management plans or area designations, motorized travel would be "limited" (i.e., restricted) to the interim route network as an interim protection measure until completion of the travel management plan (TMP).

All public lands within the Planning Area would be designated as open, closed, or limited to motorized and mechanical uses in accordance with 43 CFR 8342.1. The five action alternatives do not address specific roads and/or trails segments in the interim route network within the Decision Area unless necessary to provide for human health and safety or if certain routes pose a potential threat on resource values. The BLM defers such management decisions to a more comprehensive, site-specific analysis in a TMP. While the public did identify transportation and access as a major planning issue during the public scoping process, due to time and budgetary constraints, along with limited road inventory data, the BLM will not complete the TMP during the RMP revision process. The BLM intends to complete the comprehensive TMP within five years after the finalization of the revised Baker RMP. The TMP will define the travel management network in the Decision Area and include route designations and route development or decommissioning as necessary within the areas identified as limited. After the revised Baker RMP is finalized, the BLM will not revisit area designations of open or closed.

Within the limited designated areas, the BLM would consider the interim route network (consisting of the current road, primitive roads, and trails inventory) as "shared" routes for motorized, mechanized, and non-motorized uses until the TMP can be prepared to address site-specific routes and routes uses. Until completion of the TMP, the Baker FO would develop maps to identify the interim route networks that would be available for public use. In addition, the

BLM would install or maintain bulletin boards, kiosks, or portal signs to promote information and education in areas of high concentrations of use or where conflicts exist within the limited, open, and closed area designations to reduce potential confusion and future conflicts.

Issue 4: Livestock Grazing (Rangeland Standards)

Management of livestock grazing proposed under the alternatives is directed towards meeting or making significant progress towards fulfilling any unmet rangeland health standards. The BLM has determined that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve rangeland health standards, pursuant to 43 CFR 4180.2(c). Such management includes setting upland and riparian stubble height targets based on Clary and Leininger (2000) and Brewer et al. (2007).

B. DESCRIPTION OF THE ACTION ALTERNATIVES

While all five-action alternatives and the sub-alternative would meet the purpose and need for the RMP revision, each alternative has a different method of accomplishing this task. The alternative descriptions and summary in this section identify some distinctive objectives, land use allocations, and management actions of each alternative, which are provided in full detail in Tables 2.3 - 2.29. A summary of some of the land use allocations and management actions that distinguish the alternatives is presented after the alternative descriptions.

1. ALTERNATIVE 1 (PREFERRED)

Alternative 1 emphasizes adaptive management to achieve long-term ecosystem health and resiliency while providing for a variety of resource uses. Under this alternative, the BLM would promote management activities that maintain and/or restore ecosystem health and connectivity, and place a restoration emphasis on Wyoming big sagebrush and riparian habitats in areas where analysis has shown a degraded condition. Alternative 1 provides for a wide range of activities that benefit local, regional, and national economies. A broad use of tools would be available for resource restoration and stabilization including biological, chemical, mechanical, prescribed fire, and natural processes as appropriate to the ecosystem. Right-of-way development, which includes energy development and mineral entry, would face moderate restrictions.

Alternative 1 includes the following key land use allocations and management actions:

Vegetative Communities: The BLM would maintain or enhance habitat connectivity and biodiversity, emphasizing Wyoming big sagebrush and riparian vegetative communities.

- Management Action: The BLM would reclaim the loss of Wyoming big sagebrush habitat due to authorized BLM actions (e.g., facility developments, vegetation treatments, and route maintenance/construction) at a ratio of 1:2 (e.g., for every acre taken out of production two acres would be reclaimed) for ROWs, leases, energy, and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain

mahogany could be used as substitutes for Wyoming big sagebrush at the same ratio (1:2).

- Management Action: The BLM would manage Wyoming big sagebrush canopy cover with an emphasis on enhancing sagebrush obligate wildlife habitat and ecosystem function. Priority areas would include sage-grouse key habitat in the Powder River and Burnt River watersheds. Sagebrush management methods would primarily include mechanical or herbicidal treatments and, to a lesser degree, prescribed fire.
- Management Action: The BLM would reduce or maintain road density in native Wyoming big sagebrush communities to increase or maintain vegetation connectivity. Motorized primitive trails and roads in the Level II maintenance category or lower that do not receive use would be given priority for removal.
- Management Action: Forage utilization targets would be set based on grazing systems, key plant growth stage, biotic crusts, and wildlife habitat (see Appendix 2.3).
- Management Action: Riparian stubble height targets would apply only to streams that flow at least ¼ -mile across public lands. The BLM would set the target for initial riparian stubble height at 3-4 inches for stream banks that are dry and stable to moderately vulnerable to impacts from livestock grazing, and 6-8 inches for those that are highly vulnerable to impacts from livestock grazing.

Greater sage-grouse: The BLM's objective would be to retain 70 percent or more of the Decision Area's sagebrush habitat, to emphasize preserving advanced sagebrush structural stages, and to maintain the canopy cover to between 5 and 25 percent or more, which is consistent with state strategy. Where livestock is present, a grazing system would be designed that would meet perennial grass stubble height requirements for sage-grouse during nesting and brooding seasons (March 1 through June 30).

- Land Use Allocation: The BLM would designate the proposed Virtue Flat ACEC (42,022 acres), which contains 39,167 acres of identified key sage-grouse habitat, as an exclusion area for new ROWs. This exclusion area would preclude approximately 24 percent of the identified key sage-grouse habitat from new ROW development. The BLM would analyze ROW proposals outside of the exclusion area and mitigate for direct, indirect, and cumulative impacts on sage-grouse on a case-by-basis.
- Management Action: The BLM would follow recommended guidelines in Instruction Memorandum (IM) OR-2009-038 (concerning maintenance of sage-grouse habitat). Such guidelines include a 3-mile avoidance area around all leks for wind development, a half-mile avoidance area for ground-level structures such as roads and buried power lines, and a 2-mile radius for meteorological (MET) towers and aboveground power transmission lines. Within avoidance areas, the BLM would give the highest emphasis for protection to native sagebrush communities.
- Management Action: The BLM would apply a light utilization (21-40 percent) standard on perennial grass understory within occupied sage-grouse nesting/brooding habitat in uplands and riparian areas.

Available Areas for Livestock Grazing: The BLM would authorize livestock grazing where it is compatible with resource management objectives. Forage utilization targets would be set based on grazing systems, key plant growth stage, biotic crusts, and wildlife habitat. Livestock grazing would continue to contribute to a sustainable local livestock industry.

- Land Use Allocation: The BLM would authorize livestock grazing on 388,310 acres, with 40,115 acres unavailable for grazing. Initially, grazing preference would be 47,000 animal unit months (AUMs), changing to an estimated 41,500 AUMs with full implementation of the RMP.
- Management Action: Where rangeland health standards are not met and the BLM has determined that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve such standards, adjustments would be made to livestock grazing pursuant to 43 CFR 4180.2(c). The BLM would then monitor indicators for the standards not met and, in the next evaluation, assess whether the trend is toward meeting standards. In cases where two consecutive evaluations indicate standards are not met, and trend is not upward or objectives have not been achieved (i.e., objectives established in a NEPA analysis, grazing decision, or allotment management plan [AMP]), a 5-year rest period would be given to the pasture, based upon the conditions identified in Table 2-1.

Table 2-1. Factors and Conditions to be Considered Before Mandating Rest from Grazing

Factor	Conditions required to implement mandatory rest treatment
Percent Public Land in the Pasture	Over 50% public land
Vegetation in the Pasture	Predominantly native vegetation, not wheatgrass seedings
Resource conflicts	Any of the following resource conflicts are present: Water quality: Streams in total maximum daily load (TMDL) areas or 303(d) listed stream and tributaries where livestock grazing is part of the cause Special status species habitat SMAs (e.g., WSAs, ACECs, WSRs) High recreational or wildlife values Potential for greater establishment of woody species along riparian zones

The evaluation process referred to above has been ongoing since 2000, with many allotments already due for second rangeland health evaluation, although some have not yet had their first evaluation (see Appendix 3.6 for the progress report). The BLM would develop a schedule so all allotments where standards were not met in a previous evaluation are re-evaluated on 5-year intervals, staggered to maintain a steady workload (i.e., not too many evaluations in any one year).

Travel Management Designations: The BLM would manage motorized and mechanized vehicle uses of public lands to protect resource values, promote public safety, provide use opportunities where appropriate, and minimize conflicts among various users through area designations. The BLM would partially accomplish this by designating roads as open, closed, or limited to motorized and mechanical uses, as well as through the interim

route network, until the Baker FO develops a TMP to specifically address routes and appropriate route uses in the areas identified as limited. Proposed travel management designations change with the emphasis of the alternative in regards to their location, area, and size. Under Alternative 1, such designations area as follows:

- Land Use Allocations: Under Alternative 1, the BLM would designate the Virtue Flat OHV Play Area, which consists of 4,918 acres (1 percent of the Decision Area), as open to OHV use. Congressionally mandated areas (wilderness, wild sections of WSRs, and WSAs); Oregon Trail; French Gulch; Sawmill Creek, Joseph Creek, Hunt Mountain, and Grande Ronde ACECs; and public lands with no legal public access, consisting of 83,214 acres (19 percent of the Decision Area), would be closed to motorized vehicle use. Wilderness and "wild" sections of WSRs would also be closed to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 340,293 acres (80 percent of the Decision Area), would be limited to the interim route network. Upon the completion of the TMP, this interim route network will transition to a designated route network as identified by the TMP.

Development (Including Energy) Exclusion and Avoidance Areas: The BLM would provide for land use authorizations while protecting public safety and conserving and protecting natural resources. The BLM would accomplish the latter by excluding all land use authorizations including energy and non-energy related ROWs, communication site leases, and other permits (unless they already exist) in certain areas. In other areas, the BLM may not authorize such actions unless impacts to the affected resources can be avoided or mitigated.

- Land Use Allocations: Under Alternative 1, the BLM would identify 72,618 acres as exclusion areas, which would include wilderness areas, WSAs, designated and suitable WSR corridors, Oregon Trail ACEC (not including NHOTIC administrative site uses), the proposed Virtue Flat ACEC, and lands with wilderness characteristics. In addition, the BLM would identify 32,299 acres as avoidance areas, which would include special status species habitat (plants), cultural sites, existing and proposed ACECs, NHOTIC Scenic Viewshed, relic sites, and Coyote Peak.

Withdrawals (Mineral Areas): The BLM would ensure the appropriateness of existing withdrawals and pursue new withdrawals that meet federal land-use objectives.

- Land Use Allocations: Congressionally withdrawn areas (i.e., wild sections of WSRs, wilderness, and NHOTIC) totaling 3,602 acres would remain withdrawn from mineral entry, subject to valid existing claims. Withdrawal of public lands from locatable mineral entry would be pursued under Alternative 1 for all WSAs; Auburn and Amelia Town Sites; portions of Hunt Mountain, Magpie Peak, Virtue Flat, and Oregon Trail ACECs; Balm Creek portion of Keating Riparian ACEC; and federally listed species critical habitat, totaling 20,096 acres. Altogether, withdrawn areas and areas pursued for withdrawal total 23,698 acres.

2. ALTERNATIVE 2

Alternative 2 emphasizes the sustainable development of natural resources, recognizing the public's need for domestic sources of minerals, energy, food, timber, and fiber from public lands, and protecting the custom, culture, and economic stability of local communities. While Alternative 2 adheres to all laws and BLM mandates and policies, strives towards ecosystem health, and maintains or enhances Wyoming big sagebrush and riparian habitats, it places special emphasis on development, recreational opportunities, livestock grazing, timber harvest, and other resource uses for economic gain. A broad set of tools would be available for resource restoration and stabilization including biological, chemical, mechanical, prescribed fire, and natural processes where appropriate, feasible, and beneficial to the ecosystem. Right-of-way development (including energy development) and locatable mineral entry would be the least restricted under this alternative.

Alternative 2 includes the following key management objectives, land use allocations, and management actions:

Vegetative Communities: The BLM would maintain or enhance habitat connectivity and biodiversity, emphasizing Wyoming big sagebrush and riparian vegetative communities.

- Management Action: The BLM would reclaim the loss of Wyoming big sagebrush habitat due to authorized BLM actions (e.g., facility developments, vegetation treatments, and route maintenance/construction) at a ratio of 1:1 (e.g., for every acre taken out of production one acre would be reclaimed) for ROWs, leases, and energy and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain mahogany could be used in substitute of Wyoming big sagebrush at the same ratio (1:1). Restoration projects would be conducted in areas that would result in a net increase in livestock available forage.
- Management Action: Where appropriate, the BLM would reduce Wyoming big sagebrush cover to improve perennial understory vegetation production for livestock use while maintaining or enhancing landscape-scale sagebrush obligate wildlife species habitat. Grazing allotments that have more than 20 percent Wyoming big sagebrush canopy cover and have a healthy understory of native grass would have the highest priority for sagebrush canopy cover reduction projects. The primary method to treat sagebrush cover would be prescribed burning, herbicide, and mechanical treatments.
- Management Action: The BLM would maintain road density in Wyoming big sagebrush communities or increase, if necessary, to provide for more development, recreational opportunities, livestock grazing, timber harvest, and other resource uses for economic gain.
- Management Action: The BLM would set a 60 percent utilization limit on deferred rotation and rest rotation grazing systems on native range, and 65 percent on wheatgrass seedings. On rotational or spring/fall systems, utilization would be 50

percent of annual forage production. The BLM would set a 40 percent utilization limit for continuous spring, spring/ summer, and season-long grazing. The use objectives are designed to fit the benefits of the various grazing systems while still maintaining and improving the vigor of the key species.

- Management Action: Riparian stubble height targets would only apply to streams that flow at least one mile across public lands. The target for initial riparian stubble height would be set at 2-3 inches for stream banks that are dry and stable to moderately vulnerable to livestock impacts and 3-4 inches for those that are moderately to highly vulnerable to impacts from livestock grazing.

Greater Sage-grouse: The BLM's objective would be to retain 70 percent or more of the Decision Area's sagebrush habitat, with an emphasis on preserving advanced sagebrush structural stages and maintaining the canopy cover to between 5 and 25 percent, as consistent with the state strategy. Where livestock is present, the BLM would design a grazing system that would meet perennial grass stubble height requirements for sage-grouse during nesting and brooding seasons (March 1 through July 30).

- Land Use Allocation: The BLM would exclude approximately 1,206 acres in the Powder River WSR and 1,190 acres in the Oregon Trail ACEC (2,396 acres total) of identified sage-grouse key habitat from new ROWs. These two exclusion areas would preclude less than 1 percent of the identified key sage-grouse habitat from new ROW development. The BLM would analyze ROW proposals outside of the exclusion area and mitigate for direct, indirect, and cumulative impacts on sage-grouse on a case-by-basis.
- Management Action: The BLM would use a 2-mile avoidance buffer around leks considered occupied by Oregon Department of Fish and Wildlife (ODFW) for wind development. Within these avoidance areas, the BLM would emphasize the protection and retention of native sagebrush communities.
- Management Action: The BLM would allow no more than moderate utilization (41-60 percent) of perennial grass understory within occupied sage-grouse nesting/brooding habitat (in normal production years).
- Management Action: The BLM would maintain current management for grazing systems within nesting and brooding areas.

Available Areas for Livestock Grazing: The BLM would authorize livestock grazing in specified locations to follow Oregon/Washington standards and guidelines consistent with other resource goals and public land use allocations, while simultaneously contributing to a sustainable local livestock industry. Range forage would be allocated for livestock to achieve proper grazing use while meeting multiple resource objectives.

- Land Use Allocation: The BLM would authorize livestock grazing on 396,210 acres, with 32,215 acres unavailable for grazing. Initially, grazing preference would be 47,000 AUMs, changing to an estimated 47,350 AUMs with full implementation of the RMP.

- Management Action: Where rangeland health standards are not met and the BLM has determined that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve such standards, adjustments would be made to livestock grazing pursuant to 43 CFR 4180.2(c). The BLM would then monitor indicators for the standards not met and, in the next evaluation, assess whether the trend is toward meeting standards. In cases where two consecutive evaluations indicate standards are not met, and the trend is not upward or objectives have not been achieved, the BLM would make grazing adjustments through periods of use, grazing systems, rest periods, range improvement projects, or AUMs permitted. The rest period would be discretionary instead of mandatory.
- Management Action: Range improvement projects would include 1,500 acres of new seedings where currently there are non-native annual grass monocultures. The BLM would then seed such areas with non-native perennial grass found to be desirable, or initially seed with non-native desirable perennial grass then re-seed with native species once the non-native perennial grass species become established. The BLM would place an emphasis for restoration projects on increasing livestock production while placing a lesser emphasis on increasing habit for sagebrush-obligated species and improving habitat connectivity.
- Management Action: The BLM would set upland grass utilization levels at 50 percent.

Travel Management Designations: The BLM would manage motorized and mechanized vehicle uses of public lands to protect resource values, promote public safety, provide use opportunities where appropriate, and minimize conflicts among various users through area designations. The BLM would partially accomplish this by designating roads as open, closed, or limited to motorized and mechanical uses in sensitive areas, as well as through the interim route network, until the Baker FO develops a TMP to specifically address routes and appropriate route uses in the areas identified as limited. Travel management designations change with the emphasis of the alternative in regards to their location, area, and size. For this alternative, those designations are as follows:

- Land Use Allocations: Under Alternative 2, the BLM would designate Virtue Flat OHV Play Area, Denny Flat, and Sunday Hill, totaling 22,074 acres (5 percent of the Decision Area), as open to OHV use. Congressionally mandated areas (wilderness, wild sections of WSRs, and WSAs); Sawmill Creek; Oregon Trail, Joseph Creek, and Grande Ronde ACECs, consisting of 39,109 acres (9 percent of the Decision Area), would be closed to motorized vehicle use. Wilderness and "wild" sections of WSRs would also be closed to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 367,242 acres (86 percent of the Decision Area), would be limited to the interim route network.

Development (Including Energy) Exclusion and Avoidance Areas: The BLM would provide for land use authorizations while protecting public safety and conserving and protecting natural resources. The BLM would accomplish the latter by excluding all land

use authorizations including energy and non-energy related ROWs, communication site leases, and other permits (unless they already exist) in certain areas. In other areas, the BLM may not authorize such actions unless impacts to the affected resources can be avoided or mitigated.

- Land Use Allocations: Under Alternative 2, the BLM would identify 25,236 acres as exclusion areas, which would include wilderness, WSAs, designated WSR corridors, and Oregon Trail ACEC (not including NHOTIC administrative site uses). In addition, the BLM would identify 25,725 acres as avoidance areas, which would include special status species habitat (plants), cultural sites, NHOTIC, relic sites, and existing ACECs (minus Hunt Mountain).

Withdrawals (Mineral Areas): The BLM would ensure the appropriateness of existing withdrawals and pursue new withdrawals that meet federal land-use objectives.

- Land Use Allocations: Congressionally withdrawn areas (i.e., wild sections of WSRs, wilderness, and NHOTIC) totaling 3,602 acres would remain withdrawn from mineral entry, subject to valid existing claims. The BLM would not pursue additional withdrawal of public lands from mineral entry under Alternative 2.

3. ALTERNATIVE 3

Alternative 3 emphasizes recreational use and opportunities on public lands for the enjoyment of present and future generations through a wide range of sustainable recreational activities. Management actions focus on visitor experience, uses, facilities, and access, with provisions for a moderate amount of ecosystem health maintenance and/or restoration. The BLM would place restoration emphasis on Wyoming big sagebrush and riparian habitats in areas where analysis has shown a degraded condition. The Decision Area would support a wide range of recreational activities that could benefit local, regional, and national economies. Alternative 3 allows for a broad use of tools for resource restoration and stabilization including biological, chemical, mechanical, prescribed fire, and natural processes where appropriate, feasible, and beneficial to the ecosystem. Right-of-way development and locatable mineral entry would experience moderate restrictions.

Alternative 3 includes the following key management objectives, land use allocations, and management actions:

Vegetative Communities: The BLM would maintain or enhance connectivity and biodiversity, with emphasis on Wyoming big sagebrush and riparian vegetative communities.

- Management Action: The BLM would reclaim the loss of Wyoming big sagebrush habitat due to authorized BLM actions (e.g., facility developments, vegetation treatments, and route maintenance/construction) at a ratio of 1:2 (i.e., for every acre taken out of production two acres would be reclaimed) for ROWs, leases, and energy and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain

mahogany could be used in substitution for Wyoming big sagebrush at the same ratio (1:2).

- Management Action: The BLM would manage Wyoming big sagebrush canopy cover with an emphasis on enhancing sagebrush obligate wildlife habitat and ecosystem function. Priority areas would include sage-grouse habitat in the Powder River and Burnt River watersheds. Sagebrush management methods would primarily include mechanical or herbicide and, to a lesser degree, prescribed fire.
- Management Action: The BLM would reduce or maintain road density in native Wyoming big sagebrush communities to increase or maintain vegetation connectivity. The BLM would place a priority for removal on motorized primitive trails and roads in areas in the Level II maintenance category or lower that receive no use.
- Management Action: The BLM would set forage utilization targets based on the grazing system, key plant growth stage, biotic crusts, and wildlife habitat.
- Management Action: The BLM would set the target for initial riparian stubble height at 2-3 inches for stream banks that are dry and stable, 3-4 inches for those that are moderately vulnerable to impacts from livestock grazing, and 6-8 inches for those that are highly vulnerable to impacts from livestock grazing or in areas where over browsing of aspen or willow is a problem. Such stubble height targets would only apply to streams that flow at least half of a mile across public lands.

Greater Sage-grouse: The BLM's objective would be to retain 70 percent or more of the Decision Area sagebrush habitat, with an emphasis on preserving advanced sagebrush structural stages and maintaining the canopy cover to between 5 and 25 percent or more, as consistent with state strategy. Where livestock is present, the BLM would design a grazing system that would meet perennial grass stubble height requirements for sage-grouse during nesting and brooding seasons (March 1 through July 30).

- Land Use Allocation: The BLM would exclude portions of the Powder River WSR, Oregon Trail ACEC, NHOTIC viewshed, and the Virtue Flat OHV Play Areas (13,295 acres) that contain identified sage-grouse key habitat from new ROWs. These exclusion areas would preclude approximately 8 percent of the identified key sage-grouse habitat from new ROW development. The BLM would analyze ROWs outside of the exclusion areas and mitigate for direct, indirect, and cumulative impacts on sage-grouse on a case-by-basis.
- Management Action: The BLM would place a 3-mile avoidance area buffer on all occupied leks for wind development, a half-mile avoidance area for ground-level structures such as roads and buried power lines, and a 2-mile radius for MET towers and above ground power transmission lines. Within avoidance areas, the BLM would place the highest emphasis on the protection of native sagebrush communities.
- Management Action: The BLM would allow no more than moderate utilization (41-60 percent) of perennial grass understory within occupied sage-grouse nesting/brooding habitat in uplands and riparian areas.

Available Areas for Livestock Grazing: The BLM would authorize livestock grazing in specific locations to follow Oregon/Washington standards and guidelines consistent with other resource goals and public land use allocations, while simultaneously contributing to a sustainable local livestock industry. The BLM would allocate range forage for livestock to achieve proper grazing use while meeting multiple resource objectives.

- Land Use Allocation: The BLM would authorize livestock grazing on 380,165 acres, with 48,260 acres unavailable for grazing. Initial grazing preference would be 46,320 AUMs, changing to an estimated 35,500 AUMs with full implementation of the RMP.
- Management Action: Where rangeland health standards are not met and the BLM has determined that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve such standards, adjustments would be made to livestock grazing pursuant to 43 CFR 4180.2(c). The BLM would then monitor indicators for the standards not met, and assess at the next evaluation whether the overall trend is toward meeting standards. In cases where two consecutive evaluations indicate standards are not met, and the overall trend is not upward or objectives have not been achieved, a 5-year rest period would be given to the pasture if three or more resource conflicts are identified (see Table 2-1). In addition, the BLM would remove or reduce grazing in areas of high recreational value if there are persistent conflicts.
- Management Action: The BLM would not authorize livestock grazing in Improve (I) and Management (M) category allotments between September 1 and November 30 to reduce conflicts between grazing and big game hunting. Grazing in seedings or annual grass-dominated pastures, or temporary nonrenewable grazing for vegetation management could still be authorized during hunting season.
- Management Action: Range improvement projects would include 1,000 acres of new seedings where currently there are non-native annual grass monocultures. The BLM would initially seed such areas with desirable non-native perennial grass, or initially seed with non-native desirable perennial grass then re-seed with native species once the non-native perennial grass species become established. The BLM would place an emphasis for restoration projects on areas that improve recreational opportunities, while placing a lesser emphasis on increasing habit for sagebrush-obligate species and improving habitat connectivity.

Travel Management Designations: The BLM would manage motorized and mechanized vehicle uses of public lands to protect resource values, promote public safety, provide use opportunities where appropriate, and minimize conflicts among various users through area designations. The BLM would partially accomplish this by designating roads as open, closed, or limited to motorized and mechanical uses, as well as through the interim route network, until the Baker FO develops a TMP to address routes and appropriate route uses in the areas identified as limited. Travel management designations change with the emphasis of the alternative in regards to their location, area, and size. For this alternative, those designations are as follows:

- Land Use Allocations: Under Alternative 3, the BLM would designate Virtue Flat OHV Play Area, Denny Flat, and Sunday Hill, consisting of 22,074 acres (5 percent of the Decision Area), as open to OHV use. Congressionally mandated areas (wilderness, wild sections of WSRs, and WSAs); Sawmill Creek, Oregon Trail, Joseph Creek, Hunt Mountain, and Grande Ronde ACECs; and areas with no legal public access, consisting of 75,174 (18 percent of the Decision Area), would be closed to motorized vehicle use. Wilderness and "wild" sections of WSRs would also be closed to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 331,177 acres (77 percent of the Decision Area), would be limited to the interim route network.

Development (Including Energy) Exclusion and Avoidance Areas: The BLM would provide for land use authorizations while protecting public safety and conserving and protecting natural resources. The BLM would accomplish the latter by excluding all land use authorizations including energy and non-energy related ROWs, communication site leases, and other permits (unless they already exist) in certain areas. In other areas, the BLM may not authorize such actions unless impacts to the affected resources can be avoided or mitigated.

- Land Use Allocations: Under Alternative 3, the BLM would identify 40,500 acres as exclusion areas, which would include wilderness, WSAs, designated and suitable WSR corridors, Oregon Trail ACEC (not including NHOTIC administrative site uses), Virtue Flat OHV Play Area, and NHOTIC Scenic Viewshed. In addition, the BLM would identify 35,170 acres as avoidance areas, which would include special status species habitat (plants), cultural sites, relic sites, existing and proposed ACECs, and lands with wilderness characteristics.

Withdrawals (Mineral Areas): The BLM would ensure the appropriateness of existing withdrawals and pursue new withdrawals that meet federal land-use objectives.

- Land Use Allocations: Congressionally withdrawn areas (i.e., wild sections of WSRs, wilderness, and NHOTIC) totaling 3,602 acres would remain withdrawn from mineral entry, subject to valid existing claims. The BLM would pursue withdrawal of public lands from mineral entry for WSAs; Auburn and Amelia Town Sites; and portions of Magpie Peak, Hunt Mountain, Keating Riparian (Balm Creek), and the Oregon Trail (White Swan and Flagstaff Hill) ACECs, totaling 6,041 acres. Altogether, withdrawn areas and areas pursued for withdrawal total 9,643 acres.

4. ALTERNATIVE 4

Alternative 4 focuses on aggressive protection and restoration measures to maintain or enhance native vegetation, biodiversity, and habitat connectivity. It emphasizes management actions that are the quickest to move towards long-term ecosystem health and resiliency. Wyoming big sagebrush and riparian habitats would be focus areas because these habitats are often in a degraded condition. Alternative 4 allows for a broad use of tools for resource restoration and

stabilization, including biological, chemical, mechanical, prescribed fire, and natural processes where appropriate, feasible, and beneficial to the ecosystem. While livestock grazing could be used as a tool to achieve desired resource conditions, opportunities for livestock grazing and other resource commodity uses or development that benefit local, regional, and national economies would be limited or reduced under this Alternative. Particular types of ROW development and locatable mineral entry would face substantial restrictions.

Alternative 4 includes the following key management objectives, land use allocations, and management actions:

Vegetative Communities: The BLM would maintain or enhance habitat connectivity and biodiversity, emphasizing Wyoming big sagebrush and riparian vegetative communities.

- Management Action: The BLM would reclaim the loss of Wyoming big sagebrush habitat due to authorized BLM actions (e.g., facility developments, vegetation treatments, and route maintenance/construction) at a ratio of 1:3 (i.e., for every acre taken out of production, three acres would be reclaimed) for ROWs, leases, and energy and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain mahogany could be used in substitution of Wyoming big sagebrush; although reclamation would be reduced to a 1:2 ratio since the opportunity of resection for these plant community types is limited.
- Management Action: The BLM would manage Wyoming big sagebrush canopy cover with an emphasis on enhancing sagebrush obligate wildlife habitat and ecosystem function. Priority areas would include the sage-grouse key habitat in the Powder River and Burnt River watersheds. Sagebrush management methods would primarily include mechanical or herbicidal and, to a lesser degree, prescribed fire.
- Management Action: The BLM would reduce road density in native Wyoming big sagebrush communities in order to increase vegetative connectivity.
- Management Action: The BLM would set a light (21-40 percent) livestock grazing utilization target for uplands. The BLM would not adjust upland utilization targets beyond this range, which is different from Alternatives 1 and 3 where utilization levels could be reevaluated in the future based on the grazing system, key plant growth stage, biotic crusts, and wildlife habitat needs.
- Management Action: The BLM would set riparian stubble height targets at 6-8 inches for all streams, which would apply only to streams that flow at least one-eighth of a mile across public lands.

Greater Sage-grouse: The BLM's objective would be to maintain 100 percent of the Decision Area's sagebrush habitat, and emphasize on preserving advanced sagebrush structural stages and maintaining the canopy cover at between 5 to 25 percent or more, as consistent with state strategy. Where livestock is present, the BLM would design a grazing system that would meet perennial grass stubble height requirements for sage-grouse during nesting and brooding seasons (March 1 through July 30).

- Land Use Allocation: The BLM would designate the proposed Virtue Flat ACEC (42,022 acres) and Denny Flat ACEC (3,919 acres), which contain 43,086 acres of identified key sage-grouse habitat, as exclusion areas for new ROWs. The BLM would also exclude identified key sage-grouse habitat in the Powder River WSR and Oregon Trail ACEC (totaling 2,396 acres) from new ROWs. These exclusion areas would preclude approximately 26 percent of the identified key sage-grouse habitat in the Decision Area from all new ROW development. In addition, 51 percent of identified key sage-grouse habitat would be precluded from wind energy development. Outside the exclusion areas, the BLM would analyze ROW proposals and mitigate for direct, indirect, and cumulative impacts on sage-grouse on a case-by-basis.
- Management Action: The BLM would authorize no wind energy development within identified key sage-grouse habitat. The BLM would use a 3-mile avoidance buffer on occupied leks for wind development that fall outside of identified key sage-grouse habitat (as opposed to Alternative 1, which proposes an avoidance buffer on all leks). Within the avoidance area, the highest level of protection would be given to native sagebrush communities. In addition, the BLM would use a half-mile avoidance area for ground level structures such as roads and buried power lines, and a 2-mile radius for MET towers and above ground power transmission lines. Within avoidance areas, the BLM would give the highest emphasis for protection to native sagebrush communities.
- Management Action: The BLM would apply a light utilization (21-40 percent) standard on perennial grass understory within occupied sage-grouse nesting and brooding habitat.
- Management Action: To provide for suitable perennial grass cover for nesting and brooding areas, the BLM would adjust the season of use, if necessary, to assure adequate residual re-growth for grass species.

Available Areas for Livestock Grazing: The BLM would authorize livestock grazing in specific locations to follow Oregon/Washington standards and guidelines consistent with other resource goals and public land use allocations, while simultaneously contributing to a sustainable local livestock industry. The BLM would allocate range forage for livestock to achieve proper grazing use while meeting multiple resource objectives.

- Land Use Allocation: The BLM would authorize livestock grazing on 334,260 acres, with 94,165 acres unavailable for grazing. Initially, grazing preference would be 42,150 AUMs, changing to an estimated 30,700 AUMs with full implementation of the RMP.
- Management Action: Where rangeland health standards are not met and the BLM has determined that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve such standards, adjustments would be made to livestock grazing pursuant to 43 CFR 4180.2(c). The BLM would then monitor indicators for the standards not met and assess whether the trend is toward meeting standards during the next evaluation. In cases where two consecutive

evaluations indicate standards are not met, and trend is not upward or objectives have not been achieved, the BLM would not authorize grazing in that pasture for the life of the RMP (unless a specific plan amendment was completed).

- Management Action: Range improvement projects would include 1,500- 3,000 acres of new native seedings where currently there are non-native annual grass monocultures. Reseeding would be according to best available science on establishing native vegetation on annual dominated sites. Emphasis for restoration projects would be to increase connectivity of native vegetation, to improve special status species potential habitat, and to improve or maintain livestock production.

Travel Management Designations: The BLM would manage motorized and mechanized vehicle uses of public lands to protect resource values, promote public safety, provide use opportunities where appropriate, and minimize conflicts among various users through area designations. The BLM would partially accomplish this by designating roads as open, closed, or limited to motorized and mechanical uses, as well as through the interim route network, until the Baker FO develops a TMP to specifically address routes and appropriate route uses in the areas identified as limited. Travel management designations change with the emphasis of the alternative in regards to their location, area, and size. For this alternative, those designations are as follows:

- Land Use Allocations: Under Alternative 4, the BLM would designate the Virtue Flat OHV Play Area, consisting of 4,918 acres (1 percent of the Decision Area), as open to OHV use. Congressionally mandated areas (wilderness, wild sections of WSRs, and WSAs); Oregon Trail; French Gulch; Joseph Creek, Keating Riparian (Sawmill Creek), Hunt Mountain, Grande Ronde, and Virtue Flat ACECs; and areas with no legal public access, consisting of 124,515 acres (31 percent of the Decision Area), would be closed to motorized vehicle use. The BLM would also close wilderness and "wild" sections of WSRs to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 298,992 acres (68 percent of the Decision Area), would be limited to the interim route network.

Development (Including Energy) Exclusion and Avoidance Areas: The BLM would provide for land use authorizations while protecting public safety and conserving and protecting natural resources. The BLM would accomplish the latter by excluding all land use authorizations, including energy and non-energy related ROWs, communication site leases, and other permits (unless they already exist) in certain areas. In other areas, the BLM may not authorize such actions unless impacts to the affected resources can be avoided or mitigated.

- Land Use Allocations: Under Alternative 4, the BLM would identify 81,152 acres as exclusion areas, which would include wilderness, WSAs, designated and suitable WSR corridors, Oregon Trail ACEC (not including NHOTIC administrative site uses), Virtue Flat ACEC, Denny Flat ACEC, and lands with wilderness characteristics. The BLM would designate a 5-mile exclusion area for wind development around all sage-grouse leks, totaling an additional 44,328 acres, and

identify 153,941 acres as avoidance areas, which would include special status species habitat (plants), cultural sites, existing and proposed ACECs (except those identified as exclusion areas), NHOTIC Scenic Viewshed, relic sites, and Coyote Peak.

Withdrawals (Mineral Areas): The BLM would ensure the appropriateness of existing withdrawals and pursue new withdrawals that meet federal land-use objectives.

- Land Use Allocations: Congressionally withdrawn areas (i.e., wild sections of WSRs; wilderness; and NHOTIC) totaling 3,602 acres would remain withdrawn from mineral entry, subject to valid existing claims. The BLM would pursue withdrawal of public lands from locatable mineral entry for WSAs; Auburn and Amelia town sites; portions of Hunt Mountain, Magpie Peak, Virtue Flat, Keating Riparian (Balm Creek), and the Oregon Trail ACECs; and federally listed species critical habitat, totaling 20,096 acres. Withdrawn areas and areas pursued for withdrawal, combined, would equal 23,698 acres under Alternative 4.

5. ALTERNATIVE 5

Alternative 5 focuses on allowing natural processes to take place with an emphasis on "light on the land" management actions. The BLM would promote management activities that maintain and/or restore ecosystem health, including Wyoming big sagebrush and riparian habitat, only when such activities can be accomplished with minimal ground disturbance. The range of activities that benefit local, regional, and national economies would be limited or reduced under this Alternative. The range of management tools available for resource restoration and stabilization would also be limited. Land use authorizations, including for particular types of energy development, would face substantial restrictions. Mineral entry would be restricted in many areas.

Alternative 5 includes the following key management objectives, land use allocations, and management actions:

Vegetative Communities: The BLM would maintain or enhance habitat connectivity and biodiversity, with an emphasis on Wyoming big sagebrush and riparian vegetative communities.

- Management Action: The BLM would reclaim loss of Wyoming big sagebrush habitat from authorized BLM actions (e.g., facility developments, vegetation treatments, and route maintenance/construction) at a ratio of 1:3 (e.g., for every acre taken out of production, three acres would be reclaimed). Reclaimed areas would be reseeded only by aerial or broadcast methods. Aspen, bitterbrush, willow, or mountain mahogany could be used during reclamation efforts in substitution of Wyoming big sagebrush; although reclamation would be reduced to a 1:2 ratio since the opportunity of resection for these plant community types is limited.
- Management Action: The BLM would manage Wyoming big sagebrush canopy cover with an emphasis on enhancing sagebrush obligate wildlife habitat and

ecosystem function. Priority areas would include the sage-grouse habitat in the Powder River and Burnt River watersheds. Sagebrush management methods would primarily include mechanical or herbicidal treatments and, to a lesser degree, prescribed fire. The BLM would authorize only non-ground disturbing mechanical treatments and utilize natural processes as the primary tool to manage Wyoming big sagebrush communities.

- Management Action: The BLM would reduce road density by reclaiming roads in native Wyoming big sagebrush communities to increase vegetation connectivity.
- Management Action: The BLM would set forage utilization targets in uplands for light use (21-40 percent).
- Management Action: The BLM would set riparian stubble height targets at 6-8 inches for all stream banks, which would only apply to streams that flow at least one-eighth of a mile across public lands. The BLM would not allow grazing on all 303(d) streams.

Greater Sage-grouse: The BLM's objective would be to maintain 100 percent of the Decision Area's sagebrush habitat, with an emphasis on preserving advanced sagebrush structural stages and maintaining the canopy cover to between 5 and 25 percent or more, as consistent with state strategy. Where livestock is present, the BLM would design a grazing system that would meet perennial grass stubble height requirements for sage-grouse during nesting and brooding seasons (March 1 through July 30).

- Land Use Allocation: The BLM would designate all proposed and existing ACECs, which contain approximately 51,026 acres of identified key sage-grouse habitat, as exclusion areas for new ROWs, as well as exclude identified key sage-grouse habitat in a portion of the Powder River WSR from new ROWs. These exclusion areas would preclude approximately 30 percent of the identified key sage-grouse habitat from new ROW development. Furthermore, the BLM would set an exclusion area buffer of 5 miles for wind development around all leks. This equates to an additional 114,757 acres of identified key sage-grouse habitat that would be precluded from wind energy development. Overall, Alternative 5 precludes 96 percent of identified key sage-grouse from wind energy development. Outside of the exclusion areas, the BLM would analyze ROW proposals and mitigate for direct, indirect, and cumulative impacts on sage-grouse on a case-by-basis.
- Management Action: The BLM would apply a light utilization (21-40 percent) standard on perennial grass understory within occupied sage-grouse nesting and brooding habitat. To provide for suitable perennial grass cover for nesting and brooding areas, the BLM would adjust season of use if necessary to assure adequate residual re-growth for grass species.

Available Areas for Livestock Grazing: The BLM would authorize grazing in specific locations to follow Oregon/Washington standards and guidelines consistent with other resource goals and public land use allocations, while simultaneously contributing to a

sustainable local livestock industry. The BLM would allocate range forage for livestock to achieve proper grazing use while meeting multiple resource objectives.

- Land Use Allocation: The BLM would authorize livestock grazing on 263,915 acres, with 164,510 acres unavailable for grazing. Initially, grazing preference would be 35,760 AUMs, changing to an estimated 22,500 AUMs with full implementation of the RMP.
- Management Action: Where rangeland health standards are not met and the BLM has determined that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve such standards, adjustments would be made to livestock grazing pursuant to 43 CFR 4180.2(c). The BLM would then monitor indicators for the standards not met and assess whether the trend is toward meeting standards during the next evaluation. In cases where two consecutive evaluations indicate standards are not met, and trend is not upward or objectives have not been achieved, the BLM would not authorize grazing in that pasture for the life of the RMP.

Travel Management Designations: The BLM would manage motorized and mechanized vehicle uses of public lands to protect resource values, promote public safety, provide use opportunities where appropriate, and minimize conflicts among various users through area designations. The BLM would partially accomplished this by designating roads as open, closed, or limited to motorized and mechanical uses in sensitive areas, as well as through the interim route network until the Baker FO develops a TMP to more specifically address routes and appropriate route uses in the areas identified as limited. Travel management designations change with the emphasis of the alternative in regards to their location, area, and size. For this alternative, those designations are as follows:

- Land Use Allocations: Under Alternative 5, the BLM would designate the Virtue Flat OHV Play Area, consisting of 4,918 acres (1 percent of the Decision Area), as open to OHV use. Congressionally mandated areas (wilderness, wild sections of WSRs, and WSAs); French Gulch; Oregon Trail; Joseph Creek, Keating Riparian (Sawmill Creek), Hunt Mountain, and Grande Ronde ACECs; and areas with no legal public access, consisting of 83,214 acres (19 percent of the Decision Area), would be closed to motorized vehicle use. The BLM would close wilderness and "wild" sections of WSRs to mechanized vehicle use. Vehicle travel in all remaining areas, consisting of 340,293 acres (80 percent of the Decision Area), would be limited to the interim route network.

Development (Including Energy) Exclusion and Avoidance Areas: The BLM would provide for land use authorizations while protecting public safety and conserving and protecting natural resources. The BLM would accomplish the latter by excluding all land use authorizations including energy and non-energy related ROWs, communication site leases, and other permits (unless they already exist) in certain areas. In other areas, the BLM may not authorize such actions unless impacts to the affected resources can be avoided or mitigated to eliminate or substantially reduce impacts.

- Land Use Allocations: Under Alternative 5, the BLM would identify 104,982 acres as exclusion areas, which would include wilderness areas, WSAs, designated and suitable WSR corridors, all existing and proposed ACECs (not including NHOTIC administrative site uses), and lands with wilderness characteristics. The BLM would designate a 5-mile exclusion area for wind development around all sage-grouse leks, totaling an additional 141,973. In addition, the BLM would identify 3,961 acres as avoidance areas, which would include special status species habitat (plants), cultural sites, NHOTIC Scenic Viewshed, relic sites, and Coyote Peak.

Withdrawals (Mineral Areas): The BLM would ensure the appropriateness of existing withdrawals and pursue new withdrawals that meet federal land-use objectives.

- Land Use Allocations: Congressionally withdrawn areas (wild sections of WSRs, wilderness, and NHOTIC) totaling 3,602 acres would remain withdrawn from mineral entry, subject to valid existing claims. The BLM would pursue withdrawal of public lands from mineral entry for WSAs, Auburn and Amelia town sites, all ACECs, relic sites, and lands with wilderness characteristics, totaling 95,504, acres. Altogether, withdrawn areas and areas pursued for withdrawal would total 99,729 acres under Alternative 5.

6. ALTERNATIVE 5a

Alternative 5a is a sub-alternative of Alternative 5 that incorporates the same management actions as Alternative 5, except that the BLM would permit no domestic livestock grazing throughout the life of this RMP. Alternative 5a includes the following key management action:

Available Areas for Livestock Grazing: The BLM would permit no livestock grazing within the Decision Area and close all allotments that are currently available to grazing when current permits expire.

All other management objectives, land use allocations, and management actions would be the same as those proposed under Alternative 5, with the exception of those that specifically relate to cattle grazing.

7. ALTERNATIVE SUMMARY

Table 2-2 provides a “quick look” summary of the differences between alternatives for several resources and resource uses.

Table 2-2. Alternative Summary Table						
Management Action	**No Action**	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5***
WATER RESOURCES						
Stream Restoration (miles)	N/A	50 miles/10 years	20 miles/10 years	40 miles/10 years	80 miles/10 years	80 miles/10 years
Riparian Management Area Widths						
RMA Classification	***Distance per Side***					
Perennial Fish-bearing	300 feet	300 feet	300 feet	300 feet	300 feet	300 feet
Perennial non-fish-bearing	150 feet	150 feet	100 feet	100 feet	200 feet	200 feet
Ponds, wetlands, lakes	150 feet	150 feet	50 feet	50 feet	150 feet	150 feet
Priority/non-priority intermittent (see Appendix 2.2 for the Aquatic and Riparian Management Strategy [ARMS] list of priority and non-priority watersheds)	100/50 feet	100/50 feet	50/25 feet	50/25 feet	150/75 feet	150/75 feet
VEGETATIVE RESOURCES						
Loss of Wyoming big sagebrush habitat	N/A	Reclaimed at a 1:2 ratio	Reclaimed at a 1:1 ratio	Reclaimed at a 1:2 ratio	Reclaimed at a 1:3 ratio	Reclaimed at a 1:3 ratio
Minimum riparian stubble height (inches)	N/A	3-4 (stable streams) 6-8 (vulnerable streams)	2-3 (stable streams) 3-4 (vulnerable streams)	2-3 (stable streams) 3-4 (moderate) 6-8 (vulnerable)	6-8 (all streams)	6-8 (all streams) No grazing on all 303(d) streams
Minimum stream length on public lands for stubble height target	N/A	¼ mile	1 mile	½ mile	1/8 mile	1/8 mile
Range Improvements: Acres of non-native annual grass monocultures seeded over 20 years	N/A	1,500- 2,000 acres with native species. Desirable non-native perennial grasses may be used if the site is reseeded later with native species.	1,500 acres with desirable non-native perennial grass, may reseed later with native species	1,000 acres with desirable non-native perennial grass, may reseed later with native species	1,500- 3,000 acres with native species	1,500 – 3,000 acres with native species, using only non-ground disturbing seeding methods
Decadal juniper reductions	N/A	5,000-20,000 acres	Not applicable, unless determined that there is an	5,000-20,000 acres	15,000-30,000 acres	Limited to riparian and Wyoming big sagebrush areas

Table 2-2. Alternative Summary Table

Management Action	No Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5*
			economic benefit to be realized.			(3,000-6,000 acres)
SPECIAL STATUS SPECIES (WILDLIFE)						
ROW exclusion of identified key sage-grouse habitat	N/A	41,563 acres key sage-grouse habitat	2,396 acres key sage-grouse habitat	13,295 acres key sage-grouse habitat	45,482 acres key sage-grouse habitat, all ROWs, plus 42,343 acres precluded from wind development only	51,026 acres key sage-grouse habitat, all ROWs, plus 114,738 acres precluded from wind development only
Wind development avoidance buffers for sage-grouse	N/A	Virtue Flat ACEC would be an exclusion area; a 3-mile avoidance area would be placed around all other leks.	2-mile for occupied leks	3-mile for occupied leks	5-mile within/ adjacent to Virtue Flat and Denny Flat ACECs exclusion; a 3-mile avoidance area would be placed around all other occupied leks.	Avoidance buffers not necessary due to extensiveness of exclusion areas.
VISUAL RESOURCES						
Visual Resource Management (VRM) Class I **	17,918 acres: 4%	18,543 acres: 4%	17,918 acres: 4%	18,543 acres: 4%	18,543 acres: 4%	18,543 acres: 4%
VRM Class II	144,215 acres: 33%	241,779acres: 56%	109,096 acres: 25%	247,375 acres: 58%	247,495 acres: 58%	247,495 acres: 58%
VRM Class III	57,354 acres: 13%	142,544 acres: 33%	220,674 acres: 52%	136,946 acres: 32%	159,687 acres: 37%	159,687 acres: 37%
VRM Class IV	208,705 acres: 49%	25,558 acres: 6%	80,738 acres: 19%	25,560 acres: 6%	2,588 acres: 1%	2,588 acres: 1%
LANDS WITH WILDERNESS CHARACTERISTICS						
Acres managed to protect wilderness characteristics	N/A	13,223 acres	0 acres	13,223 acres	13,223 acres	13,223 acres
FORESTRY AND WOODLAND PRODUCTS						
Treatment acres		5,000 acres	5,000 acres	5,000 acres	7,500 acres	2,500 acres
Proposed Sale Quantity (PSQ) per year	24,000 thousand-board feet (MBF)	500 - 1,000 MBF	1,000 - 2,500 MBF	500 - 1,000 MBF	500 -1,250 MBF	0 MBF
LIVESTOCK GRAZING						
Acres available for grazing	418,601 acres	388,310 acres	396,210 acres	380,165 acres	334,260 acres	Alt. 5: 263,915 acres Alt. 5a: 0 acres

Table 2-2. Alternative Summary Table

Management Action	No Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5*
Acres unavailable for grazing	9,824acres	40,115 acres	32,215 acres	48,260 acres	94,165 acres	Alt. 5: 164,510 acres Alt. 5a: 428,425 acres
AUMs	55,437	47,000 initially 41,500 ultimately	47,000 initially 47,350 ultimately	46,320 initially 35,500 ultimately	42,150 initially 30,700 ultimately	Alt. 5: 35,760 initially 22,500 ultimately Alt. 5a: 0
TRANSPORTATION						
Open to OHV use	287,611 acres/67%	4,918 acres/1%	22,074 acres/5%	22,074 acres/5%	4,918 acres/1%	4,918 acres/1%
Limited to interim route network	138,042 acres/32%	340,293 acres /79%	367,242 acres/84%	331,177 acres/77%	298,992 acres/68%	340,293 acres/79%
Closed to motorized use	3,594 acres/1%	83,214 acres/19%	39,109 acres/9%	75,174 acres/18%	124,515 acres/31%	83,214 acres/19%
LANDS AND REALTY						
ROW Exclusion Areas (all types)	25,236 acres	72,618 acres	25,236 acres	40,500 acres	81,152 acres/Wind Only Exclusion 44,328 acres	104,982 acres/ Wind Only Exclusion 141,973 acres
Avoidance Areas	N/A	32,299 acres	25,725 acres	35,170 acres	153,941 acres	3,961 acres
Pursue mineral withdrawal	398 acres	20,096 acres	N/A	6,041 acres	20,096 acres	95,504 acres
AREAS OF CRITICAL ENVIRONMENTAL CONCERN						
Number/Acres of ACECs	10 existing 40,245 acres	8 existing/4 new 83,756 acres	7 existing 34,419 acres	10 existing/2 new 47,992 acres	10 existing/4 new 93,991 acres	10 existing/4 new 93,991 acres

*Management actions and land use allocations under the sub-alternative (Alternative 5a) are the same as under Alternative 5, except that there would be no grazing and no grazing-related management actions/allocations.
** Percentages are similar based on rounding error.

C. ACTION ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

In addition to the five action alternatives and one sub-alternative analyzed during the planning process, the Baker FO considered an additional alternative, as well as an additional management action/land use allocation, but eliminated them from detailed analysis. The considered alternative emphasized the protection of intact native communities and habitats, including the restoration of native communities and habitats at risk through natural processes and low impact management activities. Although the emphasis of this alternative appeared to be consistent with the purpose and need of this planning process, the planning team later acknowledged that the associated management actions were not adequate to meet the purpose and need. While the alternative considered focused on the preservation of native resources, it would rely heavily on natural processes and other "light on the land" management techniques to bring such resources back to natural conditions, which would restrict the tools needed to meet the goals of the alternative. For instance, this alternative would have prohibited surface disturbing activities and chemical use in the control the spread of noxious weeds. Since the vegetative communities in much of the Decision Area have converted or are in the process of converting into non-native plant communities, such limits placed on available management tools would preclude the BLM's ability to maintain desired resource conditions or to reverse undesirable trends. In addition, the alternative considered would place excessive limits on commodity uses, which is incompatible with the need to manage public lands for multiple uses. The alternative was eventually dropped because the RMP planning team determined it to be ineffective (i.e., it would not respond to the purpose and need), technically infeasible, and inconsistent with the basic policy objectives for the management of public lands.

The management action/land use allocation considered by the planning team involved eliminating OHV use in the Virtue Flat OHV Play Area to expand protection of key greater sage-grouse habitat in the Virtue Flat ACEC. Removing the OHV play area would extend the Virtue Flat ACEC boundary into other key sage-grouse habitat. Thus, as a potential alternative, the team examined providing open OHV travel in other parts of the Decision Area; however, the other sites that were determined physically feasible also included special status species habitat, including sage-grouse habitat. The Virtue Flat OHV Play Area has been an established off-road use area since the early 1980s and is in close proximity to Baker City, so it lends itself to public use. In addition, due to its proximity to Baker City, use and compliance is well monitored. When considering that part of the purpose and need for this RMP revision is to provide various forms of outdoor recreational opportunities, including opportunities for OHV use, the Baker FO determined that the Virtue Flat OHV Play Area was the most logical choice to provide such opportunities while limiting adverse resource impacts.

D. RESOURCE MANAGEMENT PROGRAMS NOT ADDRESSED BY ALTERNATIVES

Wild horses and burros are not addressed in this Draft RMP/EIS because there are no wild horses and burros in the Decision Area. Two resources (paleontological and cave and karst resources) and two special designations (backcountry byways and wilderness areas) that are present in the Decision Area are not addressed by alternative as there are no specific management actions to guide their management. Management will follow all laws, mandates, and policies related to these resources, which are briefly discussed below. In addition, national historic trails are not discussed under special designations. All sections of the Oregon Trail National Historic Trail in the Decision Area are located in the Oregon Trail ACEC and, as such, their management is addressed in the ACEC section. The Oregon Trail is also discussed in the cultural resources sections of Chapters 3 and 4.

1. PALEONTOLOGICAL RESOURCES

Paleontological resources are the physical remains or other physical evidence of past plants and animals generally preserved in soils and sedimentary rock formations. Paleontological resources are important for correlating and dating rock strata and for understanding past environments, environmental change, and the evolution of life.

Within the Planning Area, paleontological resources are documented in two main "localities": Durkee and Unity basins. While 24 smaller localities are documented within these basins, the occurrence of paleontological resources in the Planning Area is not nearly as extensive as compared to neighboring districts. For this reason, the BLM does not propose special management outside of compliance with existing laws, regulations, and mandates for paleontological resources within the Decision Area (See Appendix 1.1). If additional localities are identified or especially rare and important resources are documented, the BLM would develop a specific management plan.

Under all alternatives, the BLM would manage paleontological resources that occur on public lands in accordance with the requirements of several federal laws (primarily the Federal Land Policy Management Act [FLPMA]) and a series of federal regulations, orders, policies, as well as by specific BLM manual guidance. Bureau of Land Management Handbook H-8270-1 and Manual Section 8270 describe policy, objectives, and when necessary, mitigation measures, as well as a classification system that ranks areas into classes based on their potential to contain vertebrate fossils or exceptional invertebrate or plant fossils. The Baker FO will comply with all current laws and guidance provided by the handbook and manual. The preferred method for protection from project implementation would be avoidance, project redesign, and, when necessary, other types of mitigation such as fencing. Under all alternatives, the BLM would mitigate all impacts and monitor known localities for impacts on an annual schedule.

2. CAVES AND KARSTS

The Federal Cave Resources Protection Act of 1988 requires agencies to identify and manage, to the extent practical, cave resources determined to be significant. Procedures for determining the significance of caves are found at 43 CFR Part 37. A cave is significant if it possesses biotic, cultural, geologic/mineralogical, hydrologic, recreational, educational, or scientific values, features, or characteristics. The Act defines a cave as any naturally occurring void, cavity, recess, or system of interconnected passages beneath the surface of the earth or within a cliff or ledge, including any cave resource therein, that is large enough to permit a person to enter, whether the entrance is excavated or naturally formed. Rock shelters formed by an overhang or cliffs are not considered caves.

The listing of significant caves is an inventory process and does not imply specific protection commitments. Until caves are determined significant and management plans are prepared to provide specific management prescriptions, the BLM would manage caves in accordance with the BLM's Oregon and Washington Interim Cave Management Policy. The policy provides protective management of all caves resource values, with required procedures for authorizing certain uses and restrictions or prohibitions on specific human activities in caves until a management plan is developed for an individual or system of significant caves. The BLM would seek public input as management plans for significant caves are developed. While caves and karsts are not addressed further in this chapter or impacts on them analyzed in Chapter 4, they are described in more detail in Chapter 3.

3. BACKCOUNTRY BYWAYS

Only one backcountry byway exists within the Planning Area. The Snake River/Mormon Basin Backcountry Byway originates at Baker City, Oregon and travels northeast toward Richland Oregon, then south towards Huntington, Oregon, then southwest through Mormon Basin, and finally north over Dooley Mountain back to Baker City. This Byway is 150.25 miles in length with various road jurisdictions (e.g., county, state, and city) of Type I and Type II roads. Management of the byway will continue across all alternatives and is not addressed further in this chapter, nor are they analyzed in Chapter 4. The byway is described in more detail in Chapter 3.

4. WILDERNESS AREAS

In 1984, Congress designated 968 acres of the McGraw Creek WSA as a wilderness area. In 1985, the BLM transferred management of this section of wilderness to the Wallowa-Whitman National Forest for inclusion into their Hells Canyon Wilderness (Interagency Agreement #85-06-55-14 OR 326) to facilitate efficiency of management with the ultimate goal of transfer of jurisdiction to the Secretary of Agriculture for the best public interest. Under this agreement, the BLM has full responsibilities for range management within the wilderness area, while the U.S. Forest Service (USFS) carries the majority of the shared responsibilities for mineral, fire, recreation, and use supervision management. This interim direction for the planning and

management of these lands will continue unless both agencies determine that the abolishment of the interagency agreement is in the best interest of the resources or public use of the area, or the land identified is transferred to the U.S. Department of Agriculture (USDA). No change is expected or has been requested by either agency to dissolve this agreement. Therefore, the current cooperative management of the McGraw Wilderness will continue over the life of the revised Baker RMP.

5. NATIONAL HISTORIC TRAILS

In 1984, Congress designated the Oregon Trail as a National Historic Trail. Nine miles of the Oregon Trail pass through the Decision Area, while eight miles of the trail that crosses over public lands are located within the Oregon Trail ACEC. Due to protections provided in the Oregon Trail ACEC, the sections of the Oregon Trail National Historic Trail that cross through public lands have remained in good condition. However, although not a high use area except for NHOTIC, the BLM expects use of the more dispersed sites to increase in future years due to public demand to experience these unique sites, which will put added pressure on this resource. See sections B.12, Cultural Resources, and D.1, ACECs, in Chapters 3 and 4 for more details on the current condition of the Oregon Trail segments through the Decision Area and potential impacts due to implementing the alternatives presented in this chapter.

It is reasonable and foreseeable that additional trail segments within the Planning Area could be designated into the National Historic Trail system in the future. The Goodale's Cutoff is located within the Planning Area and is currently under review by the National Park Service for inclusion into the National Historic Trail system. However, the final determination for this trail is not expected to occur until after the completion of this RMP.

E. ACTION ALTERNATIVES DECISION TABLES

Management goals and objectives, land use allocations, and management actions proposed under each alternative for the Baker Draft RMP are presented in the following alternative decision tables. The figures at the end of this chapter summarize the impacts from these decisions. These tables represent resource programs that address the management of resources, resource uses, and special designations on public lands within the Baker Planning Area, and are arranged as follows:

Table 2-3. Climate Change
Table 2-4. Air Quality
Table 2-5. Water Resources
Table 2-6. Soil Resources
Table 2-7. Vegetative Communities
Table 2-8. Invasive Species
Table 2-9. Fisheries
Table 2-10. Wildlife

Table 2-11. Special Status Species
Table 2-12. Fire and Fuels Management
Table 2-13: Cultural Resources and Resources of Importance to Native American Tribes
Table 2-14. Visual Resources
Table 2-15 Lands with Wilderness Characteristics
Table 2-16. Facilities
Table 2-17: Forestry and Woodland Products
Table 2-19. Livestock Grazing
Table 2-21. Minerals
Table 2-22. Recreation
Table 2-23. Travel and Transportation
Table 2-24. Lands and Realty
Table 2-25. Areas of Critical Environmental Concern (Existing)
Table 2-26. Areas of Critical Environmental Concern (Proposed)
Table 2-27. Wild And Scenic Rivers
Table 2-28. Wilderness Study Areas
Table 2-29. Public Safety

The alternative decision tables are divided into six columns representing the No Action Alternative and the five action alternatives. The sub alternative, Alternative 5a, is essentially the same as Alternative 5, except with regard to those decisions that involve cattle grazing. Such instances are clearly indicated in the Alternative 5 column.

Decisions common to all alternatives transcend the column boundaries, while decisions that vary by alternative are confined to their appropriate cell. Decisions that are common to two, three, or four alternatives also transcend column boundaries. Some of the tables are missing the column for the No Action Alternative. This is due to resource management programs being relatively new and thus was not addressed in the current Baker RMP (BLM 1989), such as climate change and wilderness characteristics.

Area and length figures referenced throughout this document are based on the best available Geographic Information System (GIS) data at the time of publication. These figures are based on the Universal Transverse Mercator Zone 11 projection referencing the North American Datum of 1983. Analysis and calculation have been made on various GIS layers, which may or may not correspond to each other. Differences in area or length correlations between the various calculations in this document are due to minor discrepancies between GIS layers.

Table 2-3. Climate Change					
*	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Goal 1	Consider and factor into all major resource management decisions the long-term effects that climate change may have on the resources involved. Use the best available information regarding predictions/scenarios for climate change on the affected environment.				
Goal 2	Consider how proposed management actions may contribute to climate change through greenhouse gas emissions (carbon dioxide [CO_2] and methane in particular) and carbon storage potential. Especially consider the effects from (1) grazing: methane emissions and carbon storage, (2) fire: various greenhouse gas emissions from wild fire and prescribed fire, and (3) forestry: CO_2 emissions and carbon storage. Reduce or minimize emissions when possible.				
Obj. 1	Use adaptive management in all resource programs to adjust to changes expected to occur over time due to climate change when information becomes available.				
Obj. 2	Create awareness of climate change and its potential impacts to the management of local resources.				
Obj. 3	Propose actions that would reduce greenhouse gas emissions and increase carbon storage consistent with other resource objectives such as prescribed fire to reduce the risk of more intense wildfires and longer rotations for commercial timber harvests.				
Management Actions					
MA 1	The BLM would use prescribed fire and other vegetation treatment projects such as reseeding and juniper control to increase resistance and resilience to changing precipitation patterns and temperatures or other natural disturbances.				
MA 2	To compensate for modified precipitation patterns and other changes to climate over the coming decades, the BLM would utilize existing and new tools such as seeds and seed stock that are adapted for a dryer or changed climate and increased culvert diameters to accommodate for increased peak flow events.				
See Invasive Species: Invasive Plants and Noxious Weeds MA 3 for addressing invasive plant species using Early Detection-Rapid Response (EDRR)					
Monitoring					
Mon. 1	The BLM would monitor management actions to determine whether goals and objectives are being met to incorporate climate change and carbon flux considerations in all major activity planning and project development. Monitoring data including temperature and precipitation records, project photo points, and trend information would be maintained and used to evaluate progress towards achieving climate change management objectives.				
**The No Action Alternative proposes no management direction for climate change.*					

Table 2-4. Air Quality						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	N/A	Manage uses to maintain and improve air quality to meet federal and state ambient air quality standards.				
Obj. 1	N/A	Maintain and/or improve air quality to meet all local, state, and federal air quality standards.				
Management Actions						
MA 1	The BLM will manage all public lands as Class II unless they are reclassified (by the Environmental Protection Agency [EPA]) under provisions of the Clean Air Act (as amended, 1977).					
MA 2	All District prescribed fire activities will comply with Oregon State Implementation Plan of the Clean Air Act and the EPA's Interim Air Quality Policy on Wildland and Prescribed Fires. Prescribed fire plans need to identify sensitive areas and provide operational guidance to minimize impact from smoke. Burn registration and smoke emissions from prescribed fire activities are entered in the Fuel Analysis, Smoke Tracking, and Report Access Computer System. Information is transmitted to Oregon State Department of Forestry.	The BLM would comply with all local, state, and federal air quality regulations when implementing all projects. The BLM would avoid utilizing prescribed fire when weather conditions are likely to result in smoke entering adjacent areas that are designated non-attainment or air quality maintenance areas for particulates or ozone.				
MA 3	Wildland fire managers must consider the effects	The BLM would avoid burning during high visitor use periods to maintain visibility and protect human health and safety when possible. (Examples of predictable high-use days include three-day weekends, holidays, and hunting season openings.)				

Table 2-4. Air Quality						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	of their actions on visibility in critical areas including Class 1 airsheds, restricted areas, and non-attainment areas.					
Monitoring						
Mon. 1	N/A	During project development, the BLM would conduct pre-burn assessment to determine estimates of fuel loading to predict probable smoke emissions, utilize onsite or regional air quality monitoring equipment, visually observe smoke dispersal, and complete field review following completion of project to determine effectiveness of meeting air quality objective. The BLM would document results of the monitoring.				

Table 2-5. Water Resources						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	N/A	Maintain or improve surface and ground water quality and quantity to meet state defined beneficial uses.				
Obj. 1	N/A	Comply with all state and federal requirements to protect public waters.				
Management Actions						
MA 1	Comply with EPA and Department of Environmental Quality requirements on water quality monitoring and non-point source pollution reductions as those regulations become established.	The BLM would validate the 303(d) listing of water bodies on public lands.				
MA 2	N/A	The BLM would work with state agencies and local tribes to set priorities and timelines for addressing listed water bodies.				
MA 3	Coordinate water concerns and activities with other resources in all phases of management actions, from the planning stage to final monitoring of the results. Review all proposed resource projects, and surface disturbing activities to ensure that soils and watersheds are protected, rehabilitated, or improved.	The BLM would assess management activities for their effects on water quality at a project-specific scale. The BLM would implement BMPs and SOPs to protect water quality and meet water quality standards (see Appendix 2.1).				
MA 4	N/A	In areas with impaired water quality (i.e., not meeting state defined beneficial uses), the BLM could allow projects to occur only if they improve or do not further degrade water quality in the long-term.				
MA 5	Develop watershed management plans for areas identified as having potential for	The BLM would prioritize development of Water Quality Restoration Plans (WQRPs) in areas with completed TMDLs. The BLM may develop their WQRPs before the state identifies TMDLs when public lands have been determined to contribute to impaired waters (i.e., those on the 303 [d] lists).				

Table 2-5. Water Resources						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	either significant improvement or further degradation. Prepare watershed activity plans for integration into coordinated planning for GUs.					
Goal 2	N/A	Protect or restore watershed function and processes.				
Obj. 2	N/A	Stabilize watersheds and provide for capture, storage, and safe release of water appropriate to soil type, climate, and landform.				
Obj. 3	N/A	Meet Rangeland Standards and Guides in uplands and riparian areas.				
Management Actions						
See Livestock Grazing MA 13 for changes in grazing systems when Rangeland Standards and Guides are not met.						
MA 6	N/A	When analyzing roads for the TMP, the BLM would prioritize roads within watersheds with sediment-listed streams for removal for purposes of reducing road/stream connectivity. The BLM would remove roads within RMAs unneeded for resource management to reduce road density within riparian areas. Where roads are needed within RMAs and are known to contribute sediment to streams, the BLM would remove or mitigate the stream-road connection.	When analyzing roads for the TMP, the BLM would prioritize roads in areas of commodities production for improvements. The BLM would focus on upgrading roads within RMAs needed for commodity production and removing the stream-road connectivity. The BLM would identify, decommission, or reroute roads within RMAs not needed for commodity production or other resource uses.	When analyzing roads for the TMP, the BLM would prioritize roads in recreation areas with a focus on improving roads within RMAs. Road within RMAs contributing to sedimentation would be evaluated to determine where changes are needed to remove the stream-road connection or mitigate.	Same as Alternative 1	
Goal 3	N/A	Maintain water quality for domestic water supplies.				
Obj. 4	N/A	Ensure that projects comply with all federal, state, and county requirements to protect public waters.				

Table 2-5. Water Resources						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Management Actions						
MA 7	N/A	The BLM would identify all public drinking water sources downstream of public lands during project planning. To avoid impact to public water sources, BMPs (see Appendix 2.2) would be site specifically designed during project planning.				
Goal 4	N/A	Maintain or improve riparian and wetland areas to improve water quality and support aquatic resources.				
Obj. 5	N/A	Improve or maintain water quality and riparian health over the life of the RMP by promoting activities that: Move towards a more natural sediment regime and improve bank stability Retain or encourage adequate growth of woody vegetation to attain site potential shade Increase vigor of riparian vegetation of multiple age classes where appropriate				
Management Actions						
MA 8	Exclude livestock grazing along identified stream segments, bogs, and spring overflows where use is incompatible with riparian management.	The BLM would mitigate livestock impacts to stream segments, bogs, and spring overflows through management actions such as changing season of use and changing stocking rates. Where livestock grazing is found to be inconsistent with resource objectives, the BLM would exclude livestock. *See Livestock Grazing MA 9 for changes in grazing systems when Rangeland Standards and Guides are not met. See Riparian Vegetation Communities MAs 9, 10, and 11 for more details on riparian vegetation management.*				
MA 9	Restrict livestock grazing in riparian habitat in poor or fair condition through season of use, utilization levels, and livestock numbers. Restore or maintain riparian habitat through modification of grazing system.	The BLM would improve riparian conditions through a variety of ways depending on site-specific analysis, including through (1) riparian restoration (e.g., planting, seedings, re-contouring, and control of undesirable vegetation); (2) modifying land uses (e.g., livestock grazing, vehicle use, and recreation use) that are identified as causal factors for the degradation; and (3) implementation of the ARMS. If conditions do not improve in an acceptable timeframe, the BLM would use more aggressive changes in management or restoration methods. (Also, see Table 2-7. Vegetative Communities, Table 2-9. Fisheries, and Table 2-10. Wildlife).				
See Vegetative Communities MA 10 for riparian surveys and monitoring stipulations.						

Table 2-5. Water Resources

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Land Use Allocations						
LUA 1	The BLM would use the criteria listed in the table below to establish RMAs for stream and wetlands by alternative.					

		*No Action	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
RMA classification		distance per side (feet)	distance per side (feet)	distance per side (feet)	distance per side (feet)	distance per side (feet)	distance per side (feet)
Per. Fish-bearing	Category 1	300	300	300	300	300	300
Per. non-fish-bearing	Category 2	150	150	100	100	200	200
Ponds, wetlands, lakes	Category 3	150	150	50	50	150	150
Intermittent	Category 4	**100/50	**100/50	**50/25	**50/25	**150/75	**150/75

*Utilizes existing PACFISH/INFISH riparian habitat conservation area buffers.
**Priority watersheds/ non-priority watersheds- see Appendix 2.2 for ARMS list of priority and non-priority watersheds.

Management Actions						
MA 10	N/A	The BLM would ensure that management actions within RMAs would be in accordance with ARMS (see Appendix 2.2).				
MA 11	N/A	The BLM would conduct approximately 50 miles of stream restoration work every ten years to improve water quality limited streams, riparian condition, and aquatic habitat. The emphasis would be on increasing woody vegetation, where appropriate, and would include a large component of instream work.	The BLM would conduct approximately 20 miles of stream restoration work every ten years to improve water quality limited streams with an emphasis on improving stream function affected by high commodity use.	The BLM would conduct approximately 40 miles of stream restoration work every ten years with an emphasis on restoring recreational fisheries. This would include improving fish habitat as well as reducing the impacts of heavy recreation use.	Same as Alternative 1, except that the BLM would restore 80 miles of stream every ten years.	Same as Alternative 4, except that the BLM would place less emphasis on aggressive instream work.
MA 12	N/A	In addition to using restoration and conservation watersheds (see Appendix 2.2) to prioritize restoration, the BLM would emphasize restoration where (1) projects have been identified in WQRPs, (2) restoration provides benefits for multiple resources, and (3) other agencies, tribes, or private landowners have planned, ongoing, or completed projects within the same 6th field watershed.				

Table 2-5. Water Resources						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 13	N/A	The BLM would pursue restoration opportunities for impaired floodplains including removal of nonessential structures that adversely affect function of these areas.				
MA 14	N/A	The BLM would treat invasive vegetation within riparian areas and plant with native or desirable non-native vegetation if an adequate on-site seed source were not available.				Same as Alternative 1, except that the BLM would only plant native vegetation.
Monitoring						
Mon. 1	N/A	The BLM would develop and continue to support bureau and joint agency efforts to monitor water quality parameters.				
Mon. 2	N/A	The BLM would evaluate improvements in vegetation (streambank stability) and channel width to depth ratios on channels where changes in management have occurred to improve stream and riparian function.				
Mon. 3	N/A	The BLM would continue to participate in PACFISH Effectiveness Monitoring, if it is continued at the regional scale.				
Mon. 4	N/A	The BLM would conduct multiple indicator monitoring (MIM) on selected sites in conjunction with grazing management in riparian areas. (See vegetation monitoring in Table 2-7.)				
Mon. 5	N/A	The BLM would continue to inventory streams and riparian areas using proper functioning Condition (PFC) protocol.				
Mon. 6	N/A	The BLM would monitor riparian restoration areas for a minimum of three years after restoration is completed and make changes as needed to increase effectiveness of restoration efforts.				
Mon. 7	N/A	The BLM would monitor the implementation and effectiveness of BMPs used to protect soil and water for land disturbing activities on at least 10 percent (minimum of three sites) per year where activities occur. If BMPs were not effective, the BLM would modify actions and monitor further.				
Mon. 8	N/A	In TMDL areas, the BLM would conduct monitoring according to WQRPs, assessing the effect of its management actions to meet TMDL targets.				

Table 2-6. Soil Resources						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	Soils will be managed to maintain productivity and minimize erosion.	Maintain or improve soil health and productivity to sustain ecosystem/landscape health.				
Obj. 1	N/A	Maintain or improve the erosion/sedimentation regime appropriate to natural processes on a landscape scale.				
Obj. 2	N/A	Achieve proper soil functioning condition or an upward trend in soil condition across the Decision Area.				
Management Actions						
MA 1	Continue to inventory and evaluate soil resources on public lands.	The BLM would design projects that avoid or minimize adverse impacts to soils, particularly sensitive soils, keeping detrimental disturbance in a project area under 12 percent. Management related erosion would be stabilized. Soil assessments would occur at the project level to determine site-specific issues and appropriate BMPs (see Appendix 2.1).				
MA 2	N/A	All existing facilities, roads, and trails would require proper drainage and erosion control.				
MA 3	Those watersheds or portions of watersheds where potential for either significant improvement or further degradation exists will be intensively managed to improve the soil, water, and air resources. Priority will be given to meeting emergency watershed needs due to flooding, drought, or fire.	The BLM would improve ecosystem functions by applying appropriate erosion control measures, such as seeding with native or desirable non-native plants and lopping and scattering cut vegetation in order to add extra cover for bare, erosion-prone soils.				Same as Alternative 1, except that the BLM would only use native seed.
Hydric Soils and Biological Crusts						
Goal 2	N/A	Protect unique soils such as hydric soils and soils that support rare or desirable biological crusts.				
Obj. 3	N/A	Identify and protect hydric soils and soils that support rare or desirable biological crusts				
Management Actions						
MA 4	N/A	The BLM would identify and protect hydric soils and biological crusts at the project level.				
MA5	N/A	In sites that have intact biological crusts providing soil stability, the BLM would set light to moderate livestock	N/A	Same as Alternative 1	In sites that have intact biological crusts providing soil stability, the BLM would set light livestock stocking rates	**Alternative 5:** Same as Alternative 4 **Alternative 5a:** N/A

Table 2-6. Soil Resources

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		stocking rates and allow summer grazing no more than once every three years. The BLM would not allow high intensity, short-duration livestock grazing systems if such sites would be heavily grazed.			and not allow summer grazing The BLM would not allow high intensity, short-duration livestock grazing systems if such sites would be heavily grazed.	
MA 6	N/A	The BLM would restrict salt and water developments to at least 500 feet away from well functioning intact biological crusts.	N/A	Same as Alternative 1		**Alterative 5:** Same as Alternative 1 **Alternative 5a:** N/A
MA 7	Continue to provide for recreational ORV use in areas designated as open, only to the extent that maximum protection for soil and watershed is achieved through standard design features.	The BLM would not authorize OHV use in areas with hydric soils, well functioning intact biological crusts, and highly erosive soils.	The BLM would not allow OHV use in areas with hydric soils or highly erosive soils.		Same as Alternative 1	
MA 8	N/A	To assure biological crust recovery, the BLM would require adequate (minimum of 2 years) rest from livestock after wildfires in areas where biological crusts occur and are important for soil stability.	N/A	Same as Alternative 1		**Alterative 5:** Same as Alternative 1 **Alternative 5a:** N/A

Table 2-6. Soil Resources						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 9	N/A	Where functioning communities of biotic crusts occur, the BLM would require an analysis of impacts to biotic crusts, as well as apply appropriate stipulations to minimize impacts on all land use applications such as ROWs, oil, gas, and other exploration permits, and permits to drill.	N/A	Same as Alternative 1		
Monitoring						
Mon. 1	N/A	The BLM would monitor the implementation and effectiveness of BMPs used to protect soil and water for land disturbing activities on at least 10 percent (minimum of three sites) per year where activities occur. If BMPs were not effective, the BLM would modify actions and monitor further.				
Mon. 2	N/A	The BLM would monitor new types of treatment methods to develop effective BMPs.				

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	N/A	Improve, restore, or maintain the biological diversity, distribution, connectivity, and structure of desirable vegetation communities (i.e., both native species and desirable introduced plant species). Provide for continued existence and function in the nutrient and energy cycles.				
Goal 2	N/A	Maintain or enhance vegetative connectivity in areas of large blocks of public lands or where public lands are adjacent to other federally, tribal, or state managed lands.				
Vegetation-Wyoming Big Sagebrush Communities						
Obj. 1	N/A	Maintain or improve rangeland health within the native Wyoming big sagebrush plant communities.				
Management Actions						
MA 1	N/A	Where appropriate, the BLM would construct firebreaks between non-native annual grass and native Wyoming big sagebrush vegetative communities to reduce the spread of non-native annual grass communities. Firebreaks may include green striping, mowing, herbicide, or constructing a fire line.				
MA 2	Manage upland grass-shrub vegetation to achieve a late-seral plant community in the Grande Ronde GU. Manage upland grass-shrub vegetation to achieve climax stage plant community in the Hunt Mountain GU. Manage upland grass-shrub vegetation to achieve a mid-seral plant community in all other GU.	The BLM would manage Wyoming big sagebrush canopy cover with an emphasis on enhancing sagebrush obligate wildlife habitat and ecosystem function.	In areas where native grass production is lower than the range identified by the NRCS and sagebrush canopy cover is greater than 20%, BLM would reduce Wyoming big sagebrush cover to improve perennial understory vegetation production while maintaining or enhancing landscape-scale sagebrush obligate wildlife species habitat. .	Same as Alternative 1		The BLM would use natural processes as the primary tool to manage Wyoming big sagebrush communities.
MA 3	Upland forage utilization is set at 50 percent.	The BLM would set upland forage utilization targets based on the grazing system, key plant growth stage, biotic crusts, and	Same as No Action	Same as Alternative 1	Upland forage utilization targets would be set for light use (21-40%).	

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		wildlife habitat (see Appendix 2.3).				
MA 4	N/A	The BLM would reclaim the loss of Wyoming big sagebrush habitat due to authorized BLM actions at a ratio of 1:2 for ROWs, leases, energy, and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain mahogany could be used in substitution of Wyoming big sagebrush at the same ratio (1:2).	The BLM would reclaim the loss of Wyoming big sagebrush habitat due to authorized BLM actions at a ratio of 1:1 for ROWs, leases, and energy and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain mahogany could be used in substitute of Wyoming big sagebrush at the same ratio (1:1). Restoration projects would be conducted in areas that would result in a net increase in livestock available forage.	Same as Alternative 1	The BLM would reclaim the loss of Wyoming big sagebrush habitat due to authorized BLM actions at a ratio of 1:3 for ROWs, leases, and energy and transmission line projects. Restoration of aspen, bitterbrush, willow, or mountain mahogany could be used in substitution of Wyoming big sagebrush, although reclamation would be reduced to a 1:2 ratio since the opportunity for resection of these plant community types is limited.	The BLM would reclaim loss of Wyoming big sagebrush habitat due to authorized BLM actions at a ratio of 1:3. Reclaimed areas would be reseeded only by aerial or broadcast methods. Aspen, bitterbrush, willow, or mountain mahogany could be used during reclamation efforts in substitution of Wyoming big sagebrush, although reclamation would be reduced to a 1:2 ratio since the opportunity for resection of these plant community types is limited.
MA 5	N/A	To increase or maintain vegetation connectivity, the BLM would reduce or maintain the current road density in native Wyoming big sagebrush communities.	The BLM would maintain or increase road density in Wyoming big sagebrush communities.	Same as Alternative 1	To increase vegetation connectivity, the BLM would reduce road density in native Wyoming big sagebrush communities.	
MA 6	N/A	The BLM would determine which plant species would receive priority for restoration in the Decision Area. If not commercially available, these species would be wildland collected, grown out, and increased to meet restoration needs.				
Vegetation-Mountain Big Sagebrush Communities						
Obj. 2	N/A	Maintain or improve rangeland health within the mountain big sagebrush plant community.				

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Management Actions						
MA 7	Manage upland grass-shrub vegetation to achieve a late-seral plant community in the Grande Ronde GU. Manage upland grass-shrub vegetation to achieve climax stage plant community in the Hunt Mountain GU. Manage upland grass-shrub vegetation to achieve a mid-seral plant community in all other GUs.	In mountain big sagebrush communities, the BLM would emphasize prescribed or wildland fire to maintain a landscape mosaic of sagebrush cover and grass and forb production consistent with the life histories of sagebrush-dependent wildlife species, ecosystem function, and livestock management goals.	In mountain big sagebrush communities, the BLM would emphasize prescribed or wildland fire to create a landscape where 50-70% of the land base has less than 20% sagebrush canopy cover to improve or increase forage for livestock grazing.	Same as Alternative 1, except that the BLM would reduce fuel continuity in high-use recreational areas.	Same as Alternative 1	
MA 8	On deferred rotation and rest rotation grazing systems on native range, a 60% utilization limit will be used and 65% on the wheatgrass seedings. On rotational or spring/fall systems, utilization will be 50% of annual forage production. A limit of 40% utilization will be used for continuous spring, spring/ summer, and season long grazing. The use objectives are designed to fit the benefits of the various	The BLM would set forage utilization targets based on the grazing system, key plant growth stage, biotic crusts, and wildlife habitat. (See Appendix 2.3).	Same as No Action	Same as Alternative 1	The BLM would set forage utilization targets for light use (21-40%).	

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	grazing systems while still maintaining and improving the vigor of the key species.					
Vegetation-Riparian and Wetland Communities						
Obj. 3	N/A	Improve degraded riparian and wetland vegetation relative to site potential.				
Management Actions						
MA 9	Restrict livestock grazing in riparian habitat in poor or fair condition through season of use, utilization levels, and livestock numbers. Restore or maintain riparian habitat through modification of grazing system.	The BLM would improve riparian conditions through (1) riparian restoration (e.g., planting, seedings, re-contouring, and control of undesirable vegetation); (2) modifying land uses (e.g., livestock grazing, vehicle use, recreation use) that are identified as causal factors for the degradation; and (3) implementation of the ARMS. (Also see Table 2-5. Water Resources, Table 2-9. Fisheries, and Table 2-10. Wildlife.)				
MA 10	Continue/Conduct riparian surveys on 240 miles of perennial streams. Existing and potential riparian habitat will be established or improved on these streams. The Oregon/Washington Riparian Enhancement Plan (1987) provides overall guidance and direction for management of riparian areas within the Planning Area.	The BLM would only apply riparian stubble height targets to streams that flow at least ¼-mile across public lands. The target for initial riparian stubble height would be set at 3-4 inches for stream banks that are dry and stable to moderately vulnerable to livestock impacts and 6-8 inches for those that are highly vulnerable to livestock impacts.	The BLM would only apply riparian stubble height targets to streams that flow at least 1-mile across public lands. The target for initial riparian stubble height would be set at 2-3 inches for stream banks that are dry and stable to moderately vulnerable to livestock impacts and 3-4 inches for those that are moderately to highly vulnerable to livestock impacts	The BLM would only apply riparian stubble height targets to streams that flow at least ½ -mile across public lands. The target for initial riparian stubble height would be set at 2-3 inches for stream banks that are dry and stable, 3-4 inches that are moderately vulnerable to livestock impacts, and 6-8 inches for those that are highly vulnerable to livestock impacts.	The BLM would only apply riparian stubble height targets to streams that flow at least $^{1}/_{8}$ -mile across public lands. The target stubble height would be set at 6-8 inches for all stream banks regardless of degree of vulnerability to livestock impacts	**Alternative 5:** Same as Alternative 4, except there would be no grazing on 303(d) listed streams **Alternative 5a:** Riparian stubble height would be not applicable since livestock grazing would be excluded on all allotments.

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 11	N/A	If streams or watersheds have gone through formal or informal Endangered Species Act (ESA) consultation, the BLM would set stubble height at the level identified in the biological opinion or letter of concurrence. Maximum browse would be tentatively set at 30 percent regardless of channel type or watershed, except where TMDL targets exist. Woody utilization levels would be set to attain site potential during the solar heating period.				
MA 12	N/A	In TMDL areas, the BLM would manage vegetation canopy cover to provide natural thermal potential through development and retention of shade in order to trend towards or meet TMDL targets. Along 303(d) temperature listed streams where shade is below potential, the BLM would manage to increase vegetation canopy cover.				
Bitterbrush						
Obj. 4	Improve quality and quantity of bitterbrush.					
Management Actions						
MA 13	Plant or seed vegetation on crucial winter ranges.	The BLM would emphasize planting bitterbrush within critical big game winter range.	The BLM would plant bitterbrush only if it does not reduce livestock AUMs.	The BLM would emphasize planting bitterbrush in areas that are easily assessable to the public for wildlife viewing and where such viewing would not cause additional stress on wintering wildlife.	The BLM would plant bitterbrush in areas that are capable of supporting bitterbrush (*See Wildlife MA 7*).	
Non-Native Annual Grass Communities						
Obj. 5	N/A	Manage non-native plant communities to increase soil stability and ecosystem function.				
Management Actions						
MA 14	N/A	Range improvement projects would include 1,500- 2,000 acres of new seedings where currently there are non-native annual grass monocultures. The BLM would reseed according to best available science on establishing native vegetation on annual	Range improvement projects would include 1,500 acres of new seedings where currently there are non-native annual grass monocultures. The BLM would reseed such areas with desirable non-native perennial grass or initially seed with non-native	Same as Alternative 2, except that the BLM would seed 1,000 acres and emphasize areas that improve recreational opportunities.	Same as Alternative 1, except that the BLM would seed 1,500-3,000 acres.	Same as Alternative 4, except that the BLM would only use light on the land seeding techniques (e.g., broadcast seeding and no-till drill seeding)

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		dominated sites The BLM would place the emphasis for restoration projects on increasing connectivity of native vegetation, improving special status species potential habitat, and improving or maintaining livestock production.	desirable perennial grass then re-seed with native species once the non-native perennial grass species become established. The BLM would place the emphasis for restoration projects on increasing livestock production while placing lesser emphasis on increasing habit for sagebrush-obligated species and improving habitat connectivity.			
MA 15	Restrict livestock grazing for 3-5 growing seasons on range rehabilitation project areas.	Following seeding projects, the BLM would rest the area from livestock grazing until site-specific rehabilitation objectives are achieved. If the seeding is a failure (i.e., native grass cover does not increase within two growing season or non-native grass cover increases after treatment), then livestock grazing would be used to reduce fine fuels. The minimum amount of time required to determine if a project was a failure (0-5 relative cover of seeded grass) would be one growing season.				
Obj. 6	N/A	Reduce the potential wildfire size in non-native annual grass communities while maintaining or improving riparian function and condition.				
Management Actions						
MA 16	N/A	The BLM would use livestock grazing in order to reduce fine fuels. The BLM would authorize grazing during native grass vegetative growth stage or after the native grass set seed. The BLM would not authorize hot season grazing in non-native annual grass communities.				
MA 17	N/A	Where appropriate, the BLM would create firebreaks between non-native annual grass communities and native Wyoming big sagebrush communities. Firebreaks may involve green stripping, mowing, herbicide, or constructing a fire line.				
MA 18	N/A	The BLM would employ fire suppression strategies that keep wildfire to the smallest possible size while considering other resources.				
Desirable Non-native Perennial Grass Seedings						
Obj. 7	N/A	Maintain or improve rangeland health within desirable non-native perennial vegetative communities.				

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Management Actions						
MA 19	N/A	In desirable, non-native perennial grass seedings, the BLM would emphasize on managing to increase sagebrush cover where sagebrush canopy cover is below the habitat requirements of sagebrush-dependent species.	The BLM would manage livestock in desirable non-native grass seedings to maximize the longevity and productivity of forage. The BLM would emphasize on striving to maintain or reduce current sagebrush cover.	The BLM would manage non-native grass seedings in high recreation use areas to reduce fuel continuity.	The BLM would reseed high to moderate site potential areas in desirable non-native grass seedings with native species. Following seeding projects, the area would be rested from livestock grazing until site-specific rehabilitation objectives are achieved. Once the objectives are achieved, the BLM would manage the area for light utilization levels and develop grazing systems that allows grazing a maximum of two out of three years during the critical growth stages.	In desirable non-native grass seedings, the BLM would allow natural processes to increase sagebrush cover in areas where sagebrush cover is below the habitat requirements of sagebrush dependent species.
MA 20	On deferred rotation and rest rotation grazing systems on native range, a 60% utilization limit will be used and 65% on the wheatgrass seedings. On rotational or spring/fall systems, utilization will be 50% of annual forage production. A 40	The BLM would set forage utilization targets based on the grazing system, key plant growth stage, biotic crusts, and wildlife habitat (See Appendix 2.3.).	Same as the No Action Alternative	Same as Alternative 1	**Alternative 5:** Forage utilization targets would be set for light use (21-40%). **Alternative 5a:** N/A	

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	percent utilization will be used for continuous spring, spring/ summer, and season long grazing. The use objectives are designed to fit the benefits of the various grazing systems while still maintaining and improving the vigor of the key species.					
Monitoring						
Mon. 1	Implement grazing systems that will provide for rest and rejuvenation of riparian vegetation on selected streams. Continue to monitor habitats and to inventory where base data is lacking.	The BLM would conduct intensive riparian monitoring (i.e., MIM) in watersheds that are not meeting the minimum PFC standard. This monitoring would aid in determining site or channel type specific maximum targets for riparian stubble height, stream bank alteration, and browse.				
Mon. 2	N/A	The BLM would complete rangeland health assessments or other rangeland condition assessments for every I and M-category allotment. The BLM would conduct vegetation trend and ground cover monitoring every 5 to 10 years in allotments that are not meeting rangeland health standards for ecological processes and watershed function-uplands where current livestock grazing is identified as a causational factor. The BLM would conduct vegetation trend and ground cover monitoring every 10 years in allotments meeting rangeland health standards for ecological processes, watershed function-uplands. In addition, every ten years, the BLM would monitor non-native annual grass communities not meeting standards. The BLM would conduct upland utilization monitoring every year in I and M-category allotments in pastures grazed during the critical growing season (i.e., mid spring to late summer), except in non-native annual grass communities. The BLM would conduct upland utilization at a minimum of every year in I-category allotments and 3-5 years in M-category allotments/pastures not grazed during the critical growing season and non-native annual grass pastures. The BLM would conduct ground and foliar-cover monitoring every year after prescribed fire and wildfire until livestock grazing is re-authorized.				

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		The BLM would conduct MIM (effectiveness) every 5-10 years in allotments not meeting Rangeland Health Standards 2 or 4. The BLM would conduct MIM (implementation) on at least 20% of the allotments not meeting Health Standards 2 or 4 each year. If implementation monitoring shows stubble height, browse utilization, or stream bank alteration is above targets, then the allotment would be monitored the following year.				
Moist and Dry Coniferous Forests						
Goal 3	Maintain or enhance old growth forest structure characteristics.					
Obj. 8	Establish and/or maintain healthy and diverse forestlands in all age classes and stocking levels with at least 10% of the acreage in well-distributed old-growth habitat. Maintain the Sheep Mountain GU as old-growth climax forest.	Retain and restore existing old growth stands to conditions described in Region 6, Interim Old Growth Definition (USFS 1993).	Retain existing old growth forest stands to meet the minimum habitat requirements for old growth dependent wildlife species. Manage old growth stands determined to be in excess of the minimum habitat needs, as determined by an interdisciplinary team, for maximum sustained yield of timber.	Same as Alternative 1		
Management Actions						
MA 21	Exclude timber harvest on approximately 3,304 acres that are economically non-operable and on 673 acres that are within ACECs. This area will contribute to the need for old-growth habitat. *See Table 2-17. Forestry and Woodland*	When stocking levels are in excess of those described in Umatilla National Forest (USFS 1999) or other current stocking guides, such that the health and perpetuation of existing, accessible old growth stands is in jeopardy, the BLM would reduce	Where needed to perpetuate habitat needs, the BLM would maintain old growth stands as described in Alternative 1. *Table 2-17. Forestry and Woodland Products; Objective 1, Alternative 2.*	Same as Alternative 1, except that the BLM would place an emphasis on maintaining stands through active management in popular recreation areas. *See Table 2-17. Forestry and Woodland Products; Objective 1, Alternative 3.*	Same as Alternative 1, except that the BLM would place a priority on existing old growth stands for maintenance treatments over treatments to the general forest matrix in all forest management activity plans. *See Table 2-17. Forestry and Woodland*	The BLM would maintain existing old growth stands with no harvesting of wood products. The BLM would only use pre-commercial thinning and/or prescribed fire for managing old growth forests. *See Table 2-17. Forestry and Woodland*

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	Products; Objective 1, No Action Alternative.	stocking through commercial and/or pre-commercial thinning of understory trees. The BLM would remove fire intolerant species such as grand fir from warm/dry and cool/dry forest types. The BLM would retain mixed conifer composition in the cool/moist forest types. *See Table 2-17. Forestry and Woodland Products; Objective 1, Alternative 1.*			*Products; Objective 1, Alternative 4.*	*Products; Objective 1, Alternative 5.*
MA 22	N/A	As a follow-up activity to the silvicultural treatments proposed in MA 21, the BLM would promote the continued existence of dry-site old growth by restoring the historic fire cycle through prescribed burning and managing wildland fires to achieve resource objectives as determined to be necessary by an interdisciplinary team.				
Monitoring						
Mon. 3	*See Table 2-17. Forestry and Woodland Products*					
Obj. 9	N/A	Where some old growth components are present but the overall structure is lacking, management contributes towards the restoration of old-growth structure and composition as described in Region 6, Interim Old Growth Definition (USFS 1993).	Stands having some old growth components, but lacking in overall structure to be classified as old growth, is managed for maximum sustained yield of timber.	Same as Alternative 1		

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Management Actions						
MA 23	N/A	The BLM would conduct thinning from below to reduce stocking to prescribed levels as described in, Region 6, Interim Old Growth Definition (USFS 1993) and Umatilla National Forest (USFS 1999), or other current stocking guides. In warm/dry and cool/dry forest types, the BLM would remove later-seral, fire-intolerant species while retaining the largest, healthiest, earlier seral species. The BLM would retain a mixed conifer composition in the cool/moist forest types.	N/A	Same as Alternative 1, except that the BLM would place an emphasis on maintaining stands through active management in popular recreation areas.	Same as Alternative 1, except that the BLM would place the greatest emphasis out of all the alternatives on restoration of old growth structure *(See MA 21)*.	The BLM would only use pre-commercial thinning and/or prescribed fire to restore old growth structure. No ground disturbance or harvesting of forest products would occur.
MA 24	N/A	As a follow-up activity to the silvicultural treatments proposed in MA 23, the BLM would promote the development of dry site old growth by restoring the historic fire cycle through prescribed	N/A	Same as Alternative 1		

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		burning and managing wildland fires to prevent the future build-up of fuels and maintain a somewhat open understory.				
Hardwoods and Mountain Shrubs						
Goal 4	Leave all hardwood trees critical to stream protection and shrubs, grasses, rocks and natural "down" timber that afford shade over a perennial stream or maintain stream bank protection.	Maintain and enhance healthy populations of hardwoods (e.g., quaking aspen and black cottonwood) and mountain shrubs (e.g., mountain mahogany and chokecherry).				
Obj. 10	N/A	The BLM would implement restorative treatments in areas where hardwoods and/or mountain shrubs are declining, giving first priority to stands that are associated with any nearby forest health treatments.	The BLM would implement restorative treatments in areas where hardwoods and/or mountain shrubs are declining, giving first priority to stands for commodity production.	The BLM would implement restorative treatments in areas where hardwoods and/or mountain shrubs are declining, giving first priority to stands in high use recreation areas.	The BLM would select restorative hardwood and mountain shrub treatment areas based on highest benefit to the landscape, watershed values, and associated wildlife species.	The BLM would actively restore hardwoods and mountain shrubs only when proposed to benefit other disciplines. Otherwise, the BLM would regulate hardwoods and mountain shrubs by natural forces.

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Management Actions						
MA 25	N/A	If necessary, the BLM would remove competing vegetation that has encroached on historic stands of deciduous trees and shrubs, except for large, old conifers that existed prior to fire exclusion. The BLM would allow the harvest of competing conifer vegetation if economically and environmentally feasible. The BLM would extend the treatment boundary to a minimum of 100 feet beyond the apparent edge of the stand.	Same as Alternative 1, except that the BLM would set no minimum treatment size parameter.	Same as Alternative 1	Same as Alternative 1, except that the BLM would extend the treatment boundary to a minimum of 200 feet beyond the apparent edge of the stand.	Same as Alternative 4, except that the BLM would use only non-surface disturbing methods such as hand felling and/or prescribed fire. All cut material would be left on-site.
MA 26	N/A	Jackstraw cut material may be left in place around treated stands to prevent browsing and trampling. If monitoring determines it to be necessary, the BLM would construct fences to prevent browsing and trampling and remove such fences once regeneration has reached the sapling size class.				Since no harvesting of cut material would occur, in most cases, the presence of jackstraw cut material left on-site would preclude the need for fencing.
MA 27	N/A	Where cutting of competing vegetation alone does not stimulate regeneration, the BLM	N/A	Same as Alternative 1		

Table 2-7. Vegetative Communities						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		would burn treated stands with prescribed fire to promote sprouting of new trees (suckering). Broadcast burning would be restricted in mountain mahogany communities because the species does not respond to fire				
Juniper Woodlands						
Goal 5	N/A	Manage juniper woodlands to provide for historic, pre-fire suppression distributions of stands on the landscape.				
Obj. 11	N/A	Reduce juniper woodlands to approximate historic acreages.				
Management Actions						
MA 28	N/A	The BLM would reduce the extent of juniper by 5,000 to 20,000 acres per decade in areas where juniper has encroached on neighboring rangelands and/or other conifer and hardwood forests.	The BLM would emphasize juniper reductions to improve forage value or where wood products can be profitably harvested. Phase I and II juniper *(see Glossary)* areas would be targeted.	Same as Alternative 1	The BLM would reduce the extent of juniper by 15,000 to 30,000 acres per decade in areas where juniper has encroached on neighboring rangelands and/or other conifer and hardwood forests.	The BLM would reduce Phase I and II juniper only where it is encroaching on riparian and/or Wyoming big sagebrush communities (approximately 6,000 acres) by 3,000 to 6,000 acres per decade.
MA 29	N/A	The BLM would favor mechanical treatments in Phase III juniper stands and only apply broadcast burning where desirable understory vegetation cover is adequate to help prevent weeds from invading the site. Pile burning would be favored in stands that do not have adequate understory perennial cover. The BLM could treat Phase I and II juniper stands by prescribe burning, mechanical, herbicides, managing wildland fire to achieve objectives, or a combination thereof.				
Obj. 12	N/A	Retain all old-growth juniper stands or individual trees where they currently exist.				
Management Actions						
MA 30	N/A	The BLM would not treat juniper exhibiting old-growth characteristics. Such characteristics include rounded or flat crowns, tree ring analysis indicating age >150 years, and a diameter at root collar >21 inches.				

Table 2-8. Invasive Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
INVASIVE PLANTS AND NOXIOUS WEEDS						
Goal 1	N/A	Control the introduction and proliferation of noxious weeds and undesirable invasive plants and reduce the extent and density of established populations.				
Obj. 1	N/A	Place emphasis on treatment of sites containing high priority noxious weeds or undesirable invasive plants using integrated weed management (IWM) principles in a coordinated Decision Area effort.				
Management Actions						
MA 1	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 Programmatic 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 re-infestation. Coordination and cooperation with county weed control officers will continue on a	The BLM would control invasive plants and noxious weeds by using mechanical, biological, cultural, and chemical treatments. High priority treatment areas would include SMAs (e.g., WSAs, WSRs, ACECs, and research natural areas [RNAs]), lands with wilderness characteristics, habitats for BLM special status or culturally important species, and areas of disturbance such as roadsides and developed recreation and administrative sites. The BLM would use the most effective control methods for a particular species and emphasize non-chemical methods when practicable.	Same as Alternative 1, except lands with wilderness characteristics would not be among the high priority treatment areas.	Same as Alternative 1		

Table 2-8. Invasive Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	regular basis.					
MA 2	N/A	The BLM would evaluate weed sites for treatment method and priority for treatment based on their location, species, potential to spread, and effectiveness of available treatment options.				
MA 3	N/A	The BLM would use EDRR to reduce the introduction of new species and prevent the spread of weeds from existing sites to new areas.				
MA 4	N/A	The BLM would use active restoration activities on treated weed sites when natural recovery of the desirable plant community is unlikely. Treated areas would be restored to provide competitive desirable plant communities that discourage the establishment of invasive plant populations.				The BLM would use restoration activities that utilize non-ground disturbing techniques where active restoration is necessary. The BLM would require the use of native plant materials and encourage natural recovery of the desirable plant community.
MA 5	N/A				The BLM would establish weed prevention areas and delineate areas that are weed free, with an emphasis on increasing efforts under EDRR to keep these areas of desired native vegetation intact.	N/A
MA 6	N/A	The BLM would implement BMPs (see Appendix 2.1) to avoid contributing to the spread of invasive plants from BLM actions.				
Monitoring						
Mon. 1	N/A	The BLM would monitor weed treatment and weed site restoration projects for progress toward a desirable plant community.				
INVASIVE TERRESTRIAL AND AQUATIC SPECIES (EXCLUDING PLANTS)						
Goal 1	N/A	Prevent, restrict, and control the establishment of invasive terrestrial and aquatic invertebrate and vertebrate species, as well as pathogens on public lands.				
Obj. 1	N/A	Protect native species and their habitat on public lands from invasive species and pathogens.				

Table 2-8. Invasive Species

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Management Actions						
MA 1	N/A	The BLM would cooperate with Animal and Plant Health Inspection Service (APHIS) of the USDA, Oregon Department of Agriculture (ODA), and ODFW in detecting and preventing the spread of invasive species on public lands.				
MA 2	Cooperation with APHIS of the USDA will continue in the control of outbreaks of grasshoppers. Site-specific environmental analyses will be prepared by APHIS when needed to identify and evaluate impacts not adequately considered in broader environmental documents.	Same as No Action Alternative, except that sage-grouse requirements may determine/modify treatment actions taken, depending on location of the grasshopper outbreak.				Same as Alternatives 1-4, except that the BLM would use no chemical insecticides to control grasshoppers unless it is an extreme infestation. The BLM could use the grasshopper growth regulator diflubenzuron (also known as Dimilin).
MA3	N/A	The BLM would cooperate with USDA, USFS, and the Oregon Department of Forestry (ODF) in managing/controlling forest pathogens, invasive insects, rodents, and other forest pests on public forests and woodlands.				
Monitoring						
Mon. 1	N/A	The BLM would regularly coordinate with APHIS, ODA, ODFW, ODF, and other federal and state agencies involved in surveys and monitoring for invasive species. More specifically: 1. Wildlife biologists, fish biologists, river rangers, and other BLM resource specialists would regularly monitor for the appearance of unwanted vertebrates and invertebrate species in the Planning Area. 2. Forestry staff would regularly monitor for signs of new outbreaks of forest pests and disease. 3. The BLM would monitor other program management actions to ensure BMPs are being followed that minimize the potential spread or establishment of invasive species. 4. The BLM would maintain and use monitoring data to evaluate progress towards eradicating or controlling new invasive species when a new species is discovered.				

Table 2-9. Fisheries (Includes Special Status Aquatic Species)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	Reestablish, improve, and/or maintain riparian habitat in or adjacent to seeps, springs, wet meadows, and perennial streams. Maintain/improve habitat for fisheries. Maintain/improve habitat for resident trout species.	Protect, conserve, and restore aquatic, riparian, and wetland habitats to provide for a natural abundance and diversity of self-sustaining native fish and other aquatic species populations.				
Obj. 1	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 streams that have anadromous or resident fish or the potential to support fish. Approximately 83 miles of fishery habitat have been inventoried. A summary of fish habitat condition and trend in the Planning Area is displayed in the GU descriptions.	For native and special status fish and other aquatic species, as well as for non-native fish species, and where it would not conflict with habitat needs of native or special status fish species, promote management activities that maintain or improve existing aquatic and/or riparian habitats in conservation watersheds, and improve or restore aquatic and/or riparian habitat in restoration watersheds (see Baker ARMS; Appendix 2.2).	In watersheds that support native, special status, and/or non-native sport fish species, promote management activities that maintain, improve, or restore aquatic and/or riparian habitats, with an emphasis on increasing recreational fishing opportunities.		For native and special status fish and other aquatic species only, promote management activities that maintain or improve existing aquatic and/or riparian habitat in conservation watersheds and that improve or restore aquatic and/or riparian habitat in restoration watersheds.	Same as Alternative 4, except use natural processes and less obtrusive methods of resource protection and restoration.

Table 2-9. Fisheries (Includes Special Status Aquatic Species)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Management Actions						
MA 1	Objectives for wildlife and fisheries habitat management will be consistent with BLM policy identified in the 1988 nationwide "Fish and Wildlife 2000" plan	The BLM would adhere to guidance and management direction provided in the Baker ARMS, which establishes and defines RMAs, riparian and aquatic habitat desired conditions, and standards and guidelines and establishes and prioritizes conservation and restoration watersheds (see Appendix 2.2).				
MA 2	N/A	The BLM would install large woody material in streams where it is lacking and where appropriate, feasible, and beneficial to special status aquatic species, following the prioritization strategy provided in the ARMS.	The BLM would install large woody material in recreational fishing streams where it is lacking and where appropriate, feasible, and beneficial to special status aquatic species, in order to increase recreational fishing participation through the enhancement of recreational fisheries habitat, following the prioritization strategy provided in the ARMS.		Same as Alternative 1	Same as Alternative 1, except that the BLM would emphasize utilizing less intrusive methods and allowing for natural processes where appropriate and feasible
MA 3	N/A	The BLM would enhance spawning and rearing reaches of streams by improving aquatic and riparian habitat where appropriate, feasible, and beneficial to special status fish species, following management direction provided in the Baker ARMS.	The BLM would enhance spawning and rearing habitat of recreational fisheries where appropriate, feasible, and beneficial to special status fish species, in order to increase recreational fishing participation through the enhancement of recreational fisheries habitat, while following management direction provided in the Baker ARMS.		Same as Alternative 1	Same as Alternative 1, except that the BLM would emphasize utilizing less obtrusive methods and allowing for natural processes where appropriate and feasible.
See Table 2-19. Livestock Grazing for management actions relating to riparian management.						
MA 4	N/A	The BLM would develop grazing systems that enhance riparian and aquatic habitat through plantings, fencing, and off-site water developments.				
MA 5	Maintain enclosures that	The BLM would	The BLM would maintain or improve existing		Same as Alternative 1	Same as Alternative 4

Table 2-9. Fisheries (Includes Special Status Aquatic Species)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	benefit wildlife habitat. Additional enclosures will be built as needed and as funds are available to meet site-specific needs or objectives	maintain or improve existing riparian exclosures and pastures and develop new exclosures where appropriate, feasible, and beneficial to native and special status aquatic and riparian-dependent species (both plants and animals).	riparian exclosures and pastures and develop new exclosures where appropriate, feasible, and beneficial to native and special status aquatic and riparian-dependent species, as long as doing so maintains and/or improves recreational fisheries habitat.			except that the BLM would emphasize utilizing less obtrusive methods and encouraging natural processes where appropriate and feasible.
MA 6	N/A	When new land developments or ground-disturbing activities are considered, the BLM would implement activities or projects that address both the needs of the public and the protection of riparian and aquatic species habitat.				
MA 7	N/A	The BLM would treat noxious weeds and other invasive plants where they threaten riparian vegetation and water quality.				
MA 8	N/A	The BLM would implement the emergency consultation guidance and recommended measures to minimize or eliminate adverse effects to ESA listed species from wildland fire suppression and suppression rehabilitation activities when wildfires occur in watersheds that support native and/or special status aquatic and riparian-dependent species and/or their habitat, regardless of ESA-listed or non-listed status.				
MA 9	N/A	The BLM would evaluate development of new hydropower facilities if proposed in waterways that support native and/or non-native fish species and/or their habitat. If existing dams were proposed for hydropower retrofitting, authorization would be subject to the protection of native and/or non-native fish species and/or their habitat.	The BLM would evaluate development of new hydropower facilities if proposed in waterways that support native and non-native sport fish species and/or their habitat, weighing their value as a means to encourage recreational fishing participation from increased recreational fishing opportunities against aquatic and riparian resource protections. If existing dams were proposed for hydropower retrofitting, authorization would be subject to the protection of sport fish species and/or their habitat, with an emphasis on improving the quality and quantity of recreational fisheries.		The BLM would evaluate development of new hydropower facilities if proposed in waterways that support native fish species and/or their habitat. If existing dams were proposed for hydropower retrofitting, authorization would be subject to the protection of native fish species and/or their habitat. The BLM would authorize no new hydropower facilities or retrofitting of existing dams in WSR corridors.	

Table 2-9. Fisheries (Includes Special Status Aquatic Species)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Monitoring						
Mon. 1	N/A	The BLM would use the MIM protocol, an aquatic and riparian monitoring protocol, for both implementation and effectiveness monitoring, which provides for both short-term (implementation) and long-term (effectiveness) indicators to be measured at the site-specific scale, allowing observers to directly link a management change to resource objectives. This provides critical information for establishing cause and effect relationships when evaluating condition and trend.				
Mon. 2	N/A	The BLM would conduct PACFISH/INFISH biological opinion monitoring, which is designed to evaluate the effectiveness of management actions in achieving aquatic and riparian desired conditions provided in the Baker ARMS (see Appendix 2.2), and the effectiveness of aquatic and riparian objectives in federal land use plans in the Interior Columbia River Basin.				
Mon. 3	N/A	The Baker FO's implementation and effectiveness monitoring strategies would include the use of approved databases and reporting mechanisms. Monitoring protocols would be in accord with appropriate BLM technical bulletins or other acceptable monitoring methods that address the aquatic and riparian desired conditions included in the Baker ARMS. Acceptable monitoring methods would be adaptive and include protocols that have been generally approved and accepted by other state and federal land and/or natural resource management agencies and by Native American tribes.				
Mon. 4	N/A	The BLM would engage in the following management considerations for aquatic and riparian monitoring: Objective-based: The BLM would focus monitoring on answering specific or key questions that inform decision making and allow adjustments to management. Properly located: The BLM would locate priorities for monitoring and designated monitoring areas using a broad-scale inventory such as PFC. Measurable: The BLM would apply quantitative, site-specific methods such as the MIM protocol at local indicator sites (i.e. designated monitoring areas) for trend monitoring and short-term compliance with grazing criteria. Monitoring emphasis and intensity would be commensurate with the importance of the question(s) being asked. For example, if the BLM were using adaptive decision-making, it would be important to monitor key parameters to the degree necessary in order to support the current course of action or to trigger an alternate approach. Plan level monitoring would make use of, and not duplicate, broad-scale monitoring programs. To the extent practicable, monitoring conducted at the plan scale would be compatible with, and complementary to, broader and finer-scale monitoring. The BLM would coordinate monitoring, and where possible, consolidate with similar efforts of other agencies or interested parties. The BLM would recognize that outcome-based management approaches rely on monitoring for their success and typically require a different level and type of monitoring than prescriptive approaches. The BLM would ensure that monitoring commitments in plans are feasible and achievable.				

Table 2-10. Wildlife						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	N/A	Maintain and improve wildlife security where feasible and consistent with other resources and resource uses.				
Obj. 1	Objectives for wildlife habitat management will be consistent with BLM policy identified in the 1988 nationwide "Fish and Wildlife 2000" plan.	Maintain, protect, or restore vegetative communities to improve wildlife habitat with an emphasis on structure, security, forage, connectivity, and riparian values.				
Management Actions						
General Wildlife Management						
MA 1	N/A	The BLM would not allow a net increase in the number of BLM roads in priority wildlife management areas (e.g., within sage-grouse lek sites or wintering ranges for big game) throughout the life of the RMP.	N/A		The BLM would not allow a net increase in the number of BLM roads throughout the life of the RMP.	
MA 2	N/A	The BLM would identify opportunities to decommission roads and trails causing wildlife resource damage throughout the life of the RMP. The BLM would undertake this when resources conflict, emphasizing the areas in restoration and conservation watersheds identified in Table 2-9.	The BLM would identify and undertake opportunities to decommission roads and trails causing wildlife resource damage where they do not conflict with commodity or recreation resources.		Same as Alternative 1	
MA 3	N/A	The BLM would make provisions for migratory bird habitat through the implementation of management actions that would support a variety of habitat communities.				

Table 2-10. Wildlife						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Sagebrush Habitat Management for Wildlife						
Obj. 2	N/A	Provide, maintain, enhance, and/or restore habitat in sagebrush ecosystems to meet habitat needs for sagebrush obligate species.				
Obj. 3	N/A	Provide connectivity and travel corridors for wildlife.				
See Table 2-7. Vegetative Communities MA 4 for loss/reclamation of sagebrush habitat.						
MA 4	N/A	Where prescribed fire is used as a management tool to improve sagebrush habitat, the BLM would create burned and unburned sagebrush areas within sage-grouse habitat areas that is consistent with state strategy for sage-grouse. Prescribed burning in Wyoming big sagebrush cover types would be limited (refer to Table 2-7. Vegetative Communities and Table 2-12. Fire and Fuels Management for specific MAs).				
See Table 2-7.Vegetative Communities, MA 2 for reducing/increasing sagebrush cover and livestock use.						
Big Game/Upland Game Habitat Management						
Obj. 4	Maintain/improve habitat quality for deer, elk, grouse, bighorn sheep, and turkey [in appropriate GU].	Maintain, protect, provide, and/or restore big/upland game habitat quantity and quality.				
Obj. 5	Habitats would be provided that are secure from direct human disturbance during the breeding, birthing, and winter seasons (i.e., when wildlife is susceptible to harassment). Areas would include winter big game habitats or habitats that require limited human disturbance and/or disturbance by motorized vehicles					
MA 5	Continue identification of wildlife habitat requirements as other resource activity plans are prepared. Develop additional Cooperative Management Agreements with Washington Department of Fish and Wildlife (WDFW) and ODFW. Conduct inventories of isolated tracts of public land to determine wildlife resource values.	Same as the No Action Alternative, except that the BLM would not prepare resource activity plans.				

Table 2-10. Wildlife						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 6	Habitat management plans (HMPs) will be developed for economically important wildlife species, including mule deer, antelope, bighorn sheep, and grouse. Primary emphasis of many of the plans will be to ensure the availability of palatable shrubs and thermal cover for deer on crucial winter ranges in Baker County. Benefits will also accrue to many nongame species as a result of these habitat enhancement projects.	The BLM would not prepare HMPs.				
See Table 2-7. Vegetative Communities, MA 12 for bitterbrush planting prescriptions.						
California Bighorn Management						
Obj. 6	N/A	Provide bighorn habitat on public lands that is free of disease transmission from domestic sheep and goat livestock operations.				
MA 7	N/A	The BLM would not authorize domestic sheep and goat grazing within 9 miles of an established bighorn breeding population when such use would result in potential risk for disease transmission to bighorn populations or limits the expansion	The BLM would not authorize domestic sheep and goat grazing within 9 miles of an established bighorn breeding population when such use would result in potential risk for disease transmission to bighorn populations or limits the expansion	Same as Alternative 1	**Alternative 5a** The BLM would not authorize domestic sheep and goat grazing within 25 miles of an established bighorn breeding population when such use would result in potential risk for disease transmission to bighorn populations or limits the expansion of bighorn populations and habitats. However, the BLM could allow goat and sheep grazing as a tool to manage noxious and invasive weeds within the 25-mile buffer.	

Table 2-10. Wildlife						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		of bighorn populations and habitats.	of bighorn into established bighorn populations and habitats. However, the BLM could allow goat and sheep grazing as a tool to manage noxious and invasive weeds within the 9-mile buffer.		**Alternative 5a**: This management action does not apply to Alternative 5a as all types of grazing would be excluded from the entire Decision Area.	
Forested Habitat Management for Wildlife						
Obj. 7	N/A	Maintain, protect, and/or restore forested habitat, with an emphasis on sustainable quantity and quality habitat within different seral age-classes to sustain wildlife habitats.				
MA 8	N/A	The BLM would implement restorative treatments on 50 acres per year in big game habitats where native hardwoods and/or mountain shrubs are declining.	N/A	The BLM would implement restorative treatments on 25 acres per year in areas where hardwoods and/or mountain shrubs are declining, giving first priority to stands that are associated with conifer treatment areas to provide wildlife viewing opportunities to the public.	Same as Alternative 1	The BLM would implement restorative treatments on 35 acres per year in big game habitats where native hardwoods and/or mountain shrubs are declining. The BLM would use low-impact methods (e.g. thinning from below, prescribed burn, the use of hand-tools).
MA 9	*See Table 2-7.Vegetative Communities, MA 31 for elk-proof fencing.*					
MA 10	Increase and enhance aspen forest types.	Where aspen stands are declining and would benefit from restoration, the BLM would mechanically treat stands or burn with prescribed fire to stimulate aspen regeneration. The BLM would avoid mountain mahogany stands during prescribed burns.				
MA 11	N/A	The BLM would retain a minimum of 30% canopy closure within the treatment area of forested land as cover.	The BLM would retain a minimum of 20% within the treatment area of forested land as cover.	Same as Alternative 1	The BLM would retain a minimum of 35% within the treatment area of forested land as cover.	Same as Alternative 1, except in lodgepole pine forests where it conflicts with objectives defined in Table 2-17 Forestry and Woodland Products.

Table 2-10. Wildlife						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
						In such instances, the BLM would follow management actions identified in Table 2-17.
MA 12	N/A	The BLM would retain all hollow logs over 18 inches in diameter. Where available, the BLM would retain all snags 21 inches in diameter or larger in non-salvage situations. In salvage situations, the BLM would determine snags by BMPs for specific species needs by treatment site or logger safety.		The BLM would retain all hollow logs over 18 inches in diameter. Where available, the BLM would retain all snags 18 inches in diameter or larger in non-salvage situations. In salvage situations, the BLM would determine snags by BMPs for specific species needs by treatment site or logger safety.		
MA 13	Maintain snags for cavity-dependent species.	The BLM would use green tree replacements when snags and down logs are not available. The BLM would use current science to calculate downed wood debris (e.g., hydro/soil BMPs would be used to determine tons/acre of down logs) and green tree replacements (see USFS 1999).				
Western Juniper Habitat Management for Wildlife						
Obj. 8	N/A	Manage juniper woodlands to provide for historic pre-fire suppression distributions of stands on the landscape. Protect and retain old growth juniper				
MA 14	*See Table 2-7.Vegetative Communities MA 38 for managing old-growth juniper.*					
MA 15	N/A	The BLM would protect patches of thermal and hiding cover sufficient to meet the habitat requirements of mule deer and elk. Such patches are usually located in historic areas (e.g., rocky outcrops).				
MA 16	N/A	The BLM would retain isolated mature junipers for nesting raptors in prescribed treatments, except where pygmy rabbit, sage-grouse, and white-tailed jackrabbit populations may be affected by predation or loss of forage and cover.	The BLM would retain all mature juniper trees with raptor nests.		The BLM would retain isolated mature junipers for nesting raptors in prescribed treatments, except where sage-grouse populations may be affected by predation or loss of forage and cover.	
Cliffs and Ledges						
Obj. 9	N/A	Protect cliffs, ledges, talus slopes, and unique habitats for wildlife				
MA 17	N/A	The BLM would protect cliffs, ledges, talus slopes, and unique habitats and mitigate affects in areas where they anticipate adverse effects.				

Table 2-10. Wildlife						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Habitat Loss and Fragmentation						
Obj. 10	N/A	Develop and implement strategies to ensure that large contiguous patches of sagebrush and conifers/hardwoods are maintained or improved.				
Obj. 11	N/A	Maintain and/or restore riparian habitat complexity, diversity, and structure.				Leave habitat complexity, diversity, and structure to natural processes.
MA 18	N/A	The BLM would mitigate developments and/or vegetative modification (e.g., roads, facilities, energy, and sagebrush manipulation) to protect wildlife travel corridors and habitat connectivity.				
MA 19	N/A	The BLM would pursue management that maintained or improved wildlife habitat; travel corridors; habitat connectivity; and wildlife security with partners, tribes, state agencies, federal agencies, and private landowners.				
		The BLM would acquire and/or exchange lands (from willing landowners) to maintain and/or improve wildlife habitat connectivity.	N/A	Same as Alternative 1		
MA 20	N/A	The BLM would restore wildlife habitat diversity and structure to areas of rangelands currently dominated by monoculture of stands of nonnative grasses. (See MAs 15 and 20 in *Table 2-7.* Vegetative Communities)				
MA 21	N/A	The BLM would avoid or mitigate impacts to wildlife travel corridors and habitat connectivity, emphasizing riparian areas and ridge tops where wildlife activity usually occurs.				
MA 22	N/A	Where sagebrush cover (Class III-V) would benefit from reducing canopy cover because habitat is no longer enhancing sagebrush for obligate wildlife species, allow sagebrush reduction projects. Sagebrush reduction projects should be irregular in shape and have diverse canopy	Where sagebrush cover (Class III-V) would benefit from reducing canopy cover because habitat is no longer enhancing sagebrush for obligate wildlife species, allow sagebrush reduction projects. Active grazing allotments that have more than 20% canopy cover and a healthy	Same as Alternative 1		The BLM would allow natural processes to manage sagebrush cover.

Table 2-10. Wildlife						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		structure (e.g., areas of Class I through V sagebrush cover; same as under Vegetative Communities: MA 2).Communities - MA 2.	understory of native grass would have the highest priority for sagebrush canopy cover reduction projects. Sagebrush reduction projects should be irregular in shape and have diverse canopy structure (e.g., Class I-V sagebrush cover).			
Watchable Wildlife						
Obj. 12	N/A	Work with partners to manage wildlife-viewing areas to provide increased public recreational opportunities while protecting wildlife.				
MA 23	N/A	The BLM would identify, maintain, or improve wildlife habitats that provide viewing opportunities through site-specific analysis.				
Reintroductions						
Obj. 13	Provide suitable habitat for reintroduction or augmentation of native wildlife species.					
Obj. 14	Provide suitable habitat for reintroduction of Columbia sharp-tailed grouse.	N/A				
MA 24	Transplants of endemic wildlife and fisheries species, including bighorn sheep, antelope, and beaver into suitable habitats will be allowed in cooperation with the affected state wildlife agencies (i.e. ODFW and WDFW). Wild turkeys and brown trout, which are not native to	The BLM would allow transplants of endemic wildlife into suitable habitats in cooperation with the affected state and federal wildlife agencies (e.g., ODFW, WDFW, and U.S. Fish and Wildlife Service [USFWS]). Wildlife species not historically endemic to Oregon would be evaluated on a case-by-case basis.				

Table 2-10. Wildlife						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	Oregon, may also be transplanted into suitable habitat.					

Table 2-11. Special Status Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
ALL SPECIAL STATUS SPECIES						
Goal 1	No action will be taken by the BLM that could jeopardize the continued existence of any federally listed threatened or endangered plant or animal species.	Manage public lands to protect, conserve, and/or restore/enhance populations and habitats of special status wildlife, fish, and plant species.				
Obj. 1	State sensitive species will be managed as though they were officially listed pursuant to the ESA of 1973.	Prioritize special status species management in the following order: (1) federal endangered species, (2) federal threatened species, (3) federal proposed species, (4) federal candidate species, (5) state-listed species, (6) BLM sensitive species, and (7) species of local importance.				
Obj. 2	N/A	Initiate conservation measures that reduce or eliminate threats affecting special status species and/or improve the condition of their habitats.				
Management Actions						
MA 1	The USFWS will be consulted regarding actions that affect habitat of these species.	The BLM would engage in ESA consultation for any discretionary action considered that may affect listed species or designated critical habitat under the ESA. The BLM would also engage in consultation on any discretionary action considered that would likely jeopardize a proposed species or cause destruction of proposed designated critical habitat. In compliance with ESA consultation streamlining protocols, the BLM would engage USFWS and/or National Marine Fisheries Service (NMFS) early in the decision process and request design input to reduce project impacts to resources protected under the ESA.				
MA 2	Avoid management actions that may result in disturbance and adverse impacts on crucial habitat for threatened, endangered, candidate, state listed and sensitive species.	The BLM would manage all habitats and populations of non-listed special status species on public lands in a manner that would not contribute towards federal listing as endangered or threatened.				
MA 3	N/A	The BLM would implement conservation strategies such as approved recovery plans, cooperative agreements, state strategies, and other instruments for BLM special status species.				
MA 4	N/A	Prior to any ground-disturbing discretionary action, the BLM would conduct a special status species review to determine whether any such species are likely to be present in the project area.				

Table 2-11. Special Status Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 5	N/A	The BLM would include mitigation measures for all ground-disturbing activities to reduce or avoid adverse impacts to special status species and their habitats.				
MA 6	Conduct inventories, determine habitat needs, develop and implement HMP and monitoring on these species	The BLM would conduct surveys, monitoring, and studies that support conservation of special status species.				
MA 7	N/A	The BLM would promote special status species conservation through land tenure adjustments, conservation easements, restoration projects, and cooperative planning.				
MA 8	N/A	The BLM would input new data on special status species sites annually into GeoBOB (the BLM's rare species database) or its replacement and would update existing data.				
Monitoring						
Mon. 1	Federal candidate plant, fish, and wildlife species will be monitored to determine condition, trend and habitat requirements for species management.	The BLM would monitor effectiveness of mitigation measures to reduce impacts to special status species to determine whether objectives are being met for special status species habitats or populations. The BLM would maintain and use monitoring data to evaluate progress towards achieving management objectives for special status species.				
SPECIAL STATUS PLANTS						
Goal 1	N/A	Manage for the recovery of any newly listed or newly located federally threatened or endangered plant species.				
Obj. 1	Maintain and protect population localities of *Haplopappus radiatus* under Oregon State Office BLM policy for threatened, endangered, and candidate species.	Maintain or improve habitats and spatial distribution of special status plant populations over the next 20 years.				
Obj. 2	N/A	Maintain or improve 3,010 acres of intact Wyoming sagebrush steppe with native understories for sagebrush steppe special status plants over the next 20 years.				
Management Actions						
MA 1	Continue to inventory plants listed in Appendix A of the	The BLM would maintain a current special status plant species list for the Planning and Decision Areas based upon the State Director's list and on-going inventory.				

Table 2-11. Special Status Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	Baker RMP (BLM 1989).					
MA 2	N/A	The BLM would complete effects analysis for proposed projects for special status plants, determining both beneficial and adverse impacts of the project on special status plants and their habitats.				
MA 3	N/A	The BLM would avoid actions that cause concentrated use or disturbance (e.g., trampling, OHVs, road construction, and range improvements) in special status plant habitats.				
MA 4	N/A	To protect pollinators, the BLM would avoid applying insecticides within $^{1}/_{4}$ mile of occupied habitat unless clearly beneficial to special status plants.				
MA 5	N/A	The BLM would avoid seeding within occupied habitat unless clearly beneficial to special status plants.				
MA 6	N/A	The BLM would apply IWM treatments to areas where invasive plants are encroaching on special status plant habitats.				
MA 7	N/A	The BLM would identify rare plant habitat parameters, pollinators, and pollinator habitat (nesting sites, additional foraging areas, and others).	N/A	Same as Alternative 1		
MA 8	N/A	When feasible, the BLM would maintain adequate quantities of special status plant species' seeds and propagules in storage at an approved seed storage facility for conservation and restoration.				
MA 9	N/A	If a special status plant population is lost or in decline, the BLM would consider reintroduction at the site.				
See Table 2-7. Vegetative Communities, MA 4 for loss/reclamation of sagebrush habitat.						
MA 10	N/A	The BLM would avoid using earth-moving equipment to build fire lines in known special status plant locations, except in cases where human life or private property is threatened.				
MA 11	N/A	During extended attack fire operations, the BLM would protect special status plant populations from adverse effects of fire suppression tactics by using a resource advisor to locate plant populations and provide appropriate mitigation, except in cases where human life or private property is threatened.				
Monitoring						
Mon. 1	Continue to inventory and monitor plant species that have been documented to determine geographical sub-populations and	The BLM would use monitoring to confirm the continued presence of special status plant populations and the status of their pollinator species.				

Table 2-11. Special Status Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	abundance within the Planning Area. Identify potential threats to these species					
Mon. 2	N/A	The BLM would complete both implementation and effectiveness monitoring for projects where there are potential impacts to special status plants.				
Mon. 3	N/A	The BLM would monitor to assure that weed treatments are not adversely impacting special status plants.				
SPECIAL STATUS AQUATIC SPECIES						
Goals, objectives, management actions, and monitoring for special status aquatic species (fish) are addressed in Table 2-9. Fisheries.						
SPECIAL STATUS WILDLIFE						
Sage-grouse Habitat Management						
Goal 1	N/A	Provide a variety of sagebrush canopy classes to complete all sage-grouse lifecycles (See Appendix 2.4 for canopy classifications).				
Obj. 1	N/A	Retain 70% or more of sagebrush habitat with an emphasis on advanced structural stages, sagebrush classes of 3, 4, and 5 (see Appendix 2.4 for description of classes).	Retain 70% or more of sagebrush habitat with an emphasis on sagebrush classes of 3 and 4 (see Appendix 2.4 for description of classes).	Same as Alternative 1	Maintain 100% of existing sagebrush habitats and enhance potential habitats that have been disturbed within structural stages, sagebrush classes of 3 to 5 (see Appendix 2.4 for description of classes).	
Obj. 2	N/A	Where livestock is present, design a grazing system meets perennial grass stubble height requirements for sage-grouse during nesting and brooding seasons.				
Management Actions						
MA 1	Continue inventories initiated on sage-grouse to determine nesting, brood rearing, and wintering habitat areas. Develop an HMP for sage-grouse to maintain or enhance breeding, nesting, and wintering areas.	The BLM would identify sage-grouse and sagebrush dependent species habitat and map sagebrush canopy cover classes through field visits and Standard and Guides to aid in providing management measures (identified in the Table 2-7. Vegetative Resources) that would meet Objective 1 over the life of the RMP.				

Table 2-11. Special Status Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 2	Allow no more than moderate utilization (41-60%) of perennial grass understory.	The BLM would allow no more than light utilization (21-40%) of perennial grass understory within occupied sage-grouse nesting/ brooding habitat.	The BLM would allow no more than moderate utilization (41-60%) of perennial grass understory within occupied sage-grouse nesting/brooding habitat in normal production years (i.e., a non-drought year as identified under the National Resource Conservation Service [NRCS] handbook).		Same as Alternative 1	
MA 3	N/A	To provide for suitable perennial grass cover for nesting and brooding areas, the BLM may adjust/change livestock grazing season of use (Breeding lek use March 1 - May 15, Nesting May 1 - June 15, Brooding June 1 - July 30) to assure adequate residual re-growth for grass species.	The BLM would maintain management for grazing systems (as identified under the current Baker RMP [BLM 1989] as amended) within nesting and brooding areas.		Same as Alternative 1	
MA 4	N/A	The BLM would require the avoidance of supplemental feeding and salting of livestock in known/occupied breeding, nesting, and wintering habitats to minimize any potential impacts under all circumstances.				
MA 5	N/A	The BLM would conduct field surveys for sage-grouse prior to treatment of habitats to avoid bird disturbance and schedule management activities to avoid conflict with the sage-grouse life cycle.				
Obj. 3	N/A	Provide contiguous sage-grouse breeding, nesting, and brooding habitat with minimal disturbance and harassment.				
Management Actions						
MA 6	N/A	The BLM would exclude Virtue Flat ACEC from all new land-use authorizations. Outside the ACEC, the BLM would use recommended	The BLM would use a 2-mile avoidance buffer around leks considered occupied by ODFW for wind development. Within these avoidance areas, the BLM would	The BLM would use a 3-mile avoidance buffer around occupied leks for wind development. Within these avoidance areas, the BLM would emphasize protection of	The BLM would exclude all land use authorizations for wind development within the identified key habitat buffer for sage-grouse. Within this exclusion	The BLM would exclude all ACECs from all land-use authorizations and place a 5-mile exclusion buffer around all occupied and

Table 2-11. Special Status Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		guidelines under IM OR-2009-038, including a 3-mile avoidance buffer on all leks for wind development, or the latest guidelines issued. Within the avoidance area, native sagebrush communities would receive the highest level of protection.	emphasize protection of native sagebrush communities.	native sagebrush communities.	area, the BLM would emphasize protection of native sagebrush communities.	unoccupied leks for wind development.
MA 7	N/A	The BLM would use direct attack tactics during wildfire suppression activities in known sage-grouse habitat, particularly leks and nesting and brooding areas (within the framework of the Federal Wildlife Fire Policy) when it is safe and effective at reducing amount of burned habitat.				
MA 8	N/A	The BLM would treat dense stands of rabbit brush (over Class 3) to re-establish sagebrush.				N/A
MA 9	N/A	The BLM would evaluate wildfires burning more than 10 acres of sage-grouse habitat (or as per the 2005 ODFW Greater sage-grouse strategy or subsequent adopted strategies) to determine if habitat treatment is necessary to recover ecological process and achieve habitat objectives defined in sage-grouse strategy.	The BLM would evaluate wildfires burning more than 40 acres of sage-grouse habitat to determine if treatment is necessary to recover ecological process and achieve habitat objectives.	The BLM would evaluate wildfires burning more than 25 acres of sage-grouse habitat to determine if treatment is necessary to recover ecological process and achieve habitat objectives.	Same as Alternative 1	
MA 10	N/A	The BLM would treat noxious weeds and other invasive species where they threaten the quality of sage-grouse habitat. The BLM would apply noxious weed SOPs, mitigation, and conservation measures to prevent infestations from occurring.				
Obj. 4	N/A	Protect greater sage-grouse habitats from direct disturbance during the winter and breeding season.				

Table 2-11. Special Status Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Management Actions						
MA 11	N/A	The BLM would manage juniper control within sage-grouse habitat to enhance habitat connectivity.				
MA 12	N/A	The BLM would reduce western juniper encroachment into rangeland sites that threaten sage-grouse as a result of habitat loss and hunting perches for avian predators to a level that would not impact sage-grouse population levels around leks and nesting sites. The BLM would use mechanical treatments or herbicides over the life of the RMP rather than fire where there is a risk of exacerbating fire cycles associated with a high establishment of invasive species.				
MA 13	N/A	The BLM would incorporate the determinations and directions identified in the Virtue Flat OHV Recreation Area Management Plan (RAMP; BLM 2007).	The BLM would ensure that current management of the Virtue Flat OHV Play Area would continue to provide limited high-impact motorized recreation opportunities.	Same as Alternative 1	Same as Alternative 2	Same as Alternative 1
Please refer to Table 2-26. ACECs (Proposed) for specific management actions that would benefit sage-grouse habitat related to the designated of the proposed Virtue Flat Sage-Grouse Habitat ACEC.						
Northern Goshawk Management						
Management Actions						
MA 14	N/A	The BLM would evaluate timber harvesting to see if treatment is necessary on 30-acre parcels containing goshawk nest stands, except on a project-by-project basis where future forest health outweighs short-term displacement of individual goshawks.			The BLM would defer timber harvesting on 80-acre parcels containing goshawk nest stands.	N/A
Ferruginous and Swainson's Hawk Management						
Management Actions						
MA 15	Maintain and monitor the existing platforms for ferruginous hawks and install new platforms.	No specific management for the Swainson's hawk is proposed as it is no longer considered a special status species by the BLM. See BMPs for raptor management.				
MA 16	Continue winter and spring inventories on Swainson's and ferruginous hawks.	See BMPs for ferruginous hawk raptor management in Appendix 2.1.				

Table 2-11. Special Status Species						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Columbia sharp-tailed Grouse Management						
Management Actions						
MA 17	Develop a HMP for Columbian sharp-tailed grouse introductions in areas where populations become reestablished.	No specific management for the Columbia sharp-tailed grouse is proposed because it is no longer a focus species for ODFW. The species is addressed under translocation of species in Table 2-10. Wildlife.				
MA 18	Maintain and monitor the existing platforms for ferruginous hawks and install new platforms.	No specific management for the Swainson's hawk is proposed as it is no longer considered a special status species by the BLM. See BMPs for raptor management.				

Table 2-12. Fire and Fuels Management						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	Firefighter and public safety are the highest priority in every fire management activity.	Ensure that protection of human life is the single, overriding priority in all fire management activities.				
Goal 2	N/A	Manage fuels to avoid/limit unwanted damage from wildfires.				
Goal 3		Manage wildfire suppression actions to limit/avoid resource damage.				
Goal 4	N/A	Return fire as an ecological process in the ecosystem.				
Obj. 1	N/A	Determine the management response to every wildfire based on the likely consequence to firefighter and public safety, natural and cultural resources, and values to be protected.				
Management Actions						
MA 1	Employ fire prevention strategies that reduce human ignitions with special emphasis in campgrounds and transportation corridors (e.g., through signing, news releases, patrols, and public contacts).					
MA 2	Full suppression will be implemented on fires that threaten high values at risk, such as private property, improvements, and areas with unique and/or special resource values. Modified suppression, through escaped fire analysis, will be implemented on areas with lower values at risk, and which are not covered by prescribed fire plans. Provide an Appropriate Management Response on all wildland fires, with emphasis on minimizing suppression costs, considering	The BLM would suppress all wildfires in the Wildland Urban Interface (WUI). All responses to wildfires outside the WUI would be based on values at risk and on resource management objectives contained in this RMP and other relevant direction.				

Table 2-12. Fire and Fuels Management						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	firefighter and public safety, benefits, and values to be protected consistent with resource objectives, standards and guidelines.					
MA3	N/A	The BLM would utilize existing natural and human-made barriers (such as roads, trails) as control lines during wildfire and prescribed fire activities.				
MA 4	N/A	The BLM would use minimum impact suppression tactics (MIST) in all SMAs. The BLM would also use MIST within the remainder of the Decision Area considering other values at risk to be protected.				
MA 5	N/A	The BLM would consider using a resource advisor familiar with area management objectives when sensitive resource values are threatened.				
MA 6	N/A	Where available, the BLM would locate temporary wildfire suppression support facilities in areas already impacted (e.g., administrative sites or recreation sites).				
MA 7	N/A	The BLM would use mechanical equipment such as dozers where necessary to meet suppression and resource objectives.				
MA 8	N/A	The BLM would assess all damage caused directly by fire suppression activities and complete rehabilitation as soon as possible following containment of the fire.				
Obj. 2	N/A	Determine post-fire effects of all wildland fires and determine needed actions.				
Management Actions						
MA 9	N/A	The BLM would assess all wildland fires for necessary emergency stabilization and rehabilitation needs.				
MA 10	N/A	Where emergency stabilization and rehabilitation needs are identified, the BLM would complete necessary treatments in a timely and cost-effective manner as outlined in the BLM Burned Area Emergency Stabilization and Rehabilitation Handbook H-1742-1 (2007) and Department of Interior Departmental Manual 620 DM 3 (2004), or their replacements.				
Obj. 3	N/A	Manage hazardous fuel conditions within the WUI to reduce undesirable potential wildfire impacts. Manage hazardous fuel conditions outside the WUI to reduce undesirable potential wildfire effects while meeting the resource goals and objectives for a given location/allocation.				
Management Actions						
MA 11	Use fire to restore and/or sustain ecosystem health based on sound scientific principles and information, balance with other societal goals, including public health	The BLM would coordinate with local landowners and cooperating local, state, and federal agencies to implement community wildfire protection plans. The BLM would use prescribed fire or mechanical, chemical, or cultural fuels management techniques to achieve specific objectives within the WUI and non-WUI. The BLM may manage naturally ignited wildfires occurring outside of the WUI to achieve specific objectives as described throughout this RMP.				

Table 2-12. Fire and Fuels Management						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	and safety, and air quality.					
MA 12	N/A	Over the life of the RMP, the BLM would reduce the percentage of non-WUI lands classified in fire regime Condition Class (FRCC) 2 and 3 by at least 20 percent and increase the percentage of non-WUI lands classified in FRCC 1 by at least 10 percent.				
Monitoring						
Mon. 1	N/A	The BLM would complete site-specific implementation and effectiveness monitoring on 40% of planned projects annually, complete burn boss reports for all prescribed fire projects, create a global positioning system (GPS) file for all completed projects and integrate into GIS, and utilize LANDFIRE refresh function (every 5 years) to monitor changes in FRCC at the Planning Area level.				

Table 2-13: Cultural Resources and Resources of Importance to Native American Tribes						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	Protect and preserve cultural resources for their information potential and public values.	Provide for and conserve traditional use, heritage, scientific, educational, public, and recreational values of cultural resources for present and future generations.				
Obj. 1	Maintain specific historic properties for interpretation of mining and settlement. Maintain a representative sample of prehistoric resources for future scientific use	Identify, preserve, and protect the integrity of important cultural resource.				
Management Actions						
MA 1	Protect and enhance cultural resources through management of cultural properties for information potential, public values, and conservation in ten management areas identified for high cultural values; including the Snake River National Register District; and sites in the Grande Ronde, Powder River, Keating, Burnt River, and Baker County GUs	The BLM would protect culturally important areas from accidental or intentional loss through monitoring, visits by law enforcement, fencing, and stabilization, with an emphasis on significant sites of high cultural, historic, and scientific value. Proactive survey efforts would be completed that focus on areas where impacts to natural and cultural resources are anticipated.				
MA 2	Protect and maintain all National Register or National Register	The BLM would manage the segments of the Oregon Trail through the Decision Area in accordance with the Oregon National Historic Trail Management Plan (BLM 1989), or its replacement and in accordance with ACEC management actions. (See Table 2-25. ACECs [Existing]).				

Table 2-13: Cultural Resources and Resources of Importance to Native American Tribes						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	eligible cultural properties; implement cultural RMPs for priority management areas, ACECs, and important properties; preserve important cultural properties through protection projects and actions; and evaluate potential areas or districts for National Register eligibility.					
MA 3	Protect and enhance cultural resources through management of cultural properties for information potential, public values, traditional uses and conservation in ten management areas identified for high cultural values; including the Snake River District; and sites in the Grande Ronde, Powder River, Keating, Burnt River, and Baker County GUs.	The BLM would protect and enhance cultural resources through management of cultural properties for public uses, traditional uses, conservation uses, and scientific uses in areas identified for high cultural values including the Lower Snake-Asotin, Lower Grande Ronde, Powder River, Burnt River, Brownlee Reservoir, Umatilla, and Walla Walla subbasins.				
MA 4	Manage properties in the Snake River National Register District for conservation or information potential.	The BLM would: Manage properties in the Snake River National Register District for conservation or scientific uses. Manage multiple and single component site types representing prehistoric and protohistoric upland/riverine occupation, including complex multiple component rock shelters, and open sites primarily for conservation uses and scientific uses.				

Table 2-13: Cultural Resources and Resources of Importance to Native American Tribes						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	Manage multiple and single component site types representing prehistoric and proto-historic upland/riverine occupation, primarily for information potential. Manage complex multiple-component rock shelters and open sites, and the Auburn town site for conservation or information potential. Historic mining and settlement sites, intact 1860-l890 mining complexes and engineering features, and the El Dorado Ditch will be managed for information potential and public values. Intact portions of the Oregon Trail will be managed for public values, with restrictions to preserve historic resources.	Mange specific traditional plant gathering areas identified during the RMP process and utilized by the tribes for traditional uses. Manage historic mining and settlement sites and intact 1860-l890 mining complexes and engineering features, including Auburn town site and the El Dorado Ditch, primarily for scientific uses and public uses. Manage intact portions of the Oregon Trail for public uses, with restrictions to preserve historic resources.				
MA 5	The BLM would conduct periodic patrols to discourage vandalism.					
MA 6	N/A	When available, the BLM would assign a resource advisor with cultural resource knowledge to help reduce impacts to cultural resources during fire suppression activities.				
MA 7	N/A	When possible, the BLM would remove or reduce hazardous fuels within or adjacent to susceptible cultural resources.				N/A

Table 2-13: Cultural Resources and Resources of Importance to Native American Tribes						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Monitoring						
Mon. 1	N/A	The BLM would promote collaboration between BLM law enforcement and cultural resource staff to monitor and protect against illegal artifact collection, site excavation, and vandalism by patrolling National Register eligible sites, areas experiencing increased public recreation, areas with increased or new public access, and locations with established enforcement needs.				
Mon. 2	Comply with federal laws, regulations, and Bureau directives for considering the effect on cultural resources of all ground-disturbing projects or activities on public land.	The BLM would monitor and assess the effectiveness of resource protection measures for a sample of ten to twenty cultural resources and/or properties of traditional religious and cultural importance on an annual basis to determine if protection objectives are being met.				
Mon. 3	N/A	The BLM would establish a program to monitor fire effects on cultural resources that focuses on fuel models and cultural resource types specific to the Decision Area. Monitoring data would be gathered during prescribed fire treatments and/or wildland fire events.				
Goal 2	Collaborate with local and regional federally recognized Native American tribes to manage culturally and traditionally important places and natural resources consistent with treaty and trust responsibilities.					
Obj. 2	Maintain and, where possible, improve natural and cultural resource conditions to enhance opportunities to provide for Native American traditional uses.					
Obj. 3	Recognize Native American traditional use areas and work to accommodate local and regional federally recognized tribal requests to practice traditional cultural activities on specific lands, and to allow for the continuation of such uses.					
Management Actions						
MA 8	On a case-by-case basis, the BLM would review and accommodate Native American requests to practice traditional cultural activities on specific lands, consistent with other resource goals and objectives.					
MA 9	The BLM would work with tribes to identify ways to protect or mitigate impacts to traditional use areas, traditional cultural and religious areas, and sacred sites.					
MA 10	When possible, the BLM would maintain and/or increase access to areas identified by tribes as important traditional use areas. In areas designated as "closed," the BLM would grant access by motorized vehicles to federally recognized tribal members on a case-by-case basis and in conformance with resource objectives.					
MA 11	In collaboration with tribes, the BLM would identify and prioritize culturally important plant gathering areas for monitoring and protection. The BLM would develop guidelines for management in consultation with affected tribes expressing interest in the protection of specific gathering areas, and would lay out management and monitoring strategies for each area.					

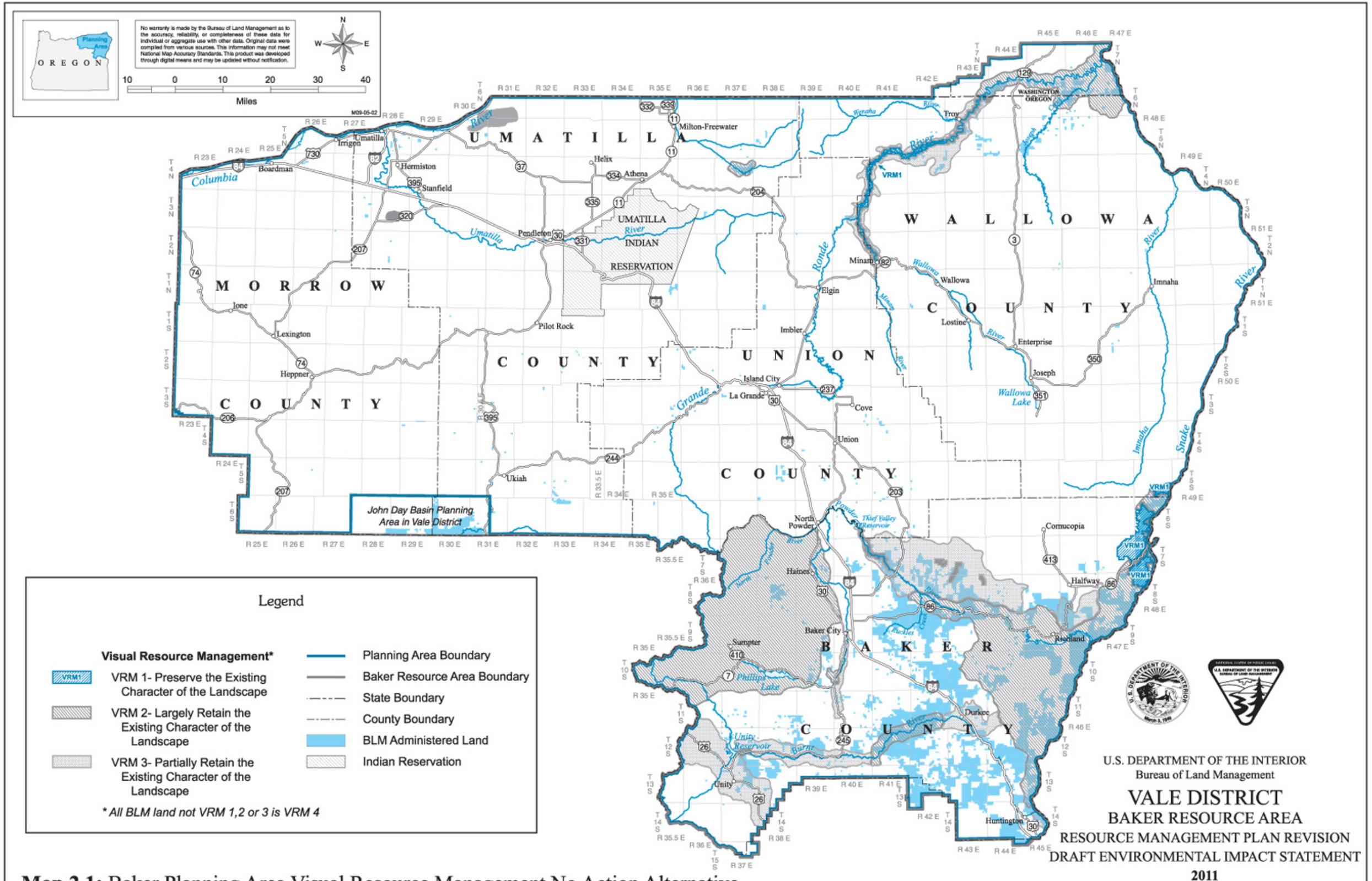
Table 2-13: Cultural Resources and Resources of Importance to Native American Tribes						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 12	If/when a federally recognized Native American tribe chooses to exercise its treaty-reserved grazing rights, the BLM would require that such grazing follow BLM regulations.					
Obj. 4	Honor the trust responsibility to Native American Indian tribes.					
Obj. 5	Maintain or improve communication with local and regional federally recognized Native American tribes.					
Management Actions						
MA 13	The BLM would promote meetings to provide early tribal involvement in matters dealing with resource use, planning, protection, and preservation of cultural resources.					
MA 14	The BLM would emphasize ensuring the consistency of BLM plans and projects with tribal programs for the protection and enhancement of natural and cultural resources of interest to the tribes.					
Monitoring						
Mon. 4	In collaboration with interested tribes, the BLM would monitor and assess the effectiveness of resource protection measures, on identified areas of ethnographic resource procurement.					

Table 2-14. Visual Resources

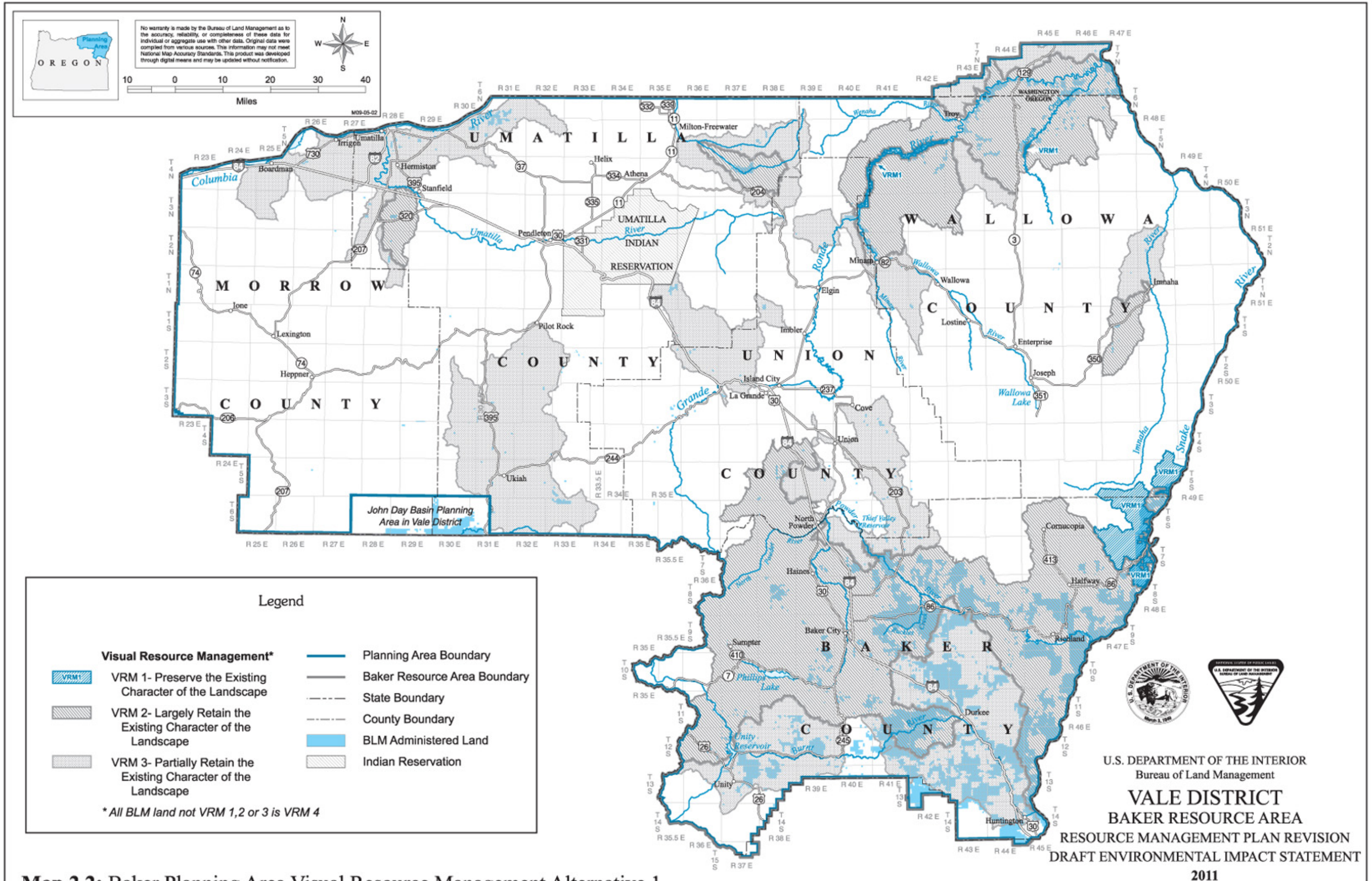
	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Goal 1	Visual resources in the Decision Area have been classified according to BLM's VRM criteria. These criteria include scenic quality, visual sensitivity, and viewing distance, and have resulted in four VRM classifications. Each classification defines management objectives and the degree of visual change acceptable within a landscape: Class I: Primarily for SMAs (No projects will be allowed within these areas). Class II: Primarily for areas of high scenic quality. Class III: Primarily for areas considered important from an aesthetic viewpoint. Not necessarily outstanding scenery. Class IV: Primarily for general scenic landscapes throughout much of the Decision Area.	Manage public land actions and activities in a manner consistent with Visual Resource Inventory (VRI) procedures and VRM class objectives while providing for multiple uses. Identify and protect areas of high scenic quality (VRM Class I & II) while providing for multiple uses and other resource needs in VRM Class III and IV lands.				

Table 2-14. Visual Resources						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	Class V: Primarily for sites requiring reclamation.					
Obj. 1	N/A	Utilize VRM contrast rating procedures to protect the visual quality of public lands according to the criteria for each VRM class.				
Land Use Allocations						
Special Note: *The following designations for VRM Classes were based on VRIs of public lands for scenic quality, sensitivity, and distance zones and then adjusted to best meet the directions and primary objectives of the alternatives. Refer to Chapter 3 for Class Definitions.*						
LUA 1	Maintain (1989) VRM classifications by acreage in the Decision Area: Class I: 17,918 acres: 4% Class II: 144,365 acres: 33% Class III: 57,399 acres: 13% Class IV 208,744 acres: 49% Total: 428,425 acres: 100% See Map 2-1	VRM classifications by acreage in the Decision Area: Class I: 18,543 acres: 4 % Class II.: 241,779 acres: 56% Class III: 142,764acres: 33% Class IV: 25,338 acres: 6% Total: 428,425 acres: 100%. See Map 2-2	VRM classifications by acreage in the Decision Area: Class I: 17,918 acres: 4 % Class II: 109,096 acres: 25% Class III: 220,674 acres: 52% Class IV: 80,738 acres: 19% Total: 428,425 acres: 100% See Map 2-3	VRM classifications by acreage in the Decision Area: Class I: 18,543 acres: 4 % Class II.: 247,376 acres: 58% Class III: 136,946 acres: 32% Class IV: 25,561 acres: 6% Total: 428,425 acres: 100%. See Map 2-4	VRM classifications by acreage in the Decision Area: Class I: 18,543 acres: 4 % Class II: 247,495 acres: 58% Class III: 159,689 acres: 37% Class IV: 2,698 acres: 1% Total: 428,425 acres: 100% See Map 2-5	Same as Alternative 4 See Map 2-5
Management Actions						
MA 1	Activities that will result in significant, long-term, adverse effects in areas of high visual quality such as the Burnt River, Powder River, or Snake River (canyons) will not be permitted. Activities within other areas of high visual	The BLM would adhere to VRM classifications (see maps 2.2 - 2.5 for classifications.)				

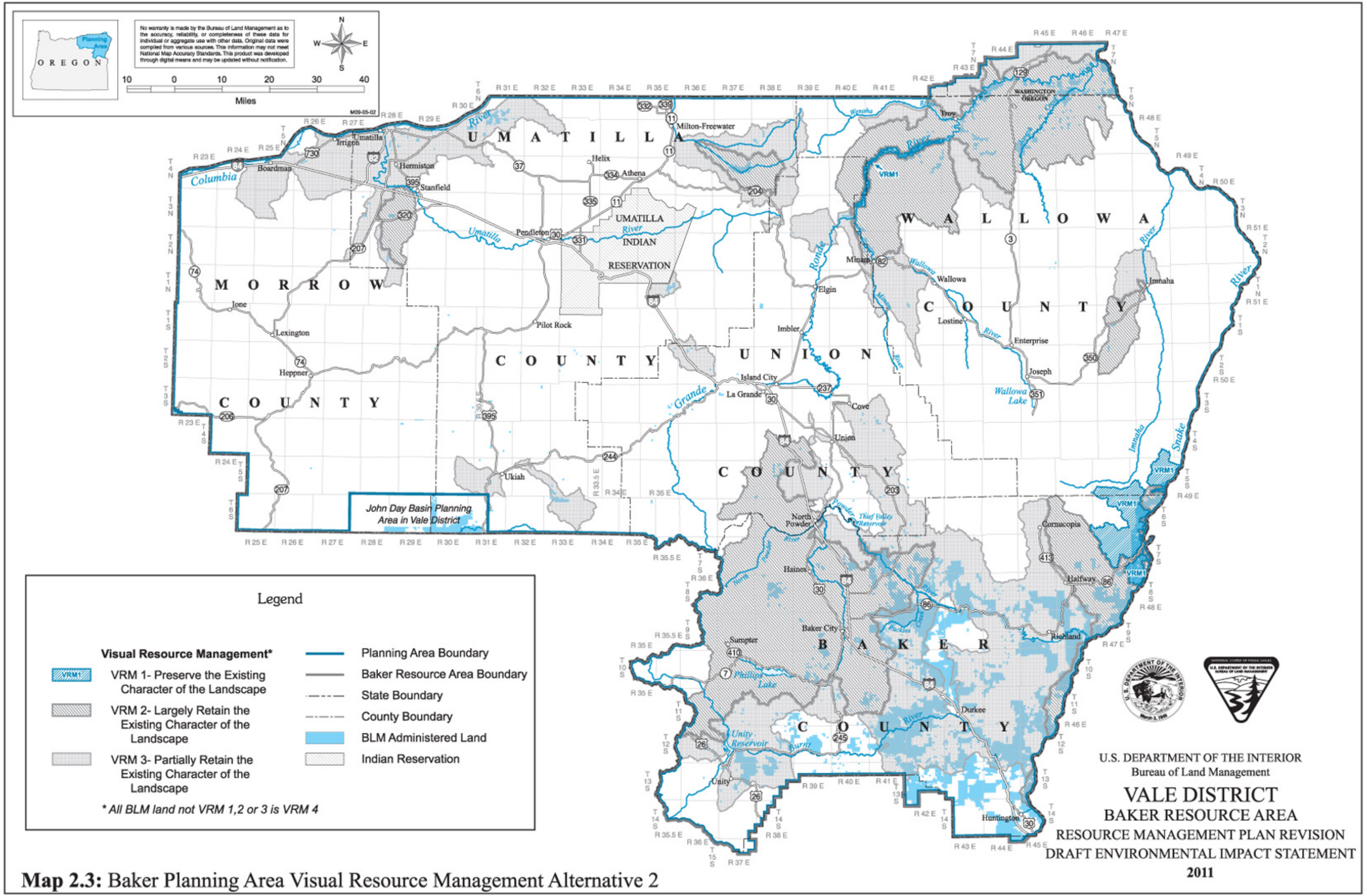
Table 2-14. Visual Resources						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	quality that may be seen might be permitted if they do not attract the attention or leave long-term visual changes on the land. Activities in other areas may change the landscape but will be designed to minimize any adverse effects on visual quality.					
MA 2	Although no VRM Class I areas were identified from previous inventories, lands in the McGraw Creek Wilderness Area are managed as VRM Class I lands. Lands within river corridors on the Grande Ronde and Powder WSRs will be inventoried and classified appropriately for the protection of high scenic values.	The BLM would adhere to VRM classifications currently identified for these special areas (see Map 2-2 to Map 2-5 for classifications).				
Monitoring						
Mon. 1		The BLM would engage in the following monitoring actions as required by BLM Manual direction: Project review and compliance with VRM classes would occur on a case-by-case basis as projects are proposed or issues arise. Ocular surveillance of visual resources would occur while staff performs routine patrols of public lands. Pre- and post-project monitoring would occur as projects or issues develop.				



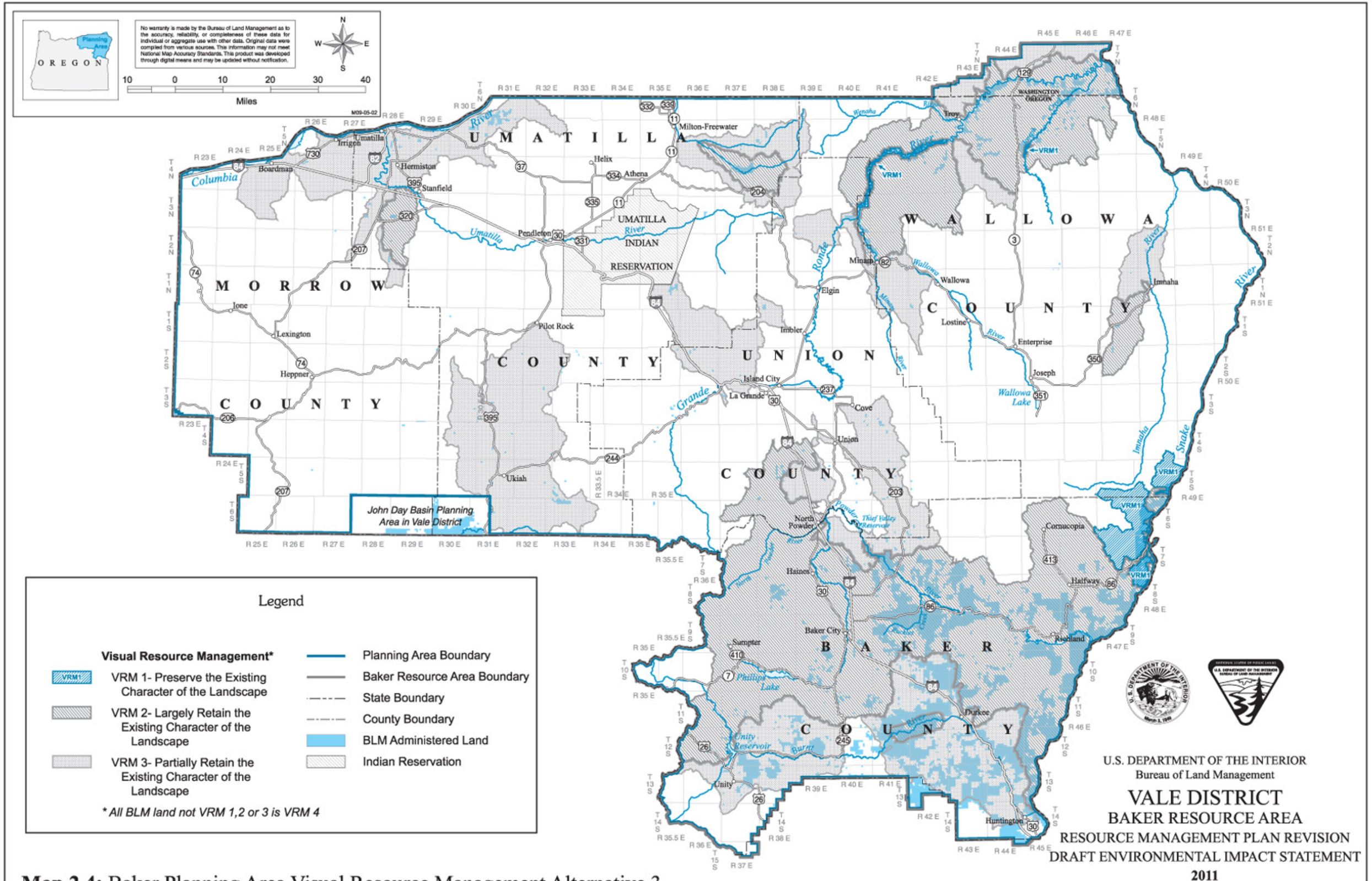
Map 2.1: Baker Planning Area Visual Resource Management No Action Alternative



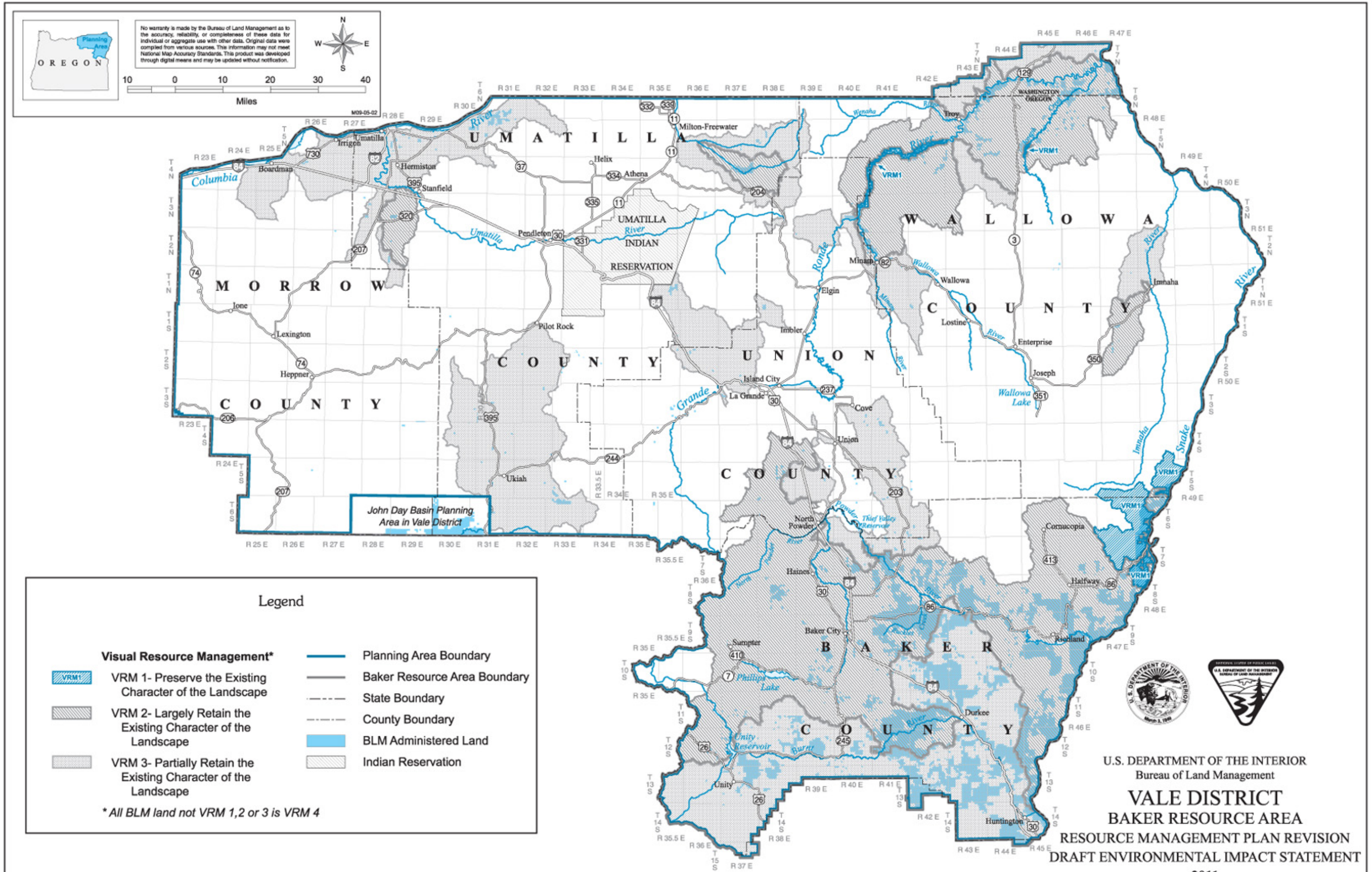
Map 2.2: Baker Planning Area Visual Resource Management Alternative 1



Map 2.3: Baker Planning Area Visual Resource Management Alternative 2



Map 2.4: Baker Planning Area Visual Resource Management Alternative 3



Map 2.5: Baker Planning Area Visual Resource Management Alternatives 4 and 5

Table 2-15. Lands with Wilderness Characteristics						
	No Action Alternative*	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	Determine which lands identified as having wilderness characteristics would be managed to protect wilderness characteristics.					
Goal 2	If future land tenure adjustments or other situations create areas that meet minimum criteria of size, identify those areas for consideration and determination of wilderness characteristics.					
Obj. 1	Provide no protective measures specific to lands with wilderness characteristics, including restrictions on future ROWs or other activities in the identified areas adjacent to the Homestead and McGraw Creek WSAs, as well as the USFS "potential" wilderness areas.	Protect all ten public land areas found to possess wilderness characteristics (i.e. size, naturalness, and outstanding opportunities for primitive and unconfined recreation or solitude).	Same as No Action	Same as Alternative 1		
	Management Actions					
MA 1	The BLM would not provide any special protection to identified lands with wilderness characteristics.	The BLM would protect the lands currently identified as having wilderness characteristics including those adjacent to Homestead WSA (1,942 acres) and McGraw Creek WSA (1,210 acres). In addition, for current management compatibility, the BLM would also protect identified lands with wilderness characteristics contiguous to USFS potential wilderness	Same as No Action	Same as Alternative 1		

Table 2-15. Lands with Wilderness Characteristics

	No Action Alternative*	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		areas, which include the following: Twin Mountain (USFS 55,783 / BLM 2,630) South Fork Tower (USFS 15,826/BLM 548) North Mount Emily (USFS 5,501/BLM 200) Walla Walla River (USFS 33,859/BLM 623) Grande Ronde (USFS 23,394/BLM 3,156) Joseph Creek (USFS 6,750/BLM 2,189) Dead Horse (USFS 17,808/BLM 214) Little Creek (USFS 2,812/BLM 283) See Map 3-6 (on CD)				
MA 2	The BLM would not subject identified lands with wilderness characteristics to restrictions on ROWs or other potential land disturbing activities. This would include the lands with wilderness characteristics adjacent to Homestead and	The BLM would implement the following protective measures on identified lands with wilderness characteristics: VRM Class II designation, ROW exclusion area, OHV Closed or Limited designations(see MA 4 below), closed or no	Same as No Action	Same as Alternative 1, except that lands with wilderness characteristics would be ROW avoidance areas instead of ROW exclusion areas.	Same as Alternative 1	

Table 2-15. Lands with Wilderness Characteristics

	No Action Alternative*	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	McGraw Creek WSAs, as well as those lands with wilderness characteristics associated with the USFS potential wilderness areas.	surface occupancy for leasable minerals, closed to mineral material sales, retention zone for land tenure, no new road developments and exclusion of certain commercial permits such as forestry and woodland products, decorative stone or other permits that could impact characteristics				
MA 3	The BLM would allow ROWs and/or developments in lands with wilderness characteristics.	The BLM would exclude ROWs and/or incompatible developments in lands with wilderness characteristics	Same as No Action	The BLM would identify lands with wilderness characteristics as ROW avoidance areas and would only allow ROWs and/or developments that are compatible with lands with wilderness characteristics. The BLM would not authorize surface occupancy.	Same as Alternative 1	
MA 4	The BLM would limit motorized and mechanized access to designated routes in the lands with wilderness characteristics adjacent to Homestead and	The BLM would limit motorized and mechanized uses to designated routes in the lands with wilderness characteristics adjacent to Homestead WSA, as	Same as No Action	The BLM would limit motorized and mechanized access to designated routes in the lands with wilderness characteristics adjacent to Homestead and	The BLM would close the lands with wilderness characteristics adjacent to Homestead and McGraw WSAs, as well as those lands with wilderness characteristics associated with the USFS potential wilderness areas to all motorized use and limit mechanized use to designated routes.	

Table 2-15. Lands with Wilderness Characteristics						
	No Action Alternative*	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	McGraw Creek WSAs, as well as those lands with wilderness characteristics associated with the USFS potential wilderness areas.	well as those adjacent to the following USFS potential wilderness areas: North Mount Emily, Grande Ronde River, South Fork Tower, and the Walla Walla. The BLM would close motorized access and limit mechanized access to designated routes in the lands with wilderness characteristics adjacent to McGraw Creek WSA and the following potential wilderness areas on USFS land: Dead Horse, Joseph Creek, Twin Mountain, and Little Creek.		McGraw Creek WSAs, as well as those lands with wilderness characteristics associated with the USFS potential wilderness areas.		
MA 5	The BLM would not restrict proposed projects and uses for wilderness characteristics protection purposes.	The BLM would evaluate proposed projects and uses in lands with wilderness characteristics on a case-by-case basis to ensure that impacts do not degrade wilderness characteristics.	Same as No Action	Same as Alternative 1		

Table 2-16. Facilities					
*	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	Maintain all facilities and use areas at levels appropriate for public safety, convenience and access				
Obj. 1	Identify and, where feasible, improve facilities in areas where use is consistent and demands dictate such improvements or where required to promote resource protection.	Identify and, where feasible, improve facilities in areas where use is consistent and demands dictate such improvements or where required to promote commodity and economic benefits.	Identify and, where feasible, improve facilities in areas where use is consistent and demands dictate such improvements or where required to provide for recreation activities and information/education.	Same as Alternative 1	
Management Actions					
MA 1	The BLM would assess the need to build, improve, and/or develop facilities based on public and administrative demands.	The BLM would build, improve, and/or develop facilities to encourage economic attractiveness and facilitate revenue generation.	The BLM would build, improve, and/or develop facilities to encourage recreational attractiveness and knowledge of recreational opportunities.	Same as Alternative 1	
MA 2	The BLM would continue to implement the NHOTIC management plan and revise it to meet public demands and facility designs.	The BLM would continue to implement the NHOTIC management plan to meet public demands and facility designs while emphasizing direct or indirect opportunities for commercial activities.	The BLM would continue to implement the NHOTIC management plan to meet public demands and facility designs while emphasizing direct or indirect opportunities for recreational activities.	Same as Alternative 1	
**The No Action Alternative proposes no management direction for facilities.*					

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	Harvest approximately 24,000 MBF of timber in a 10-year period from a commercial forestland base of 25,353 acres.	Manage approximately 36,738 acres of forests and non-juniper woodlands to sustain or restore their health and long-term productivity, while reducing fuel loads and contributing to the fiber needs of current and future generations.				Same as Alternatives 1-4, except do not consider fiber production.
Obj. 1	Highest priority has been assigned to areas with the greatest concentrations of commercial timberland and where conflicts with other uses are anticipated. Areas of concern to adjacent property owners and areas of known public interest are also assigned higher priority.	Treat approximately 5,000 acres per decade of forest and woodland stands with an emphasis on restoring pre-fire suppression forest structures and improving overall tree vigor. The volume of wood products produced would be commensurate with pre-treatment stocking of the stands (see Table 2-18).	Treat approximately 5,000 acres per decade of forest and woodland stands with an emphasis on maximizing the yield of forest products through commercial timber harvest and ensuring a future sustained yield through intensive silvicultural practices (see Table 2-18).	Same as Alternative 1	Treat approximately 7,500 acres per decade of forest and woodland stands with an emphasis on restoring pre-fire suppression forest structures and improving overall tree vigor. Select treatment areas based on their benefit to overall watershed and landscape values (e.g., wildlife habitat structure and connectivity, water quality, and soil conservation). The volume of wood products produced would vary depending on the pre-treatment stocking of the stands being treated and the desired post-treatment stocking. Table 2-18 provides an example of average volumes that would be anticipated.	Treat approximately 2,500 acres per decade of forest and woodland stands with an emphasis on restoring pre-fire suppression forest structures and improving overall tree vigor. Use only noncommercial methods such as pre-commercial thinning and prescribed fire and no commercial wood products would result from treatments (see Table 2-18).

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Management Actions						
MA 1	Silvicultural practices must be used that best meet the management goals and related land use prescriptions and assure prompt regeneration of the forest. Selection cutting, shelterwood cutting, clear-cutting, or their various modifications are available options.	In warm/dry forest types, the BLM would manage for predominately ponderosa pine with silvicultural systems that would focus on thinning from below. In cool/dry forest types, the BLM would manage for a greater degree of Douglas-fir by utilizing silvicultural systems that would focus on thinning from below. In cool/wet forest types, the BLM would focus management more on sustaining mixed conifer stands with a diversity of species and size classes by utilizing uneven-aged management and thinning all layers of the canopy. The BLM would only allow the use of clear-cutting in lodgepole pine forests where the intent	Regardless of forest type, in scattered forest parcels less than 80 acres in size, the BLM would focus on silvicultural system methods that maximize timber yield. These would include shelterwood, seed tree, overstory removal, and thinning from above. The BLM would only allow the use of clear-cutting in lodgepole pine forests where the intent is to regenerate a new stand of lodgepole, as small patch cuts to create openings for wildlife, or during sanitation and/or salvage operations. Regardless of forest type, in scattered forest parcels greater than 80 acres and large, contiguous blocks of forestland, the BLM would use silvicultural systems that focus on thinning from above and	Same as Alternative 1		The BLM would only allow the thinning of pre-commercial size material (generally < 8" diameter breast height), and retain all intermediate and co-dominant size class trees, regardless of species.

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		is to regenerate a new stand of lodgepole, as small patch cuts to create openings for wildlife, or during sanitation and/or salvage operations.	below. The resulting forest structure would be uneven aged, with an emphasis on maximizing present and future timber yields. For all silvicultural prescriptions except clear-cutting, the BLM would emphasize retaining trees that have the best form, are healthy, and are early-serial species.			
MA 2	Each sale plan must include plans for prompt reforestation of the sale area after completion of the timber harvest operation by natural or artificial means.	The BLM would apply thinning prescriptions to remove trees in excess of prescribed stocking levels. The residual stands would be stocked at levels that promote tree growth and reduce the risk of infestation by insects and disease. The BLM would base residual tree stocking on stocking guides as described for the Umatilla National Forest (USFS 1999) or other current stocking guides that would correlate to	Stocking of forest stands would be insured in the same manner as Alternative 1, except that the BLM may also require artificial regeneration more frequently (i.e., tree planting) to supplement natural regeneration following seed tree or shelterwood prescriptions.	Same as Alternative 1		Residual tree stocking would depend on the number of larger trees in the intermediate, co-dominant, and dominant size classes present in the stand at the time of treatment, as the BLM would exempt most trees in these size classes from cutting. The BLM would only use artificial regeneration methods to restock stands following stand-replacing events such as wildfire or insect and disease epidemics.

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		the site's plant association. The BLM would use artificial regeneration methods (i.e., tree planting) where natural regeneration methods have been ineffective, or to restock stands following sanitation or salvage harvesting (see MA 10, 11, and 12).				
MA 3	Provide evenly distributed wildlife trees and snags for cavity dwellers on managed forestlands without creating logging safety hazards and without violating the decisions on which the allowable cut plan is based. Maximum use should be made of existing withdrawals to manage snags.	The BLM would ensure that snags, down woody debris, and green tree retention would provide for current and future snag and down woody debris needs as described in Table 2-10. Wildlife, MAs 31-38.				
MA 4	Pre-commercial thinning and other cultural practices, will be performed, as funding permits, to maintain the allowable cut and to benefit other resources,	In immature stands, the BLM would conduct pre-commercial thinning operations to improve overall tree vigor and accelerate the process of stand development.				

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	particularly wildlife and watershed values.					
MA 5	The BLM would issue special forest product (SFP) permits commensurate with public demands and resource management objectives. The BLM would make available SFP permits where the public finds SFPs within the Decision Area (e.g., an isolated dead tree to harvest for firewood). In rare instances, the BLM may direct the public to areas where a concentration of SFPs are available for harvest (e.g., an area with many standing or down dead trees that resulted from a fire or insect infestation).					
Obj. 2	N/A	Manage forests to maintain populations of insects and diseases at endemic levels.				
Management Actions						
MA 6	N/A	To reduce susceptibility to infestation or infection, the BLM would ensure that forests are thinned to appropriate stocking levels as described for the Umatilla National Forest (USFS 1999) or other appropriate stocking guide to improve tree vigor.				Regardless of the effects of forest insects and diseases, the BLM would manage forest stocking as described in MA 4.
MA 7	N/A	The BLM would prescribe sanitation harvest to remove infected/infested trees in areas of outbreaks. For these actions, silvicultural systems would generally be singletree or group selection in most forest types. All non-host and unaffected host trees would be retained during sanitation harvests. An exception to this approach would be in lodgepole pine infested with mountain pine	The BLM would prescribe sanitation harvest to remove infected/infested trees and non-symptomatic host species in areas of outbreaks. Silvicultural systems would generally be patch, entire stand clear-cuts, or shelter-wood harvests that retain non-host species.	Same as Alternative 1		The BLM would not allow the harvesting, sanitation or otherwise.

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		beetle. These infestations often result in nearly every tree in the stand being attacked. As discussed in Chapter 3, fire is needed to regenerate these stands; however, lodgepole is thin-barked and cannot tolerate fire, so the ability to retain any surviving green trees would be unlikely. If the stand contains another species, such as Douglas-fir, these trees could be retained; otherwise, patch or entire stand clear-cutting would be prescribed.				
MA 8	N/A	The BLM would allow the salvage of trees killed in outbreaks to reduce fuel accumulations and to recoup the highest financial return possible, while providing jobs and wood products for the economy. Green trees that survived and the numbers and sizes (if available) of snags and down woody debris	When feasible, the BLM would allow the salvage of fire.	Same as Alternative 1		The BLM would not allow the harvesting of trees, salvage or otherwise, in the Decision Area.

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		described in Wildlife MAs 31 to 38 (Table 2-10) would be retained. As described in MA 7, salvage in lodgepole pine stands would likely be an exception to the green tree and/or snag retention guidelines.				
MA 9	N/A	When feasible, the BLM would allow the salvage of fire-killed trees by the end of the first summer following a fire to prevent the standing dead trees from developing bark beetle infestations, to reduce fuel accumulations, and to recoup the highest financial return possible while providing jobs and wood products for the economy. All green trees that survived and the recommended numbers and sizes (if available) of snags and down woody debris per acre (see Wildlife Management Actions 31 to 38) would be retained. As described in MA 7, salvage in lodgepole pine stands would likely be an exception to the green tree and/or snag retention guidelines.				When feasible, the BLM would allow the salvage of fire
Obj. 3	N/A	Continue to support the local forest products industry.				Support local forestry employment through activities such as pre-commercial trimming (PCT), fuels clean up, piling, and prescribed burning.
Management Actions						
MA 10	Approximately 37,273 acres of woodlands will be managed to produce an estimated 10-year harvest of posts, poles and other woodland products equivalent to approximately 9,800 cords. Activity would be concentrated in areas	The BLM would offer for sale all commercially viable forest products (saw and chip logs) that result from forest management actions.				The BLM would not offer for sale any commercial forest products from the Decision Area.

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	where cutting would benefit other resources.					
MA 11	Harvest approximately 24,000 MBF of timber in a 10-year period from a commercial forestland base of 25,353 acres. If the results of a recent forest inventory, or any subsequent inventories, indicate a change in annual productivity, this sustainable harvest level would be adjusted accordingly.	The BLM would prescribe forest health activities intended to yield an average PSQ of 5,000 MBF to 10,000 MBF per decade (see Table 2-18).	The BLM would prescribe intensive timber management activities intended to yield an average PSQ in excess of 10,000 MBF to 25,000 MBF per decade (see Table 2-18).	Same as Alternative 1	The BLM would prescribe forest health activities intended to yield an average PSQ of 5,000 MBF to 12,500 MBF per decade (Table 2-18).	The absence of any prescribed BLM commercial harvest would result in no PSQ (see Table 2-18).
MA 12	Exclude timber harvest on approximately 3,304 acres that are economically non-operable and on 673 acres that are within ACECs. This area will contribute to the need for old-growth habitat	The BLM would exclude all forest management activities in WSAs. The BLM would allow management activities that would preserve or enhance the values found in ACECs.				
MA 13	Adjust intensity of management for timber production on 25,353 acres to accommodate other significant resources. Restrict harvest on 3,914 acres to emphasize important wildlife, watershed, riparian, and	During all forest management activities, the BLM would consider potential impacts to all resources and apply mitigation measures and BMPs to protect resource values and mitigate detrimental impacts (see Appendix 2.1).				

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	recreational values. This includes approximately 1,300 acres that will be maintained in stands containing all timber age classes to improve old-growth distribution for wildlife. Even-aged management would generally be practiced on the remaining 21,439 acres through the use of clear-cutting or shelter-wood harvest systems. About 4,000 acres of suitable woodlands would be excluded from harvest to protect mule deer winter range					
MA 14	N/A	Where a treatment area is accessible to the public, or utilization as biomass is economically viable, the BLM would offer for sale forest treatment residues such as slash, cull material, and PCT slash as secondary wood products or as biomass. When residues cannot be utilized, the BLM would burn them in	The BLM would make efforts, including subsidizing haul costs to utilization centers, to utilize forest treatment residues for secondary wood products or as biomass. When residues cannot be utilized, the BLM would burn them in accordance with management objectives.	Same as Alternative 1, except that when sales are not accessible or viable, the BLM would burn slash piles within one to three years of completing forest treatments to reduce visual intrusions.	Same as Alternative 1	The BLM would not allow harvesting of any commercial forest products.

Table 2-17: Forestry and Woodland Products						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		accordance with fuels management objectives.				
Monitoring						
Mon. 1	Established forestry activity monitoring and mitigation programs include close supervision of active timber sale and land treatment contracts and regular follow-up surveys of affected areas. Other agencies also provide periodic information relevant to monitoring such as progress of insect or disease activity and water and air quality.	The BLM would monitor forest management activities to ensure compliance with corresponding NEPA analysis, regulatory requirements, mitigation measures, and contract stipulations. These actions would include: The BLM would conduct timber sale contract administration visits on regular intervals (weekly minimum) while active logging is in progress. The BLM would conduct stewardship and service contract administration visits at regular intervals (weekly minimum) during periods of contractor activity. The BLM would conduct five-year artificial regeneration survival surveys on all sites where trees are planted. Where forest management actions occur within threatened and endangered species habitat, the BLM would require monitoring during implementation and most likely following implementation. The BLM would conduct periodic post-implementation monitoring to ensure management objectives have been achieved in treatment areas. The BLM would monitor general forest condition to ensure forest health is being sustained, or is on an upward trend. Problem areas detected during monitoring would receive priority treatment. These actions would include the following: The BLM would conduct extensive aerial forest monitoring in partnership with the USFS on a yearly basis to provide an early detection mechanism for outbreaks of forest insects and diseases. The BLM would conduct site-specific forest health monitoring in partnership with the USFS Blue Mountain Pest Management Service Center.				

Table 2-18: Proposed Sale Quantity and Treatment Acres Calculation Table

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Treatment Acres	500 acres	500 acres	Same as Alternative 1	750 acres	250 acres
PSQ in MBF	500 – 1,000	1,000 – 2,500	Same as Alternative 1	500 – 1,250	0
Assumed Acres of Treatment Type	200 acres PCT/ Prescribed Fire	200 acres PCT	Same as Alternative 1	350 acres PCT/ Prescribed Fire	250 acres PCT/ Prescribed Fire
	300 acres CT	300 acres Heavy Cutting	Same as Alternative 1	400 acres CT	0
PSQ Calculation Low	500 MBF/300 acres = 1.7 MBF per acre	1,000 MBF/300 acres = 3.3 MBF per acre	Same as Alternative 1	500 MBF/400 acres = 1.25 MBF per acre	N/A
PSQ Calculation High	1,000 MBF/300 acres = 3.3 MBF per acre	2,500 MBF/300 acres = 8.3 MBF per acre	Same as Alternative 1	1,250 MBF/400 acres = 3.1 MBF per acre	N/A
PSQ Per Acre Average	2.5 MBF per acre	5.8 MBF per acre	Same as Alternative 1	2.2 MBF per acre	N/A

Note: All alternatives assume continued availability of SFPs (e.g., firewood, posts, and poles). In all alternatives, the BLM assumes that some years would have no new management proposed, while other years may have more than the figures presented. These figures are averaged over a decade, are assumptions for analytical purposes only, and do not infer a minimum or maximum on either a yearly or decadal basis.

Alternative 1 is based on Baker's present day level of activity and management philosophy of trying to balance the need for yield of wood products with the need for restoring forest structure and reintroducing fire to the landscape.

Alternative 2 focuses on increasing, but not quite maximizing, timber yield and forest development to ensure a perpetual high yield. The figures assume an average of 300 acres per year to be intensively harvested. When divided into the current Baker RMP (BLM 1989) figure of 25,383 acres of commercial forestland, this practice could continue for 84 years until all lands have been harvested. Since this RMP will not distinguish between commercial forest and woodlands, the harvest base becomes significantly larger when the woodlands are added. Based on a 100-year average rotation, this alternative would be perpetually sustainable. The BLM derived the PSQ range in Alternative 2 by considering the average yearly harvest from the 40-year period between 1950 and 1990, which was 2,950 MBF per year. This figure is a bit high considering that most of the high volume old growth timber is gone. This 40-year average was further tempered due the fact that not all of the Decision Area's forests are as productive as some of the stands harvested in the past, and that the highest yield silvicultural methods such as seed tree and shelter wood are only proposed in forested blocks of 80 acres or less (clear-cutting is not proposed). The larger blocks of contiguous forest would be thinned from above and below, yielding less volume per acre. Thus, the mix of forest types and silvicultural methods would result in a wide-ranging yield that in some years could approach the allowable cut proposed in the current Baker RMP (BLM 1989) of 2,400 MBF; however, in most years, it would not.

Alternative 3 assumes the same level of forest management as Alternative 1, but the BLM would place more emphasis on reducing visual intrusions and impacts to recreational opportunities. This would include actions such as roadside visual buffers and avoiding treatments in visually sensitive or known popular recreation areas.

Alternative 4 focuses on restoration of historic forest structures. Under this alternative, the BLM would treat the largest number of acres per year to expedite restoration. It is similar to Alternative 1 in the sense that wood products would be derived as a by-product resulting from restorative activities. While Alternative 4 places less emphasis on yield, the increased treatment acres could actually result in a higher yearly harvest, but at a lesser amount per acre treated.

Alternative 5 assumes no timber harvesting would occur, and, therefore, there is no PSQ.

Table 2-19. Livestock Grazing

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Goal 1	N/A	Authorize livestock grazing to maintain or improve rangeland health consistent with other resource goals and public land use allocations while contributing to a sustainable local livestock industry.			**Alternatives 4 & 5:** Authorize livestock grazing where consistent with maintaining or improving rangeland health, but allow other resource goals and public land use allocations to take precedence over livestock grazing in certain areas. **Alternative 5a:** Do not authorize livestock grazing.	
Obj. 1	N/A	Allocate range forage for livestock to achieve proper grazing use while meeting multiple resource objectives.			**Alternatives 4 & 5:** Allocate range forage for livestock to achieve proper grazing use while ensuring there is less grazing or no grazing in certain areas in order to benefit other resources and other land uses. **Alternative 5a**: Do not allocate range forage for livestock grazing.	
Obj. 2	N/A	Allow flexibility to deal with weather variations and adapt timing of grazing to achieve both upland and riparian management objectives.			**Alternatives 4 & 5:** Restrict grazing to only the permitted grazing use periods at all times and under all circumstances. **Alternative 5a:** N/A	
Land Use Allocations						
LUA 1	In the Current Baker RMP (BLM 1989), the BLM authorized grazing on 418,601 acres, with grazing preference of 55,437 active AUMs. Since 1989, changes have been made in land ownership, jurisdiction, and AUMs allotted. As a result, 388,510 acres	The BLM would authorize grazing on approximately 388,310 acres. Initial grazing preference would be approximately 47,000 AUMs, changing to an estimated (for analytical purposes only) 41,500 AUMs with full implementation of the	The BLM would authorize grazing on approximately 396,210 acres. Initial grazing preference would be approximately 47,000 AUMs, changing to an estimated (for analytical purposes only) 47,350 AUMs with full implementation of the	The BLM would authorize grazing on approximately 380,165 acres. Initial grazing preference would be approximately 46,320 AUMs, changing to an estimated (for analytical purposes only) 35,500 AUMs with full implementation of the	The BLM would authorize grazing on approximately 334,260 acres. Initial grazing preference would be approximately 42,150 AUMs, changing to an estimated (for analytical purposes only) 30,700 AUMs with full implementation of the	**Alternative 5**: The BLM would authorize grazing on approximately 263,915 acres. Initial grazing preference would be approximately 35,760 AUMs, changing to an estimated (for analytical purposes only) 22,500 AUMs with full implementation of the

Table 2-19. Livestock Grazing

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	are currently authorized for grazing, with preference of 47,000 AUMs. Areas unavailable for grazing are identified in Table 2-20. .	RMP. All currently grazed allotments would remain available for grazing. Areas unavailable for grazing are identified in Table 2-20.	RMP. All currently grazed allotments would remain available for grazing. Additional areas of currently unallocated public lands that would be available to grazing are identified in Table 2-20. These would require issuing new grazing permits to qualified applicants.	RMP. Allotments currently grazed that would no longer be available for grazing are identified in Table 2-20.	RMP. Allotments currently grazed that would no longer be grazed are identified in Table 2-20.	RMP. No allotments with 303(d) streams (water quality impaired streams) and identified in Table 2-20 would be available for grazing. **Alternative 5a:** The BLM would close all allotments that are currently available to grazing when current permits expire.
LUA 2	Continue to authorize grazing permits/leases for approximately 55,000 AUMs on 374 allotment/lease areas for livestock grazing. The level of authorized grazing will depend on future requirements of the associated resources for the land, including disposal, acreage being grazed and the results of monitoring.	**Alternatives 1 - 5:** The BLM would maintain grazing levels established under LUA unless evaluation reports or allotment evaluations identify a need for adjustments to meet management objectives or requirements under 43 CFR 4180.2(c). The BLM would use evaluation reports to determine needed changes on an allotment-specific basis. Where changes could be needed, allotment use or open/closed status can be changed without further amendment of the RMP. **Alternative 5a:** N/A				
LUA 3	N/A	The BLM would include lands acquired within the Sutton Creek (Allotment #3026) and Swede's Landing (Allotment #5321) areas	The BLM would make lands acquired since 1989 that are within grazing allotments #3026, #5321, #6517, #6548, #6572, and	Same as Alternative 1	Same as Alternative 1, except that the BLM would not allow any grazing on lands acquired since 1989 that are now within the	**Alternative 5:** Same as Alternative 1 **Alternative 5a:** N/A

Table 2-19. Livestock Grazing						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		within the term permits for the surrounding allotments. On all other lands acquired since 1989, the BLM would only authorize grazing when needed to meet resource objectives through temporary use. This includes acquired lands in Allotments #6517, #6572, #6594, and #6548.	#6594 available for inclusion in the existing grazing permits/leases, with terms and conditions to protect the values for which the lands were acquired (e.g., ACECs, WSRs, and to protect ESA listed species). The BLM would not make other lands acquired between 1989 and 2009 available for grazing.		Grande Ronde ACEC administrative boundaries. The BLM would cancel the portion of leases that are within the Grande Ronde and Joseph Creek ACECs.	
LUA 4	All lands suitable for grazing upon which grazing is not currently authorized will be considered for authorization upon receipt of an application.	**Alternatives 1 - 5:** The BLM may include in grazing allotments newly acquired lands and public lands not currently allocated for livestock grazing or covered by Livestock Grazing LUA 3 and may authorize grazing if it is compatible with other resources and uses. Where new allotments are created or new land is added to current allotments, the BLM can change allotment use status without further amendment of the RMP. **Alternative 5a**: N/A				
Management Actions						
MA 1	Continue with categorization (M, I, C) of all livestock grazing allotments and lease areas. As rangeland conditions and objectives change and other resource uses develop, allotments will be shifted from one category to another and plan updates will show the changes.					
MA 2	Protect relict vegetation areas identified by the NRCS.					
MA 3	N/A			The BLM would not authorize livestock grazing in I and M-category allotments from September 1 to November 30 to reduce conflicts between grazing and big game hunting. The BLM	N/A	

Table 2-19. Livestock Grazing						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
				could still authorize grazing in seedings or annual grass-dominated pastures, or temporary nonrenewable grazing for vegetation management during the hunting season.		
MA 4	N/A	The BLM could authorize grazing within riparian exclosures if it could be accomplished and still meet the site-specific exclosure resource objectives.			**Alternative 5:** The BLM would keep riparian exclosures ungrazed and remove them from the permit/lease. **Alternative 5a**: N/A	
MA 5	N/A	The BLM may authorize temporary nonrenewable grazing use to utilize additional production when conditions warrant in high-rainfall years. This would be conditional upon meeting other management objectives, including objectives for special status species habitat. Utilization limits would apply, the use could not occur during critical plant growth periods (e.g., the use would be after the key perennial grass species had completed seed production), and the basic seasons of use would be unchanged from what was already authorized for the year (e.g., fall use).		**Alternatives 3 - 5:** The BLM would authorize temporary nonrenewable grazing use only as a tool to implement specific vegetation treatments or for trailing through. **Alternative 5a**: The BLM would not authorize temporary nonrenewable grazing use.		
MA 6	N/A	**Alternatives 1 - 5:** Where the BLM determines that reductions in AUMs are necessary, the criteria listed in Appendix 2.5 (Procedures for Calculating Carrying Capacity) would be utilized. **Alternative 5a**: N/A				
See Table 2-11. Special Status Species (Wildlife) MA 14 for restrictions on domestic sheep and goat grazing near an established bighorn sheep breeding population.						
MA 7	N/A	The BLM would handle voluntary relinquishments of grazing permits and preference, in whole or in part, submitted by a permittee in writing to the BLM on a case-by-case basis. The BLM would follow the process for			**Alternatives 4 & 5**: The BLM would handle voluntary relinquishments as identified under Alternatives 1-3, except that the acquired grazing	

Table 2-19. Livestock Grazing

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		relinquishment of preference (see Appendix 2.6).			capacity would have to be allocated to other resource uses as described in Appendix 2.6, Option 4(d), if the allotment contains SMAs. **Alternative 5a**: N/A	
MA 8	Continue approved grazing management systems and implementing allotment management plans and implement new plans where needed.	**Alternatives 1 - 5**: The BLM would develop or AMPs or other activity plans where needed to meet rangeland health standards, follow guidelines for livestock grazing, and meet other resource objectives. **Alternative 5a**: N/A				
MA 9	Restrict livestock grazing through seasons of use, levels of utilization, and/or livestock numbers and distribution. Monitor and evaluate grazing systems and adjust the systems and stocking levels as appropriate to achieve or maintain the upland vegetation objective. Continue to restrict and exclude grazing in areas where the livestock grazing results in significant resource damage.	Where livestock grazing is determined to be a significant factor in failure to achieve rangeland health standards, the BLM would require grazing adjustments through periods of use, grazing systems, rest periods, range improvement projects, or AUMs permitted. The BLM would schedule evaluation reports for I-category allotments for every 5 years. In cases where two consecutive evaluations indicate standards are not met and trend is not upward or objectives have not been achieved (after	Same as Alternative 1, except that the grazing adjustments would be through periods of use, grazing systems, rest periods, range improvement projects, and AUMs permitted. Rest periods would be discretionary instead of mandatory.	Same as Alternative 1, except that the BLM would also require the removal or reduction of grazing in areas of high recreational value if there are persistent conflicts with recreational users.	**Alternative 4 & 5**: Same as Alternative 1, except that instead of a 5-year rest period, the BLM would not authorize grazing in that pasture for the life of the RMP, unless a specific amendment was completed. **Alternative 5a**: N/A	

Table 2-19. Livestock Grazing

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		appropriate actions to change grazing had already been taken after the previous evaluation), a mandatory 5-year rest period would be given to a pasture (or in some instances, a stream could be fenced to achieve the required rest from grazing). The BLM would require the 5-year rest for the pasture if it meets all three conditions in the table below.				
	Factors/conditions which must be met before mandating rest or cessation from grazing after two consecutive evaluations have shown insufficient progress toward attainment of standards and objectives (Alternatives 1, 3, 4, and 5) **Factor** — **Conditions Required to Implement Mandatory Rest Treatment** Percent public lands in the pasture — 1. Over 50% public lands Vegetation in the pasture — 2. Predominantly native vegetation, or contains riparian vegetation. Wheatgrass seedings would not be rested unless fencing the riparian zone in the seeding is not feasible. Resource conflicts — 3. Any of the following resource conflicts are present: Water quality: 303(d) listed stream or its tributaries (livestock part of cause). Special status species habitat. Special management areas (e.g., WSAs, ACECs, and WSRs). High recreational, cultural, or wildlife values are identified in the evaluation or determination documents pertaining to that specific allotment. Site potential for greater establishment of woody species along riparian zones. .					
MA 10	N/A	Where rangeland health standards are met, the BLM would use monitoring data and evaluations to address whether increases in grazing use (or			**Alternatives 4 & 5**: The BLM would not consider increases in grazing use.	

Table 2-19. Livestock Grazing						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		lengthened periods of use) are justified.			**Alternative 5a**: N/A	
MA 11	Allow rangeland users to develop range improvement projects as long as they are consistent with BLM objectives and are subject to environmental analysis and approval by the BLM. Construct range improvements where needed to achieve the mid-seral plant community objective.	**Alternatives 1 - 5:** The BLM would allow development or modifications of range improvement projects as long as they are consistent with resource objectives and are subject to environmental analysis and approval by the BLM. The BLM would consult BMPs for Livestock Grazing (see Appendix 2.1) when planning construction of range improvements. Wherever grazing is eliminated, the BLM would evaluate existing range improvements to determine whether they are still needed. **Alternative 5a**: N/A				
MA 12	Livestock grazing will not be allowed on areas where vegetation manipulation occurs. Livestock will be deferred either by fencing treated areas, or by resting the treated pasture for 2 to 5 growing seasons (that is, if a pasture is rested for 3 growing seasons, cattle use would not be allowed until fall of the third year).	**Alternatives 1 - 5:** Where fire or vegetation manipulation occurs, the BLM would rest the burned or treated areas from grazing until site-specific rehabilitation objectives (confirmed through monitoring and documented in a brief report of the monitoring results) are achieved. Exceptions would be allowable when less than 50 acres of the livestock-suitable land in the pasture is affected and fencing it separately is not feasible. **Alternative 5a**: N/A				
See Table 2-7.Vegetative Communities, MA 18 for livestock seasons of use in non-native annual grass communities.						
MA 13	Continue to restrict livestock numbers and	**Alternatives 1 - 5:** The BLM would implement grazing systems according to strategies and utilization described in Appendix 2.3, Grazing Systems in the Planning Area.				

Table 2-19. Livestock Grazing						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	seasons of use through grazing management systems and allotment management plans.	**Alternative 5a**: N/A				
MA 14	N/A	If necessary, the BLM could allow temporary changes in grazing use periods to occur before the begin date or after the end date specified on the permit or lease to adapt management to annual variations and achieve resource objectives. These changes in dates would not alter the amount of permitted AUMs.			**Alternatives 4 & 5**: The BLM would not allow temporary changes in grazing use periods due to annual weather variations, adaptive management, or other circumstances except when such flexibility is specified in the permit or in the AMP. **Alternative 5a**: N/A	
See Vegetative Communities MA 10 for riparian surveys and monitoring stipulations						
Monitoring						
Mon. 1	N/A	**Alternatives 1 - 5:** The BLM would schedule grazing allotment evaluation reports in a manner such that all I-category grazing allotments will be evaluated during the first 5 years of the RMP, and at 5-year intervals thereafter. The BLM would schedule all M-category allotments to be evaluated during the first 10 years of the RMP, and at 10-year intervals thereafter. The BLM would use monitoring data during evaluations to determine (1) if rangeland standards and resource objectives are being met, and (2) if significant progress is being made toward meeting the standards/objectives. Priorities would be: (1) evaluations of I-category allotments, and monitoring of both I- and M-category allotments, (2) evaluations of M-category allotments and monitoring of C-category allotments, and (3) evaluations of C-category allotments if events have changed conditions of the lands. The BLM would conduct monitoring in a manner consistent with applicable BLM guidance. If standards are determined not met and existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines, the BLM would take appropriate action, consistent with the management actions in the RMP, and document such actions each year. **Alternative 5a:** N/A				

Table 2-20. Grazing Allotments and Areas/Allotments Unavailable For Grazing

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Acres Included in Grazing Allotments						
	418,601	388,310	396,210	380,165	334,260	**Alternative 5:** 263,915 **Alternative 5a:** 0
Acres Unallotted for Grazing						
	9,824	40,115	32,215	48,260	94,165	**Alternative 5:** 164,510 **Alternative 5a:** 428,425

NO ACTION ALTERNATIVE

Areas not available for grazing include:

- 80 acres in Keating RNA/ACEC
- 2,230 acres in Hunt Mountain ACEC area (includes land outside ACEC)
- 770 acres in Oregon Trail ACEC (NHOTIC)
- 2,040 acres in South Fork Walla Walla ACEC

No current allotments are unavailable for grazing.

ALTERNATIVE 1

Areas not available for grazing include:

- Newly acquired lands within allotments #6516, #6517, #6572, #6594, #6548, and newly acquired lands (acquired between 1989 and 2009) that are entirely outside of grazing allotments (includes Lime Hill RNA).
- 155 acres in Keating RNA/ACEC (Balm Creek)
- 200acres in Snake River Goldenweed RNA/ACEC
- 2,529 acres in Hunt Mountain ACEC
- 826 acres in Oregon Trail ACEC (Flagstaff Hill and Echo Meadows)
- 2,040 acres in South Fork Walla Walla ACEC
- 473 acres in Elk Exclosure on Lookout Mountain
- 1427 acres in Sutton Creek Exclosure

The BLM would not authorize grazing within the unallotted portions of the Joseph Creek ACEC and Washington Grande Ronde ACEC. The BLM would make no current allotments unavailable for grazing; however, allotments containing acquired lands within Washington Grande Ronde ACEC would be mostly unavailable (see above and LUA3).

Table 2-20. Grazing Allotments and Areas/Allotments Unavailable For Grazing

ALTERNATIVE 2

Areas not available for grazing include:

155 acres in Keating RNA/ACEC
826 acres in Oregon Trail ACEC
2,040 acres in South Fork Walla Walla ACEC
Acquired lands (acquired between 1989 and 2009) outside of Allotments #3026, #5321, #6517, #6572, and #6594 (includes Lime Hill RNA)
The same unallotted portions of the Joseph Creek ACEC and Grande Ronde ACEC as under Alternative 1

The BLM would make no current allotments unavailable for grazing.

Additional areas the BLM would make available for grazing include:

2, 938 acres in the Hunt Mountain area
2,865 acres in newly acquired lands within existing allotments #6517, #6548, #6572, and #6594
473 acres in Elk Exclosure on Lookout Mountain
1,427 acres in Sutton Creek Exclosure

ALTERNATIVE 3

Areas not available for grazing would include the same areas as under Alternative 1, with the following additional allotments equaling 8,143 acres becoming unavailable for grazing in order to reserve these areas for OHV recreation or ACEC/RNAs:

#2109 Ruckles Creek (Friday Mine Pasture), 3,552 acres
#1318 Mormon Basin (Mormon Basin Pasture), 4,146 acres
#2028 Sawmill Creek, 183 acres
#2041 Lower Sawmill, 262 acres

ALTERNATIVE4

Areas not available for grazing would include the same areas as under Alternative 1, with the BLM making the following allotments or pastures equaling 54,910 acres unavailable for grazing. This is because such allotments/pastures are in the Grande Ronde or Joseph Creek ACECs, or in the Snake River-Brownlee area where there is a predominance of steep slopes unsuitable for cattle. Some allotments/pastures would be made unavailable due to conditions within key sage-grouse habitat in the Keating area, including the Keating Riparian ACEC/RNA. Riparian exclosures of approximately 2,200 acres (in allotments other than those listed) would also be unavailable for grazing.

#	Name	Acres	#	Name	Acres	#	Name	Acres
2108	Keating Hwy (3 pastures)	1,634	06517	Grande Ronde RM30	1,061	06514	Grande Ronde RM23	197
2109	Ruckles Creek (Friday Mine Pasture)	3,552	06518	Grande Ronde RM58	433	06583	Grande Ronde RM42	81
3001	Pine Valley (4 pastures)	9,335	06602	Grande Ronde RM20	229	06578	Grande Ronde RM59	445
3005	Hunsaker Creek	3,106	06509	Grande Ronde RM50	360	06593	Grande Ronde RM41	46
3007	Copperfield	2,625	06516	Grande Ronde RM28	252	06544	Grande Ronde RM5-25	4,585
11001	Snake River	10,954	06536	Grande Ronde RM34	54	02041	Lower Sawmill	262

Table 2-20. Grazing Allotments and Areas/Allotments Unavailable For Grazing

1006	Huntington	9,942	06543	Grande Ronde RM61	625	06594	Grande Ronde RM41R	477
1068	Morgan Mountain (Deafy Creek Pasture)	1,263	06554	Fisher Gulch	524	06572	Grande Ronde RM35	1,591
06503	Grande Ronde RM39	180	06542	Grande Ronde RM53	81	06616	Horse Creek	236
06506	Grande Ronde RM27	111	06548	Courtney Creek	486	02028	Sawmill Creek	183

ALTERNATIVE 5

Areas not available for grazing would include the same areas as under Alternative 1, with the BLM making the following allotments equaling 123,738 unavailable for grazing due to 303(d) water quality limited streams being present on public lands. The entire Balm Creek ACEC of 1,096 acres would also be unavailable (which is 941 more acres than under the other alternatives) and riparian exclosures of approximately 1,750 acres (in allotments other than those listed) would be unavailable.

#	Name	Acres	#	Name	Acres	#	Name	Acres
01003	Cave Creek	4,837	02028	Sawmill Creek	183	06542	Grande Ronde RM53	381
01004	Durkee	9,597	02041	Lower Sawmill	262	06543	Grande Ronde RM61	626
01021	Pedro Mountain	2,655	02074	Pritchard Creek	13,539	06544	Grande Ronde RM5-25	4,722
01026	North Dixie Creek	1,140	03026	Soda Creek	10,211	06548	Courtney Creek	526
01031	Shirttail Creek	803	03028	Keystone Mine	150	06551	Wallupa Creek East	466
01033	Fur Mountain	323	05080	Thief Valley	125	06557	Wallupa Creek West	282
01037	Rye Valley	1,850	05133	Riverdale Hill	137	06569	Cable Creek	1444
01038	Beaver Creek	366	05235	North Fork	388	06574	Courtney Butte	524
01039	Turner Gulch	3,526	05311	Elk Creek	1,764	06617	Flora	865
01044	Juniper Mountain	2,085	05321	Auburn	2,801	06631	Upper Courtney Creek	164
01318	Mormon Basin	9,784	06505	Sickfoot Creek	83	11001	Snake River	10,954
01326	Brinker Creek	52	06509	Grande Ronde RM50	361	11301	South Bridgeport	16,291
01327	Meyer Gulch	284	06518	Grande Ronde RM58	434	11302	North Bridgeport	11,150

ALTERNATIVE 5a

The BLM would make all grazing allotments and pastures unavailable for grazing once current permits expire.

Table 2-21. Minerals						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
General Minerals Management						
Goal 1	Public lands will remain open and available for mineral exploration and development, unless withdrawal or other administrative action is clearly justified in the national interest.	Ensure that public lands are available for mineral exploration and development in accordance with existing mining laws and regulations unless withdrawn or segregated from entry subject to prior existing rights.				
Goal 2	Ensure that mineral resource exploration and development does not cause unnecessary or undue degradation of the public lands	Prevent unnecessary or undue degradation of public lands by operations authorized by the mining laws.				
Obj. 1	N/A	As part of the land ownership adjustment program, consolidate surface and subsurface (minerals) estates under one ownership when possible, thereby improving manageability of the federal lands involved.				
Obj. 2	Encourage and facilitate the development of public land mineral resources by private industry in a manner that satisfies national and local needs, and provide for economically and environmentally sound exploration, extraction, and reclamation practices. Mineral exploration and development can occur concurrently or sequentially with other resource uses.					
Locatable Minerals						
Management Actions						
MA 1	An estimated 392,222 acres of public domain and 512,715 acres of split-estate (private surface with federal mineral estate) are presently available for location under the mining laws or Public Law 359. Acreage under power site classifications and	N/A				

Table 2-21. Minerals						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	withdrawal are only available for location under Public Law 359 filing. An estimated 6,400 acres of public land with privately owned mineral estate could be developed at the discretion of the owner.					
MA 2	N/A	The BLM would require reclamation of all disturbances created by casual-use mining.				
MA 3	Increase monitoring of active mining operations to 2 or more compliance inspections per year, contingent on funding	The BLM would monitor public lands for the occurrence of unauthorized use.				
MA 4	Prepare "model" placer mine operating plans for Connor Creek and Burnt River as a way to encourage operating practices that, over the long term, will impact other resource objectives the least	N/A				
Salable Minerals						
Obj. 6	Process permits, operating plans, leases, mineral patent applications, mineral exchanges, and other mineral use authorizations for public lands in a timely and efficient manner. Ensure receipt of fair market value for mineral commodities, unless otherwise provided for by statute. Maintain the availability of lands for mineral leasing and mineral material production consistent with ACEC/RNA designations, watershed objectives, and other resource objectives.					
Management Actions						
MA 5	N/A	A reclamation plan would be required for all operations.				

Table 2-21. Minerals						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 6	N/A	No new or expansion of existing mineral material disposal sites would be authorized within ACECs, WSAs, WSRs, lands with wilderness characteristics, and OHV areas.	Same as Alternative 1, except would not apply to lands with wilderness characteristics.	Same as Alternative 1		
MA 7	Mineral material production will be maximized consistent with demand and protection of other resource values. Mineral material sales and free use permits will be authorized to qualified applicants for removal of common varieties of sand, gravel, stone, and cinders from the existing community pit and other existing quarry sites. New community pits will be developed in response to demand, if compatible with protection of other resource values	The BLM would authorize community pits on a case-by-case basis.				
Leasable Minerals						
Management Actions						
MA 8	N/A	A reclamation plan would be required on all leasable actions.				
MA 9	N/A	The BLM would review surface occupancy for mineral leases on a case-by-case basis.			The BLM would not authorize surface occupancy.	

Table 2-21. Minerals						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	N/A	The BLM would allow no surface occupancy on lands with Special Designations (See Table 2-24. Land Use Authorizations: Energy & Non-Energy ROWs/Leases/Permits, MA 1).	N/A	Same as Alternative 1		
MA 10	Update the automated oil and gas lease stipulation files to implement the leasing decisions.	N/A				
MA 11	The Planning Area is not in a coal production area and no federal coal leasing will result from this plan. Any potential federal coal leasing will be guided by the federal coal management regulations (43 CFR 3425). Under these regulations, interested parties apply for a coal lease to the BLM Oregon-Washington State Office in Portland. The application area will be studied for acceptability utilizing four planning screens: (1) verification of coal	N/A				

Table 2-21. Minerals						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	development potential; (2) application of 20 unsuitability criteria; (3) surface owner consultation for split-estate lands; and (4) multiple-use trade-offs involving other resource values compared to coal.					

Table 2-22. Recreation						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	N/A	Designate all public lands as being within either SRMAs or ERMAs (See Map 2-7 and Appendix 2.7 for detailed description of each SRMA and recreation management zone [RMZ].)				
Obj. 1	N/A	Provide and enhance developed and undeveloped recreation opportunities (while protecting resources) to manage the increasing demand for resource-dependent recreation activities.				
Obj. 2	Enhance/maintain recreation opportunities for hunting, fishing, swimming, floating, sightseeing, hiking, and day use.	Increase recreational amenities and facilities at high use campsites and campgrounds, improve existing recreational-specific opportunity areas, and reduce recreation-related impacts to other resources.	Same as Alternative 1, except also improve opportunities for commercial uses.	Same as Alternative 1	Same as Alternative 1, except emphasis low-impact recreational activities (non-motorized/mechanized).	Maintain existing recreational amenities and facilities at high use campsites and campgrounds. Emphasize low-impact recreational activities (non-motorized/ mechanized) and reduce impacts in areas where recreation is having a negative impact.
Land Use Allocations						
***Special Note**: Detailed descriptions of the SRMAs identified below are too complex for inclusion into this table. For information on the SRMAs and RMZs including areas, activities, experiences, benefits, characteristics, and related management prescriptions, see Appendix 2.7 and Map 2-7.*						
LUA 1	Develop or implement RAMPs for SRMAs. Continue implementing the Oregon Trail management plan. Designated management areas (SRMAs and the primary associated recreational attractions are (see Map 2-7 and Appendix 2.7): Oregon Trail-National Historic Trail Grande Ronde River-	The BLM would designate the following as SRMAs (see Map 2-7 and Appendix 2.7): Snake River reservoirs (Hells Canyon, Oxbow, Brownlee) Lookout Mountain Virtue Flat OHV Area WSRs NHOTIC. South Fork of the Walla Walla River	The BLM would designate the following as SRMAs (see Map 2-7 and Appendix 2.7): Snake River reservoirs (Hells Canyon, Oxbow, Brownlee) Virtue Flat OHV Area WSRs NHOTIC South Fork of the Walla Walla River Trailhead	The BLM would designate the following as SRMAs (see Map 2-7 and Appendix 2.7): Snake River reservoirs (Hells Canyon, Oxbow, Brownlee) Lookout Mountain Virtue Flat OHV Area WSRs WSAs NHOTIC South Fork of the Walla Walla River	The BLM would designate the following as SRMAs (see Map 2-7 and Appendix 2.7): Snake River reservoirs (Hells Canyon, Oxbow, Brownlee) Virtue Flat OHV Area WSRs NHOTIC Snake River/ Mormon Basin Backcountry Byways	

Table 2-22. Recreation

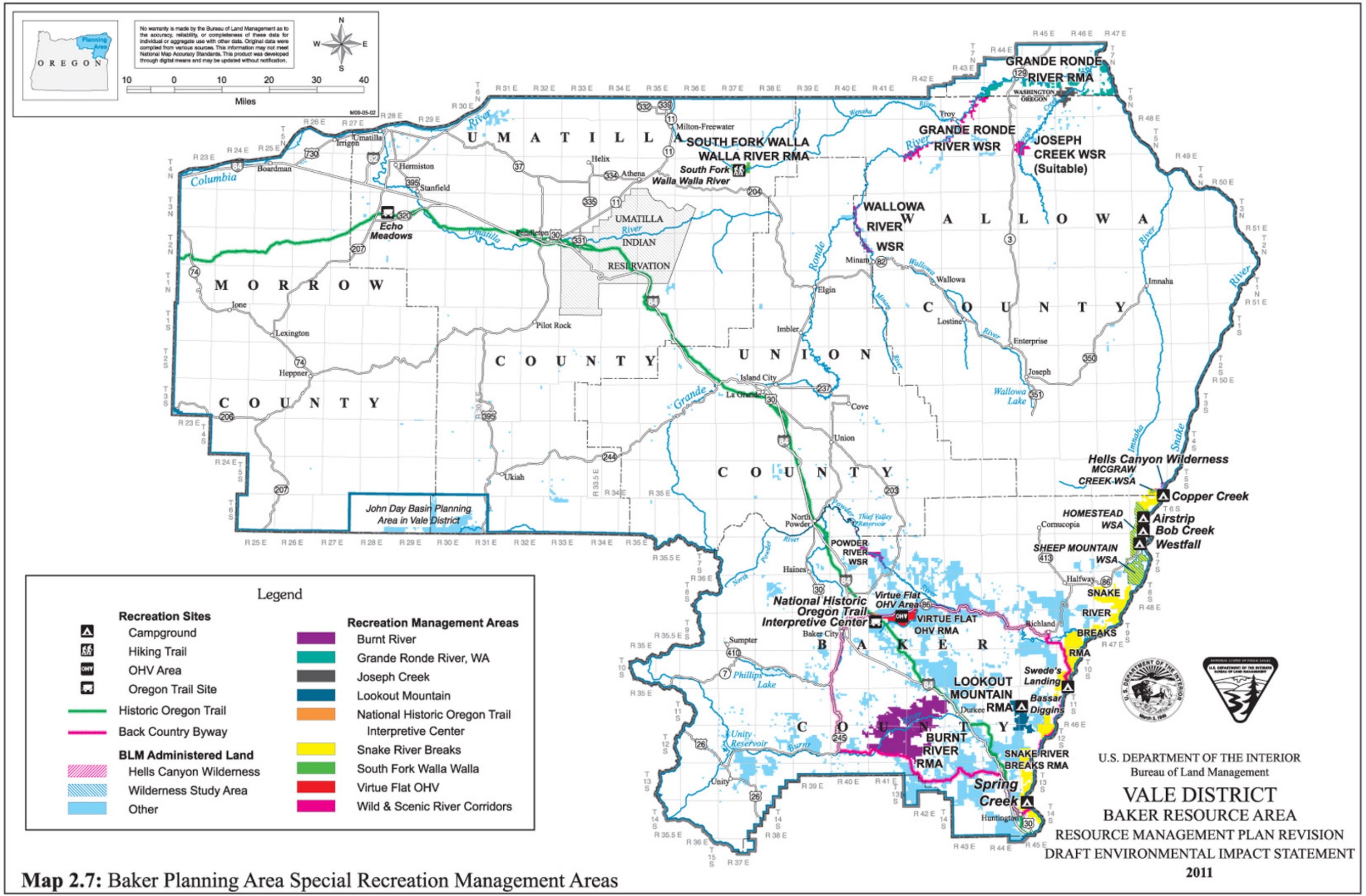
	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	○ National WSR Study River in Washington ○ National WSR River (Oregon Segment) Powder River-National WSR	Trailhead Grande Ronde River in Washington	Snake River/ Mormon Basin Backcountry Byway	Trailhead Grande Ronde River in Washington Snake River/ Mormon Basin Backcountry Byway Burnt River Canyon		
LUA 2	Develop or implement RAMPs for 13 recreation areas within the Baker ERMA. Designated management areas (ERMAs) and the primary associated recreational attractions are: Spring Recreation Site-Campground, water base facility South Fork Walla Walla-Campsite, water base facility Bassar Diggins-Campsite, trail head Snake River Breaks Burnt River-Fishing, Hunting -Water base Sheep Mtn.-Hunting, Sightseeing - Primitive setting Homestead-Hunting, Sightseeing - Primitive setting	The BLM would manage the remaining acreage of public lands not managed as an SRMA as an ERMA (See Appendix 2.8.).				

Table 2-22. Recreation						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	Lookout Mountain.-Hunting, Sightseeing - Primitive setting Virtue Flat-OHVs Denny Flat-OHVs Snake River Breaks-Hunting, Sightseeing - Primitive setting John Day River-Fishing, Hunting - Water base Brownlee Reservoir-Fishing -Water base Hells Canyon Reservoir-Fishing - Water base					
LUA 3	N/A	The BLM would manage specific RMZs within SRMAs according to Benefit Based Recreation Management objectives (see Recreation Opportunity Spectrum Map 2-8 [on CD]).			The BLM would manage specific RMZs within SRMAs according to Benefit Based Recreation Management objectives, emphasizing low impact recreational activities.	
Management Actions						
MA 1	Implement and develop site-specific management plans for SRMAs, and the ERMA that contains high recreational values.	The BLM would develop site-specific management plans for SRMAs and ERMAs if standard recreation management actions no longer maintain or enhance the recreation resource values of these areas.				
Management Actions Within SRMAs						
MA 2	N/A	The BLM would assess the need to build, improve, and/or develop facilities based on public and administrative needs or demands.	The BLM would build, improve, and/or develop facilities to increase recreational attractiveness for both public and commercial	The BLM would build, improve, and/or develop facilities to increase recreational attractiveness and knowledge of	Same as Alternative 1	

Table 2-22. Recreation

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
			uses to facilitate revenue generation.	recreational opportunities.		
MA 3	N/A	The BLM would incorporate the determinations and directions for recreational use and developments identified in the Virtue Flat OHV RAMP (BLM 2007) into the RMP (see Chapter 3 for general description of the RAMP).	The BLM would continue the current management of the Virtue Flat OHV Play Area to provide limited high-impact motorized recreation opportunities.	Same as Alternative 1	Same as Alternative 2	
MA 4	N/A	The BLM would close the Virtue Flat OHV Play Area to firearms use.	The BLM would close the Virtue Flat OHV Play Area to firearms use during the peak use season (April – September).	Same as Alternative 1		
MA 5	N/A	The BLM would provide opportunities for land and water based motorized, non-motorized, and mechanized activities in unconfined, natural settings as well as developed settings.	Same as Alternative 1, except with an emphasis on vehicular based motorized, non-motorized, and mechanized use	Same as Alternative 1	The BLM would provide opportunities for dispersed land and water based recreation activities in an unconfined, natural setting, with an emphasis on non-motorized and mechanized recreation.	
MA 6	N/A	Mandatory terms and conditions and recommendations for Hell's Canyon Complex for Federal Energy Regulation Commission re-licensing would be implemented by the applicant Idaho Power Corporation and administered by the BLM.				
Management Actions within ERMAs						
MA 7	N/A	The BLM would modify recreational use where inconsistent or in	The BLM would limit recreational use in areas where inconsistent or in	Same as Alternative 2, except that there would be an emphasis on	Same as Alternative 1	

Table 2-22. Recreation						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		conflict with other resource objectives for the area.	conflict with other resource objectives without impacting economic and commodity production.	providing recreation opportunities.		
MA 8	N/A	The BLM would provide opportunities for land and water based recreational activities.			Same as Alternative 1, except that the BLM would emphasize non-motorized and mechanized low impact recreational activities.	
Monitoring(within both SRMAs and ERMAs)						
Mon. 1	N/A	The BLM would annually monitor visitation levels, trends, and variances by using the following tools/techniques: Traffic counters Site registrations Periodic staff surveillance at recreation use locations Reports and data base tracking				
Mon. 2	N/A	The BLM would annually monitor compliance with recreation site rules/permit in the following fashion: Review recreation permits and site registrations Monitor regulation and stipulation compliance Identify users needs and trends				
Mon. 3	N/A	The BLM would annually monitor conditions of resources in the following fashion: Assess special requirements based on other resource programs (e.g., rangeland vegetation, special status plant species, water resources, and riparian/wetland areas) Ocular surveillance of recreation activities				
Mon. 4	N/A	The BLM would annually monitor dispersed/backcountry recreation by using the following tools/techniques: Use of dispersed and backcountry campsite monitoring User surveys Limits of Acceptable Change guidance procedures Photo points where necessary or appropriate User contacts				
Mon. 5	N/A	The BLM would annually monitor visitor experience/satisfaction through the use of the following: User contacts				



Map 2.7: Baker Planning Area Special Recreation Management Areas

Table 2-23. Travel and Transportation						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	N/A	Provide managed access to public lands.				
Obj. 1	Maintain existing OHV designations.	Manage motorized, mechanized, and associated human use consistent with resource objectives.				
Obj. 2	N/A	Manage motorized vehicle uses of public lands to protect resource values, promote public safety, provide motorized use opportunities where appropriate, and minimize conflicts among various users.				
Land Use Allocations						
	See Map 2-9(on CD)	*See Map 2-10(on CD)*	*See Map 2-11(on CD)*	*See Map 2-12(on CD)*	*See Map 2-13(on CD)*	*See Map 2-10(on CD)*
LUA 1	**Open:** Acres = 287,611 Percentage of Decision Area = 67% Miles of roads, primitive roads or trails affected by this designation: o Roads = 131.14 o Primitive roads = 2.47 o Trails = 139.09 Applied Areas = Virtue Flat OHV Play Area	**Open:** Acres = 4,918 Percentage of Decision Area = 1% Miles of roads, primitive roads or trails affected by this designation: o Roads = 6.41 o Primitive roads = .013 o Trails = 25.74 Applied Areas = Virtue Flat OHV Play Area	**Open**: Acres = 22,074 Percentage of Decision Area = 5% Miles of roads, primitive roads or trails affected by this designation: o Roads = 17.68 o Primitive roads = 75.14 o Trails = 32.43 Applied Areas = Virtue Flat OHV Play Area, Denny Flat, and Sunday Hill	**Open:** Same as Alternative 2	**Open:** Same as Alternative 1	Same as Alternative 1
	Closed: Acres = 3,594 Percentage of Decision Area = 1% Miles of roads, primitive roads or trails affected by this designation: o Roads = 5.53	**Closed:** Acres = 83,214 Percentage of Decision Area = 19% Miles of roads, primitive roads or trails affected by this designation: o Roads = 11.76	**Closed:** Acres = 39,109 Percentage of Decision Area = 9% Miles of roads, primitive roads or trails affected by this designation: o Roads = 6.83	**Closed:** Acres = 75,174 Percentage of Decision Area = 18% Miles of roads, primitive roads or trails affected by this designation: o Roads= 7.29	**Closed:** Acres = 124,515 Percentage of Decision Area = 31% Miles of roads, primitive roads or trails affected by this designation: o Roads = 35.47	

Table 2-23. Travel and Transportation						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	o Primitive roads = 2.47 o Trails = 139.09 Applied Areas = NHOTIC, Grande Ronde WSR (wild section); McGraw Wilderness; Joseph Creek ACEC	o Primitive roads = 103.45 o Trails = 52.69 Applied Areas = Congressionally mandated areas; NHOTIC; French Gulch; Oregon Trail, Joseph Creek, Sawmill Creek, Grande Ronde, and Hunt Mountain ACECs; and areas with no legal public access	o Primitive roads = 6.39 o Trails = 26.37 Applied Areas = Congressionally mandated areas; NHOTIC; and Oregon Trail, Joseph Creek, Sawmill Creek, and Grande Ronde ACECs	o Primitive roads = 91.94 o Trails = 51.27 Applied Areas = Congressionally mandated areas; NHOTIC; Oregon Trail, Joseph Creek, Sawmill Creek, Hunt Mountain, and Grande Ronde ACECs; and areas with no legal public access	o Primitive roads = 250.22 o Trails = 64.76 Applied Areas = same as Alternative, 1 except also includes Virtue Flat ACEC	
	Limited: Acres = 138,042 Percentage of Decision Area = 32% Miles of roads, primitive roads or trails affected by this designation: o Roads = 60.49 o Primitive roads/trails = 245.38 o Trails = 81.44 Applied Areas = West Fork Burnt River; Denny Flat; Burnt River Canyon; Lookout Mountain/ Soda Lake; Virtue	**Limited:** Acres = 340,293 Percentage of Decision Area = 79% Miles of roads, primitive roads or trails affected by this designation: o Roads = 178.99 o Primitive roads = 1036.48 o Trails = 159.15 Applied Areas = all remaining lands	**Limited:** Acres = 367,242 Percentage of Decision Area = 84% Miles of roads, primitive roads or trails affected by this designation: o Roads = 172.64 o Primitive roads = 955.95 o Trails = 178.79 Applied Areas = all remaining lands	**Limited:** Acres = 331,177 Percentage of Decision Area = 77% Miles of roads, primitive roads or trails affected by this designation: o Roads = 172.18 o Primitive roads = 870.41 o Trails = 153.89 Applied Areas = all remaining lands	**Limited:** Acres = 298,992 Percentage of Decision Area = 68% Miles of roads, primitive roads or trails affected by this designation: o Roads = 155.28 o Primitive roads = 787.25 o Trails = 147.08 Applied Areas = all remaining lands	

Table 2-23. Travel and Transportation						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	Flat; South Virtue Flat; WSAs; WSRs; Powder River Canyon; Deer Creek (Halfway); and Joseph Creek, Grande Ronde River, Keating Riparian, Unity Reservoir Bald Eagle Habitat, Hunt Mountain, and Oregon Trail ACECs					
Management Actions						
MA 1	N/A	Within the Open and Limited designated areas, the BLM would consider the existing interim route network as shared use for motorized, mechanized, and non-motorized uses until a final TMP can be prepared to address site-specific routes as applicable.				
MA 2	N/A	The BLM would make maps available that identify the interim route network of roads, primitive roads, and trails based on the existing road inventory as interim management until completion of the TMP.				
MA 3	N/A	The BLM would not add unauthorized roads or trails created by random public use after completion of inventory to the interim route network and would close such roads to motorized or mechanized uses.	Same as Alternative 1, with the addition that the BLM would add administratively authorized roads or trails developed for the purpose of commodity development to the interim route network and keep such roads available for motorized, non-motorized, or mechanized uses as appropriate for the OHV designation of the area.	Same as Alternative 1		
MA 4	N/A	The BLM would close public lands with no	N/A	Same as Alternative 1	The BLM would close public lands with no legal public access at the completion date of the RMP	

Table 2-23. Travel and Transportation						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		legal public access to motorized use until legal access is gained and the area is assessed for allowable types of uses. The BLM would evaluate requests for authorized access on a case-by-case basis to determine need, level of access, and timing of access.			revision to motorized uses through the life of the RMP.	
MA 5	N/A	The BLM would maintain the current road and transportation network to currently identified road standards, except where a resource objective or higher priority resource requires re-design, re-location, or decommissioning.	Where opportunities exist (e.g., physically, ownerships, ROW/ easements, or other resource needs), the BLM would improve the road and transportation network to encourage motorized, non-motorized, and mechanized use and to provide for increased opportunities for economic and commodity developments.	The BLM would improve maintenance on the road and transportation system in high-use recreation areas to allow increased recreation-based traffic, except where a higher priority resource or resource objectives require re-design, re-location, or decommissioning.	The BLM would reduce regular maintenance levels on the road and transportation system, except in high use recreation areas. Lower priority roads would be changed and maintained as motorized primitive trails. Where resource objectives are not being met, roads could be re-designed, re-located, or decommissioned.	
MA 6	N/A	Where feasible (e.g., physically, ownerships, ROW/easements, or other resource needs) and in conformance with other resource values,	Where feasible (e.g., physically, ownerships, ROW/easements, or other resource needs), the BLM would develop roads or trails on public	Where feasible (e.g., physically, ownerships, ROW/easements, or other resource needs), and in conformance with the needs of recreational	Where appropriate and feasible (e.g., physically, ownerships, ROW/easements, or other resources needs), the BLM would develop trails on public lands to access BLM road systems on landlocked parcels for non-motorized public uses.	

Table 2-23. Travel and Transportation						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		the BLM would develop roads or trails on public lands to access existing BLM road systems on landlocked parcels.	lands to provide access in support of economic and commodity development.	pursuits, the BLM would develop roads or trails on public lands to access existing BLM road systems on landlocked parcels.		
Monitoring						
Mon 1	N/A	Conditions of resources (annual monitoring): The BLM would ensure high value or sensitive resource conditions are not being adversely impacted by motorized uses. See specific requirements under other resources/special designations (e.g., vegetation, wildlife, cultural, water resources, fisheries, special status species, ACECs, WSAs, WSRs, protected lands with wilderness characteristics (except under Alternative 2), and wilderness). The BLM would conduct ocular surveillance during patrols. The BLM would develop photo points in areas showing impacts.				
Mon 2	N/A	Motorized activities (annual monitoring): The BLM would ensure that there is compliance with designations or restrictions. The BLM would conduct permit review. The BLM would conduct ocular surveillance during patrols. The BLM would engage in user contacts.				
Mon 3	N/A	Conditions of roads, primitive roads, routes, trails and ways: The BLM would conduct ocular surveillance (annual monitoring). The BLM would conduct a 5-year inventory review and GPS update.				

Table 2-24. Lands and Realty						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal	N/A	Ensure public lands are managed to provide land tenure adjustments, land use authorizations, public access, and withdrawals consistent with law and policy and with other resources and resource uses.				
Obj. 1	N/A	Meet the needs of government agencies and the public for various realty authorizations, access, and land ownership adjustments.				
Obj. 2	N/A	Meet the needs of government agencies and the public for resource protection through public land and mineral withdrawals, acquisition of easements/ROWs to provide access, and resolution of unauthorized use.				
LAND TENURE						
Goal 1	N/A	Retain lands in federal ownership, unless disposal or acquisition of a parcel will better serve the national interest and the needs of state and local people.				
Obj. 1	Consolidate ownership patterns in order to improve resource management of both public and private land.	Identify lands for retention, acquisition, or disposal based on resource values (e.g., cultural, fisheries, wildlife, and recreation) and overall management objectives.				
Land Use Allocations						
MA 1	**Zone 1: Retention/ Acquisition Zone**. A total of 409,153 acres are in this zone. These are lands that best serve the management missions of the BLM and have higher public values; including multiple use, management efficiency, and public access to resources; or that have national, statewide or regional resource values. Emphasize acquisitions through donation, exchange, or purchase to	The BLM would implement a land tenure adjustment program based on a three-zone concept. Zones contain common issues or planned actions and are described below (see Map 2-14 [on CD]): **Zone 1** (Z -1) lands (404,767 acres) contain substantial resource or recreational values and are generally well blocked. The BLM would retain or increase public lands holdings in Z-1, with an emphasis on acquiring consolidated land with high resource or recreational values through land exchange, purchase, donation, public agency jurisdictional transfers, or as opportunities arise. Land within Zone 1 with high resource value may be exchanged for other Zone 1 land with high resource value. **Zone 2** (Z-2) lands (20,204 acres) that may have lower resource values than Zone 1 are isolated or fragmented from other public lands (particularly when they lack legal access) and are, therefore, difficult or inefficient to manage. The BLM would place an emphasis on acquiring land with higher public resource values through such methods as exchange, purchase, donation, or public agency jurisdictional transfers to create consolidated public land areas. **Zone 3** (Z-3) lands (3,455 acres) may contain low resource and recreational values and are difficult and/or uneconomical to manage, thus making these lands potentially suitable for disposal. The BLM would make Z-3 lands available for disposal through land exchange, sale, or public agency jurisdictional transfers.				

Table 2-24. Lands and Realty						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	increase public land holdings in these areas. **<u>Zone 2: Disposal Zone</u>**. A total of 20,601.42 acres are in this zone. These are lands that are inefficient to manage because of their small size or isolated location, or that have no known or lower resource values. These lands appear to meet the disposal criteria cited in section 203 (a) of FLPMA. These lands will be available for disposal actions pending a site-specific environmental analysis.					
Management Actions (General)						
MA 2	N/A	When possible, the BLM would obtain administrative and public access with land acquisitions.				
MA 3	N/A	The BLM would prioritize acquisitions within or adjacent to WSAs, ACECs, and other SMAs.				
MA 4	The BLM would make exchanges only when they will enhance public resource values consistent with FLPMA land exchange criteria such as by consolidating ownership and reducing the potential for conflicting land use.					
MA 5	N/A	Land sales that the BLM would consider include: Small parcels of public land which are difficult or uneconomical to manage and are adjacent to private land holdings Land for public purposes to meet public and community needs.				
MA 6	N/A	The BLM would retain parcels that fulfill one or both of the following criteria: Parcels that facilitate natural resource management objectives by consolidating federal ownership. Parcels useful in protecting a special status species; preserving biological diversity; providing recreational opportunity; or preserving archaeological, historical, or paleontological resources.				
MA 7	N/A	The BLM would pursue land acquisitions from willing landowners when the acquisition facilitates natural resource				

Table 2-24. Lands and Realty						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		management objectives.				
Management Actions (Newly Acquired Lands)						
MA 8	Newly acquired lands would be managed for the highest potential purpose for which they were acquired. Lands acquired without identified special values or management goals would be managed in the same manner as comparable public lands.	The BLM would manage newly acquired lands according to established guidelines for the surrounding area or for the resource values for which such lands were acquired.				
Monitoring						
Mon. 1	N/A	The BLM would apply resource-monitoring procedures utilized on adjacent or comparable land to newly acquired land to ensure effective administration and improve resource management.				
LAND USE AUTHORIZATIONS: ENERGY & NON-ENERGY RIGHTS-OF-WAY/LEASES/PERMITS						
Goal 1	N/A	Meet the public's need for use authorizations such as ROWs, utility/transportation corridors, communications sites, leases, and permit when consistent with other resource objectives.				
Obj. 1	Maintain the availability of public lands for utility and transportation corridors and local ROWs.	Provide land use authorizations while protecting public safety and conserving and protecting natural resources.				
Obj. 2	N/A	Provide opportunities for the development of renewable energy resources while minimizing adverse impacts to other resource values.				
Land Use Allocations						
LUA 1	Public lands are available for local ROWs, including multiple- and single-use utility/transportation corridors following	The BLM would designate 72,618 acres as **exclusion areas** for all land use authorizations (see glossary for definition),	The BLM would designate 25,236 acres as **exclusion areas** for all land use authorizations, including energy and non-energy	The BLM would designate 40,500 acres as **exclusion areas** for all land use authorizations, including energy and non-energy	The BLM would designate 81,152 acres as **exclusion areas** for all land use authorizations, including energy and non-energy	The BLM would designate 104,982 acres as **exclusion areas** for all land use authorizations, including energy and non-energy

Table 2-24. Lands and Realty

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	existing routes, communication sites and roads, unless within the exclusion/avoidance areas described below (see Map 2-15 [on CD]): ROW exclusion areas: o Wilderness Areas o Wild river segments ROW avoidance areas: o WSAs o ACECs o Scenic and recreation river segments	including energy and non-energy related ROWs, communication site leases, and other permits. Surface occupancy for leasable minerals and land use authorizations would not be allowed in the following areas (see Map 2-16 [on CD]): Wilderness Areas WSAs WSR Corridors Joseph Creek WSR (suitable) Oregon Trail ACEC (not including NHOTIC administrative site uses) Virtue Flat ACEC Lands with wilderness characteristics	related ROWs, communication site leases, and other permits. Surface occupancy for leasable minerals and land use authorizations would not be allowed in the following areas (see Map 2-17 [on CD]): Wilderness Areas WSAs WSR Corridors Oregon Trail ACEC (not including NHOTIC administrative site uses)	related ROWs, communication site leases, and other permits. Surface occupancy for leasable minerals and land use authorizations would not be allowed in the following areas (see Map 2-18 [on CD]): Wilderness Areas WSAs WSR Corridors Joseph Creek WSR (suitable) Oregon Trail ACEC (not including NHOTIC administrative site uses) Virtue OHV Play Area NHOTIC Scenic Viewshed	related ROWs, communication site leases, and other permits. Surface occupancy for leasable minerals and land use authorizations would not be allowed in the following areas (see Map 2-19 [on CD]): Wilderness Areas WSAs WSR Corridors Joseph Creek WSR (suitable) Oregon Trail ACEC (not including NHOTIC administrative site uses) Virtue Flat ACEC Denny Flat ACEC Lands with wilderness characteristics	related ROWs, communication site leases, and other permits. Surface occupancy for leasable minerals and land use authorizations would not be allowed in the following areas (see Map 2-20 [on CD]): Wilderness Areas WSAs WSR Corridors Joseph Creek WSR (suitable) All ACECs (not including NHOTIC administrative site uses) Lands with wilderness characteristics
LUA 2	N/A				The BLM would designate a 5-mile **exclusion area** for wind development around all sage-grouse leks within Virtue Flat and Denny Flat ACECs (44,328 acres; see Map 2-19 [on CD]).	The BLM would designate a 5-mile **exclusion area** for wind development around all sage-grouse leks (141,973 acres; see Map 2-20 [on CD]).

Table 2-24. Lands and Realty

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
LUA 3	N/A	The BLM would designate 33,299 acres as **avoidance areas** for all land use authorizations, including energy and non-energy related ROWs, communication site leases, and other permits. In the following areas, land use authorizations and surface occupancy for leasable minerals may not be authorized unless impacts to the affected resources can be avoided or mitigated (see Map 2-16 [on CD]): Special status species habitats Cultural sites Existing and proposed ACECs not within exclusion areas NHOTIC Scenic Viewshed Relict sites Coyote Peak	The BLM would designate 25,725 acres as **avoidance areas** for all land use authorizations, including energy and non-energy related ROWs, communication site leases, and other permits. In the following areas, land use authorizations and surface occupancy for leasable minerals may not be authorized unless impacts to the affected resources can be avoided or mitigated (see Map 2-17 [on CD]): Special status species habitats Cultural Sites Existing and proposed ACECs not within exclusion areas	The BLM would designate 35,170 acres as **avoidance areas** for all land use authorizations, including energy and non-energy related ROWs, communication site leases, and other permits. In the following areas, land use authorizations and surface occupancy for leasable minerals may not be authorized unless impacts to the affected resources can be avoided or mitigated (see Map 2-18 [on CD]): Special status species habitats Cultural Sites Existing and proposed ACECs not within exclusion areas Lands with wilderness characteristics	The BLM would designate 153,941 acres as **avoidance areas** for all land use authorizations, including energy and non-energy related ROWs, communication site leases, and other permits. In the following areas, land use authorizations and surface occupancy for leasable minerals may not be authorized unless impacts to the affected resources can be avoided or mitigated (see Map 2-19 [on CD]): Special status species habitats Cultural Sites Existing and proposed ACECs not within exclusion areas NHOTIC Scenic Viewshed Relict sites Coyote Peak Sage-grouse key habitat	The BLM would designate 3,961 acres as **avoidance areas** for all land use authorizations, including energy and non-energy related ROWs, communication site leases, and other permits. In the following areas, land use authorizations and surface occupancy for leasable minerals may not be authorized unless impacts to the affected resources can be avoided or mitigated (see Map 2-20 [on CD]): Special status species habitats Cultural sites NHOTIC Scenic Viewshed Relict sites Coyote Peak
LUA 4	N/A	The BLM would designate a 3-mile	The BLM would designate a 2-mile	The BLM would designate a 3-mile	N/A	N/A

Table 2-24. Lands and Realty						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		avoidance area for wind development around all sage-grouse leks (77,329 acres; see Map 2-16 [on CD]).	**avoidance area** for wind development around all occupied sage- grouse leks (82,096 acres; see Map 2-17 [on CD]).	**avoidance area** for wind around all occupied sage-grouse leks (111,229 acres; see Map 2-18 [on CD]).		
LUA 5	N/A	The BLM would designate Lime Hill (Baker County) and Gold Hill (Baker County), Big Lookout Mountain, Halfway/Richland Hill, and Sheep Mountain and Hermiston Butte as communication sites. The BLM would consider other communication site leases in open and avoidance areas.				
LUA 6	All utility/transportation corridors identified by the Western Regional Corridor Study are currently occupied and will be designated without further review.	The BLM would designate the I-84 energy corridor identified by the Programmatic EIS, *Designation of Energy Corridors on BLM Administered Land in the 11 Western States* (BLM 2009) as an energy corridor with a width of 3,500 feet for compatible multimodal uses.				
Management Actions						
MA 1	N/A	The BLM would ensure that existing disturbance areas for ROWs, leases, and permits be utilized to the extent practical.				
MA 2	N/A	The BLM would exclude hydropower development in designated WSR corridors.				
MA 3	N/A	The BLM would require that hydropower development be avoided or limited in ACECs to protect resource values.				
MA 4	N/A	The BLM would not approve new, short-term authorization or permits to use public lands for the sole benefit of private farming practices (e.g., crop production, pivot lines, or storage of farm equipment).	The BLM would not approve new authorizations or permits to use public lands for the sole benefit of private farming practices (e.g., crop production, pivot lines, or storage of farm equipment).	Same as Alternative 1		
Monitoring						
Mon. 1	Right-of-way grants will be monitored to ensure that development is consistent with the terms	The BLM would periodically field-monitor lands and realty transactions to ensure compliance with the terms and conditions of the authorization.				

Table 2-24. Lands and Realty						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	and conditions of the grant. A pre-work conference will be conducted with the grantee, contractor, and BLM authorized officer to discuss the stipulations of the grant and plans for construction. Monitoring is performed during and after construction.					
Mon. 2	The BLM would monitor leases and permits to ensure that development is consistent with the terms and conditions of the grant.					
Mon. 3	N/A	The BLM would utilize field-based contacts and office communications to gain information on public satisfaction.				
Mon. 4	N/A	In regards to renewable energy monitoring, the BLM would conduct the following: Review public access needs in all proposed renewable energy projects. Apply resource-monitoring procedures to ensure compliance from proposed renewable energy projects. Follow normal BLM accomplishment and plan implementation tracking processes. Perform periodic field compliance checks for all projects and associated ancillary structures.				
PUBLIC ACCESS						
Goal 1	N/A	Where possible, acquire and maintain legal and administrative access to public lands. Balance public access needs with resource protection.				
Obj. 1	Assure legal/physical access to public lands having important resource values.	Acquire legal access to ensure effective administration and to enhance the opportunity for current and future public land uses.				
Management Actions						
MA 1	Acquire additional legal access as required to meet management objectives. Negotiated purchase of an agreement is the	The BLM would seek to acquire legal access (public and/or administrative) to public lands, regardless of whether access issues	Same as Alternative 1	Same as Alternative 1, except access acquisition priority would be for: Public recreational access	The BLM would seek to acquire legal administrative access to public lands.	The BLM would not pursue acquiring legal access unless needed to provide for public safety or for BLM management activities.

Table 2-24. Lands and Realty						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	preferred method to acquire needed access. Generally acquire permanent access to lands within land tenure Zone 1. Acquire the minimum rights needed, for public and administrative access and ROW width, to meet management objectives.	have arisen. Access acquisition would be prioritized according to the following criteria: Access for BLM management activities Public recreational access		Access for BLM management activities		
Monitoring						
Mon. 1	N/A	The BLM would review public access needs in all land tenure adjustment transactions, prioritizing such needs based on high resource values or on large areas of public land ownership.				
WITHDRAWALS						
Goal 1	N/A	Ensure existing withdrawals are appropriate and new withdrawals would be pursued that meet federal land-use objectives.				
Obj. 1	N/A	Propose areas for withdrawal from mineral and/or surface entry areas when it is necessary for the protection of identified resource values.				
Management Actions						
MA 1	N/A	The BLM would manage any lands becoming unencumbered by withdrawals or classifications in a manner consistent with adjacent or comparable public lands within the Decision Area.				
MA 2	N/A	The BLM would continue to manage current withdrawals for the specific purposes intended in the withdrawal.				
MA 3	N/A	The BLM would recognize that congressionally designated mineral entry withdrawals include wilderness areas, designated wild segments of WSRs, and NHOTIC.				
MA 4	N/A	The BLM would recommend withdrawals that no longer serve the purpose for which they were established to Congress for modification, revocation, or relinquishment. Prior to modification, revocation, or relinquishment, the BLM would review withdrawn lands to determine if any other resource values require withdrawal protection.				
MA 5	N/A	The BLM would manage withdrawn lands currently under review by the BLM Washington Office for modification, revocation, or relinquishment. Such lands would be approved and returned back to public land status in the same manner as adjacent public lands per the final decision.				
MA 6	N/A	Where resource values or agency investments are best protected by withdrawals, the BLM would consider new withdrawal proposals on a case-by-case basis. Lands proposed to be withdrawn should be the minimum area required for the intended purpose of the withdrawal.				

Table 2-24. Lands and Realty

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
MA 7	Subject to valid existing rights, the BLM would pursue withdrawal of public lands from mineral entry on: Oregon Trail sites at Flagstaff Hill, Straw Ranch, and Echo Meadows. 185 acres of the Keating Riparian RNA (See Map 2-21 [on CD])	Subject to valid existing rights, the BLM would pursue withdrawal of public lands from mineral entry on: WSAs Auburn Town Site Amelia Town Site Balm Creek portion of Keating ACEC Magpie Peak ACEC Hunt Mountain ACEC Virtue Flat ACEC Oregon Trail ACEC sites at Flagstaff Hill and White Swan (20,096 acres; see Map 2-22 [on CD])	The BLM would not pursue withdrawal of public lands from mineral entry. (See Map 2-23 [on CD])	Subject to valid existing rights, the BLM would pursue withdrawal of public lands from mineral entry on: WSAs Auburn Town Site Amelia Town Site Balm Creek portion of Keating ACEC Magpie Peak ACEC Hunt Mountain ACEC Oregon Trail ACEC sites at Flagstaff Hill and White Swan (6,041 acres; see Map 2-24 [on CD])	Same as Alternative 1	Subject to valid existing rights, the BLM would pursue withdrawal of public lands from mineral entry on: WSAs Auburn Town Site Amelia Town Site Magpie Peak ACEC Hunt Mountain ACEC Oregon Trail ACEC Joseph Creek ACEC Grand Ronde River ACEC Keating Riparian ACEC Unity Bald Eagle ACEC Sheep Mountain ACEC Homestead ACEC South Fork Walla Walla River ACEC Snake River Goldenweed ACEC Virtue Flat ACEC Denny Flat ACEC Powder River ACEC Relict Sites Lands with wilderness characteristics

Table 2-24. Lands and Realty						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
						(95,504 acres; see Map 2-25 [on CD]):

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	N/A	Designate and manage ACECs and/or RNAs where relevance and importance criteria are met and special management attention is required to protect the values identified.				
Obj. 1	Ten areas, totaling 40,245 acres, are designated as ACECs.	Manage 12 areas, totaling 83,756 acres, as ACECs (7 existing, 1 existing with boundary changes, and 4 proposed) and implement identified management actions to maintain and/or enhance relevant and important values (See Map 2-26 [on CD]).	Manage 7 areas, totaling 34,419 acres, as ACECs (6 existing, 1 existing with boundary changes, and 0 proposed) and implement identified management actions to maintain and/or enhance relevant and important values (See Map 2-26 [on CD]).	Manage 12 areas, totaling 47,992 acres, as ACECs (10 existing and 2 proposed) and implement identified management actions to maintain and/or enhance relevant and important values (See Map 2-26 [on CD]).	Manage 14 areas, totaling 93,991 acres, as ACECs (10 existing, and 4 proposed) and implement identified management actions to maintain and/or enhance relevant and important values (See Map 2-26 [on CD]).	
Obj. 2	Manage 80 acres of Keating ACEC as an RNA (consists of three separate RNA units).	Manage 6 areas, totaling 2,984 acres, within 4 ACECs as RNAs and implement identified management actions to maintain and/or enhance relevant and important values.	Manage 4 areas, totaling 2,175 acres, within 2 ACECs as RNAs and implement identified management actions to maintain and/or enhance relevant and important values.	Same as Alterative 1	Manage 7 areas, totaling 6,961 acres, within 5 ACECs as RNAs and implement identified management actions to maintain and/or enhance relevant and important values.	
Obj. 3	Continue to manage the Joseph Creek ACEC also as an Outstanding Natural Area (ONA).					
Management Actions Common to all ACECs (Currently Designated and Proposed)						
MA 1	N/A	The BLM would identify some ACECs as exclusion areas for land use authorizations (identified below under the specific ACEC management actions). The BLM would identify all other ACECs as "avoidance areas" for land use authorizations, with all authorized activities needing to be commensurate with ACEC/RNA values (see also Table 2-24 Lands and Realty: Land Use Authorizations: Energy & Non-Energy ROWs/Leases/Permits, LUA 1 and LUA 3).				The BLM would exclude all land use authorizations within ACECs, including energy and non-energy ROWs, communication site leases, and other permits.
MA 2	N/A	The BLM would collect existing plant composition, distribution, and abundance data for all RNAs and utilize such data to determine baseline attributes of the native plant communities that occur in the RNAs.				

Table 2-25. Areas of Critical Environmental Concern (Existing)

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
MA 4	N/A	The BLM would ensure that noxious weed treatments would be consistent with the most current Vale District Weed Control Plan EA (see Table 2-8. Invasive Species: Invasive Plants and Noxious Weeds, MA 1).				
MA 5	N/A	The BLM would use strategic integrated pest management techniques for treating noxious weeds, as long as it is consistent with the ACEC/RNA values. Chemicals could be used (see Table 2-8. Invasive Species: Invasive Plants and Noxious Weeds).				
MA 6	N/A	The BLM would maintain native perennial plant cover to reduce noxious weed invasion.				
MA 7	N/A	The BLM would use MIST for wildfires within ACECs.				
MA 8	N/A	The BLM would develop emergency fire plans for the Incident Command Team that addresses dozer lines, retardants, human safety, and the like and ensure that such plans are consistent with management actions required for each ACEC.				
MA 9	See specific ACECs	The BLM would ensure that fire suppression activities avoid creating dozer lines through special status plant sites, except to protect human life and private property.				
MA 10	N/A	The BLM would only allow the use of native seed for fire stabilization and rehabilitation in Joseph Creek, Washington Grande Ronde River, Hunt Mountain, Homestead, Denny Flat, Snake River Goldenweed, Keating Riparian, Magpie Peak, and South Fork Walla Walla ACECs. The BLM would allow the use of short-lived non-native and native seed for fire stabilization and rehabilitation in Keating Riparian, Oregon Trail, Sheep Mountain, and Virtue Flat ACECs.		The BLM would only allow the use of native seed for fire stabilization and rehabilitation in Joseph Creek, Grande Ronde River, Hunt Mountain, Homestead, Denny Flat, Snake River Goldenweed, and South Fork Walla Walla ACECs. The BLM would allow the use of short-lived non-native and native seed for fire stabilization and rehabilitation in Powder River, Unity Bald Eagle, Oregon Trail, Sheep Mountain, and Virtue Flat ACECs.		
MA 11	N/A	The BLM would allow the use of prescribed fire and managed wildland fire to achieve ACEC or RNA objectives. Retardant would be limited to protection of human safety and protection of private property.				
MA 12	N/A	The BLM would consider inholdings and/or adjacent lands to ACECs for acquisition from willing landowners.				
MA 13	N/A	If ACEC or RNA values are impaired or threatened, the BLM would make management changes to ensure values are protected.				
MA 14	See specific ACECs	The BLM would restrict forestry and/or fuels management activities to prescriptions that are commensurate with ACEC values.				
Monitoring Actions for all ACECs						
Mon. 1	NA	The BLM would conduct field assessments every 5 years to ensure management actions for all ACECs and RNAs are implemented. The BLM would and establish photo points at key observation points and keep photos on record (see Appendix 2.9, ACEC monitoring form).			The BLM would conduct field assessments annually to assure management actions for all ACECs and RNAs are implemented. The BLM would establish photo points at key observation points and keep photos on record (see Appendix 2.9, ACEC Monitoring Form).	

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Mon. 2	The BLM would prepare compliance records or monitoring reports for ACECs and RNAs every 5 years (See Appendix 2.9, ACEC Monitoring Form).					
Mon. 3	NA	For the South Fork Walla Walla ACEC, the BLM would continue to work with Confederated Tribes of the Umatilla Indian Reservation, USFS, USFWS, and NMFS to document and report vehicle use and their impacts, fry emergence, and spawning activity during landowner access period.				
Mon. 4	NA	For the South Fork Walla Walla ACEC, the BLM would continue to monitor stream bank and river crossings as established in existing ESA consultations with NMFS and USFWS.				
Mon. 5	NA	The BLM would continue coordination and monitoring with ODFW and USFWS for Virtue Flat ACEC on population trend and habitat needs for sage-grouse.				
JOSEPH CREEK ACEC						
Relevant and Important Values: Natural riparian plant communities, wildlife habitat, scenic qualities and geologic system						
Joseph Creek ACEC Land Use Allocation (see Map 2-27)						
LUA 1	Public lands on Joseph Creek (3,360 RMP; 3,497acres) between Tamarack and Cottonwood Creeks are designated and will be managed as an Outstanding Natural Area/ACEC primarily to protect the natural riparian plant communities of Joseph Creek; and to protect wildlife habitat, high scenic qualities, and outstanding geologic system values for educational and recreational purposes.	The BLM would continue the designation and management of public lands on Joseph Creek (3,497 acres) between Tamarack and Cottonwood Creeks as an ONA/ACEC to protect the natural riparian plant communities, wildlife habitat, high scenic qualities, outstanding geologic systems, special status species and habitats, and Nez Perce "precious lands" acquisition adjacent to the ACEC.				
Joseph Creek ACEC Management Actions						
MA 1.1	Natural riparian and upland vegetation in the canyon will be	The BLM would manage and monitor Joseph Creek	The BLM would manage and monitor Joseph Creek	Same as Alternative 1	Same as Alternative 1, except that the BLM would not make lands	**Alternative 5**: The BLM would not allow grazing on public lands

Table 2-25. Areas of Critical Environmental Concern (Existing)

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	maintained.	ONA/ACEC to achieve/meet Rangeland Health Standards and Riparian Management Objectives. The BLM would not allow grazing on acquired lands, except to meet ACEC management needs.	ONA/ACEC to achieve/meet Rangeland Health Standards, Riparian Management Objectives, and to meet ACEC management needs.		acquired since 1989 that are now within the Joseph Creek ACEC administrative boundaries available for grazing. Leases within the Joseph Creek ACEC would have that portion of the lease cancelled.	for those allotments identified as unavailable for grazing in Table 2-20 due to 303(d) water quality limited streams being present on public lands. **Alternative 5a**: N/A (The BLM would not authorize grazing).
MA 1.2	Cooperation with WDFW will continue to maintain and improve wildlife habitat on intermingled BLM and WDFW lands within the ACEC and in the Chief Joseph Wildlife Management Area.					
MA 1.3	Wildlife habitat will be managed for deer, elk, bighorn sheep, eagles, and other raptors.	The BLM would manage habitat for wildlife species endemic to the area.				
MA 1.4	Aquatic habitat for anadromous fish will be maintained in a natural condition.	The BLM would manage aquatic and riparian habitat for anadromous and resident fish to achieve aquatic and riparian goals and objectives (see ARMS, Appendix 2.2).				
MA 1.5	Land immediately adjacent to Joseph Creek will be closed to OHV use (150 acres); remaining lands will be limited to designated roads for OHV use	The BLM would close the entire ACEC to motorized access.				
MA 1.6	N/A	The BLM would not allow new roads and trails on public lands in the ACEC.				
MA 1.7	Recreational use would be limited to fishing, hiking, and observational activities along Joseph Creek.	The BLM would limit recreational use to primitive use. No motorized or mechanized activities would be allowed.				

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 1.8	Camping locations will be restricted to protect riparian habitat.	The BLM would allow dispersed camping unless resource concerns develop that change this decision.				
MA 1.9	A "no surface occupancy" restriction for all gas exploration and development will be applied.	The BLM would apply an avoidance area for all leasable minerals exploration and development.				The BLM would prohibit surface occupancy for all fluid, gaseous, salable, and leasable minerals, excluding existing leases or permits.
MA 1.10	Timber harvest will be excluded on 80 acres.	See MA 14 under *Management Actions Common to all ACECs.*				
MA 1.11	N/A	The BLM would allow the use of prescribed fire to achieve ACEC objectives.				
MA 1.12	Livestock grazing will be restricted through fencing and seasons of use.	Same as the No Action Alternative, with the addition that existing grazing leases would continue but may be adjusted to ensure ACEC values are managed and protected.				
MA 1.13	Adjacent or private lands on Joseph Creek may be acquired [*from willing owners*] to benefit natural riparian and wildlife values.	See MA 12 under *Management Actions Common to all ACECs.*				
MA 1.14	N/A	The BLM would restrict the development of hydropower to protect resources for which the ACEC was designated.				
MA 1.15	N/A					The BLM would pursue withdrawal from mineral entry for all acres in the ACEC.
MA 1.16	N/A	The BLM would only allow the use of native seed for fire stabilization and rehabilitation.				
GRANDE RONDE RIVER ACEC/RNA						
Relevant and Important Values: Unique natural, scenic geologic, ecologic and cultural resources						
Grande Ronde ACEC Land Use Allocation (see Map 2-28)						
LUA 2	Public lands on the Grande Ronde River	The BLM would continue the designation and management of public lands on the Washington		The BLM would continue the designation and management of public lands on the Grande Ronde River (15,380 acres) in Oregon and Washington and		

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	(9,715 acres) in Oregon and Washington, and on the Snake River in Washington, are designated and will be managed as an ACEC. The ACEC is managed to promote protection of the area's unique natural, scenic, geologic, ecologic, and cultural resource values; and to protect wildlife habitat and enhance recreation opportunities.	Grande Ronde River (11,407 acres) and Snake River as an ACEC. Within the ACEC, 1,572 acres near Lime Hill would be managed as an RNA and 238 acres on Mount Wilson would be managed as an RNA (see Chapter 3, Special Designations for definitions of ACEC and RNA).		on the Snake River in Washington as an ACEC. Within the ACEC, 1,572 acres near Lime Hill would be managed as an RNA and 238 acres on Mount Wilson would be managed as an RNA (see Chapter 3, Special Designations for definitions of ACEC and RNA).		
Grande Ronde River ACEC Management Actions						
MA 2.1	An ACEC management plan will be developed to protect natural, scenic, cultural, and recreational values.	Due to the designation of the Oregon section of the Grande Ronde River as a component of the Wild and Scenic River System, the BLM will no longer designate that portion of the river as an ACEC. The BLM will ensure the protection and management of the significant and relevant values of the Grande Ronde River in Oregon under the direction of and the boundaries identified in the Wallowa and Grande Ronde Rivers Final Management Plan/EA (BLM et al., 1993). The Washington Grande Ronde River ACEC will be managed consistent with the Wallowa and Grande Ronde Rivers Final Management Plan/EA (BLM et al., 1993) for that section of the river and the Goose Neck National Landmark values (see Federal Register May 12, 1999).		The BLM would ensure that all management actions within the ACEC in Oregon and Washington are consistent with the Wallowa and Grande Ronde Rivers Final Management Plan/EA (BLM et al., 1993) and Goose Neck National Landmark values (see Federal Register May 12, 1999). Management actions called for by the WSR Act and Management Plan would occur on those designated lands also within the ACEC. All lands within the designated WSR boundary would remain withdrawn from mineral entry and excluded from land use authorizations. The BLM would close these areas to leasable mineral entry.		

Table 2-25. Areas of Critical Environmental Concern (Existing)

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
MA 2.2	The visual resource will be protected within the viewshed corridor along the rivers; only those uses compatible with maintaining visual resource classifications will be allowed.					
MA 2.3	Off-road vehicle use will be limited to designated roads and trails.					
MA 2.4	Adjacent lands or inholdings may be acquired (from willing sellers) to enhance wildlife and fish habitat, special status plants habitats, cultural resources, and recreational opportunities.	See MA 12 under *Management Actions Common to all ACECs*				
MA 2.5	A "no surface occupancy" restriction will be applied to oil and gas exploration or development.	The BLM would identify the ACEC in Washington as an avoidance area for all leasable minerals exploration and development.		The BLM would identify the ACEC in Oregon and Washington as an avoidance area for all leasable minerals exploration and development.		The BLM would prohibit surface occupancy for all fluid, gaseous, salable, and leasable minerals. This does not include existing leases or permits.
MA 2.6	Habitat for bald eagles, raptors, game and non-game species, and anadromous fish will be maintained or improved in cooperation with federal and state agencies.					
MA 2.7	Geologic system values of the Goosenecks National Natural Landmark will be protected.	The BLM would implement management actions identified by NPS to protect geologic system values of Goosenecks National Natural Landmark.				
MA 2.8	No grazing on lands acquired within the ACEC.	The BLM would continue but may adjust existing grazing leases to ensure the Washington Grande Ronde River ACEC values are protected.	The BLM would authorize grazing on acquired lands within allotments numbered 6517, 6572, 6594, and 6548, as long as ACEC values are protected	The BLM would continue but may adjust existing grazing leases to ensure ACEC values are protected. The BLM would not issue grazing permits on acquired	Same as Alternative 3, except the BLM would not make lands acquired since 1989 that are now within the Grande Ronde ACEC administrative boundaries available for grazing. Leases containing acquired lands in the Grande Ronde ACEC would have that portion of the lease cancelled.	

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		The BLM would not issue grazing permits on acquired lands unless to meet ACEC management needs (e.g., as a tool to modify vegetation structure and/or as noxious weed control).		lands unless to meet ACEC management needs (e.g., as a tool to modify vegetation structure and/or as noxious weed control).		
MA 2.9	Commercial timber harvest will be restricted to prescriptions that protect or enhance natural, visual, and cultural values.	See MA 14 under *Management Actions Common to all ACECs*				
MA 2.10	N/A	N/A			The BLM would pursue withdrawal from mineral entry for all acres in the ACEC and RNAs.	
MA 2.11	N/A	In the Washington portion of the ACEC, the BLM would restrict hydropower development to protect resources for which the ACEC was designated.				
	N/A	The BLM would manage the existing gravel pit where Cusick's monkey flower occurs to protect the habitat of this special status plant. The BLM would ensure that Asotin County (the only authorized user) complies with the special use permit for the gravel pit, which states that the pit will not exceed its existing footprint.				
Lime Hill RNA Management Actions (see Map 2-29)						
MA 2.12	N/A	The BLM would exclude livestock grazing.				
MA 2.13	N/A	The BLM would ensure that signed location of recreation trails would avoid special status plant locations.				
MA 2.14	N/A	The BLM would continue to exclude all public motorized access.				
	N/A	The BLM would ensure that camping in the RNA does not prevent the attainment of RNA or riparian management objectives.				
Mt. Wilson RNA Management Actions (see Map 2-29)						
MA 2.15	N/A	**Alternatives 1 - 5**: The BLM would allow grazing only if it is compatible with ACEC values and objectives. **Alternative 5a:** N/A				
MA 2.16	N/A	The BLM would limit motorized travel to designated roads.				

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
KEATING RIPARIAN ACEC/RNA						
Relevant and Important Values: Riparian and wildlife habitat						
Keating Riparian ACEC/RNA Land Use Allocations (see Map 2-30)						
LUA 3	Public lands on Balm, Clover, and Sawmill Creeks (2,173 RMP; 2,223 acres) in the Keating Valley area, are designated and will be managed as an ACEC to protect riparian values and wildlife habitat. To protect and maintain natural riparian ecologic systems for research and educational purposes, a combination of 80 acres of Balm, Clover and Sawmill Creeks within the ACEC will be managed as an RNA.	The BLM would continue the designation and management of public lands on Balm and Sawmill creeks (1,542 acres) in the Keating Valley area as an ACEC to protect riparian and wildlife habitat values. The BLM would manage parcels along each creek (155 acres along Balm and 210 acres along Sawmill) within the ACEC as RNAs. While these ACEC/RNAs would be designated as the Keating Riparian ACEC/RNA, they would be further identified in two parts: Balm Creek ACEC/RNA (1,096 acres) and Sawmill Creek ACEC/RNA (446 acres). Due to the loss of previously existing Relevant and Important values of the Clover Creek ACEC/RNA, the BLM would no longer designate Clover Creek as a component of the Keating Riparian ACEC/ RNA.				
Keating Riparian ACEC/RNA Management Actions						
MA 3.1	NA	The BLM would avoid land use authorizations and leasable mineral development within the Keating ACEC, including both Balm Creek and Sawmill Creek areas.				The BLM would exclude land use authorizations and close these areas to leasable mineral development within the Keating ACEC, including both Balm Creek and Sawmill Creek areas.

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Balm Creek ACEC/RNA Management Actions						
MA 3.2	Livestock grazing will be excluded in the RNA.	The BLM would exclude livestock grazing from Balm Creek RNA (155 acres). For the remaining acres in the ACEC, the BLM would allow existing grazing leases to continue, but may adjust them to ensure ACEC values are maintained and protected.				The BLM would make those allotments shown in Table 2-20 not available for grazing due to 303(d) water quality limited streams. **Alternative 5a:** N/A
MA 3.3	Recreational use in the RNA will be limited to observational activities.	N/A				
MA 3.4	Camping will be excluded in the RNA.					
MA 3.5	N/A	The BLM would close the road in the Balm Creek RNA exclosures and make it a trail to accommodate research activities.				
MA 3.6	Commercial timber harvest will be restricted in the ACEC to prescriptions that protect or enhance riparian and wildlife values.	See MA 14 under *Management Actions Common to all ACECs.*				
MA 3.7	Riparian habitat and potential Columbian sharp-tailed grouse reintroduction habitat in the ACEC will be maintained or improved through restrictions on livestock grazing (seasons of use, numbers, or fencing).	N/A				
MA 3.8	Off-road vehicle use will be limited to designated roads and trails.	The BLM would limit OHV use to designated roads and trails in the ACEC, while closing the entire RNA to motorized vehicle use.				

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 3.9	A withdrawal from mineral entry will be pursued on 185 acres to protect the RNA.	The BLM would pursue a withdrawal from mineral entry on 739 acres to protect the RNA and ACEC values.	N/A	The BLM would pursue a withdrawal from mineral entry on 739 acres to protect the RNA and ACEC values.		The BLM would pursue a withdrawal from mineral entry on 1,096 acres to protect the RNA and ACEC values.
MA 3.10	N/A	The BLM would restrict hydropower development to protect resources for which the ACEC was designated.				
Sawmill RNA Management Actions						
	N/A	The BLM would prohibit OHV travel and camping within the ACEC/RNA.				
MA 3.11	N/A	The BLM would expand the boundary of Sawmill RNA to the extent of the ACEC boundary (210 acres) in the southern parcel, which would include high quality riparian vegetation and add upland vegetation communities represented by Wyoming big sagebrush and wild crab apple steppe.	N/A	Same as Alterative 1		
MA 3.12	Livestock grazing will be excluded in the RNA.	The BLM would allow grazing as long as RNA/ACEC values are not impaired. Prescription would include: Light upland utilization 21-40% for Sawmill (2028) and Lower Sawmill (2041) Allotments. Minimum riparian stubble height would be 6-8 inches to improve hydrologic function. Late spring to early fall grazing would not be permitted. Mid-fall to late fall grazing could only occur in years when adequate fall upland grass growth occurs to support livestock. Fall grazing would only occur one year in three. Spring grazing only occurs two years in a row. If grazing were determined to prevent the retention of the RNA values within 10 years of implementation, grazing would be removed.			The BLM would exclude livestock grazing from the entire portion of Sawmill Creek ACEC (allotments 2028 and 2041).	

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
POWDER RIVER CANYON ACEC						
Relevant and Important Values: Raptor and wildlife habitats, cultural resources and scenic quality						
Powder River Canyon ACEC Land Use Allocations (see Map 2-31)						
LUA 4	Public lands in the Powder River Canyon (5,880 RMP; 5906 acres), between Thief Valley Reservoir and Highway 203 in the Keating Valley, are designated and will be managed as an ACEC. Within the ACEC, 2,385 acres of BLM land are included in the Powder WSR.	Due to the designation of the Powder River as a component of the Wild and Scenic River System, the BLM will no longer designate this river segment as an ACEC. The BLM will ensure the protection and manage of the significant and relevant values of the Powder River (3,489acres) under the direction and boundaries identified in the Powder River Final Management Plan/EA (BLM et al., 1994).		The BLM would continue to manage public lands in the Powder River Canyon (5,906 acres) between Thief Valley Reservoir and Highway 203 in the Keating Valley an ACEC.		
Powder River Canyon ACEC Management Actions						
MA 4.1	N/A	N/A		The BLM would ensure that new management actions of the Powder River ACEC comply with Powder Wild and Scenic River Final Management Plan (BLM 1994).		
MA 4.2	The ACEC will be managed to protect raptor habitat, wildlife habitat, cultural resources and to maintain scenic qualities while allowing for compatible recreational uses.	The BLM would manage the Powder Wild and Scenic River under the direction of the Final River Management Plan to protect or enhance raptor habitat, sage-grouse, big game and other wildlife and fish habitats; cultural resources; and scenic qualities, while allowing compatible recreation activities		The BLM would manage the Powder River ACEC to protect raptor, sage-grouse, big game, and other wildlife and fish habitats; cultural resources; and scenic qualities, while allowing compatible recreation activities. All lands within the designated WSR boundary would remain withdrawn from mineral entry and excluded from land use authorizations. The BLM would close these areas to leasable mineral entry.		
MA 4.3	Forage and habitat needs for big game, bald eagles, golden eagles and other raptors will be maintained or improved.	The BLM would manage the Powder Wild and Scenic River under the direction of the Final River Management Plan to protect or enhance identified resource values.		Same as No Action Alternative		

Table 2-25. Areas of Critical Environmental Concern (Existing)

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
MA 4.4	Incompatible uses, including new road development, within the canyon and adjacent upland will be excluded to protect natural and cultural values.	The BLM would manage the Powder Wild and Scenic River under the direction of the Final River Management Plan to protect or enhance identified resource values.		Same as No Action Alternative		
MA 4.5	Riparian conditions will be maintained or improved by restricting livestock grazing through seasons of use, numbers, or fencing.	The BLM would manage livestock grazing through seasons of use, numbers, or fencing to maintain and improve riparian condition and meet rangeland standards and riparian management objectives. Existing grazing leases would continue unless standards are not met and may be adjusted to ensure resource values within the boundaries identified in the Final River Management Plan are protected.		The BLM would manage livestock grazing through seasons of use, numbers, or fencing to maintain and improve riparian condition and meet rangeland standards and riparian management objectives. Existing grazing leases would continue unless standards are not met and may be adjusted to ensure ACEC values are managed and protected.		The BLM would not make available for grazing those allotments (shown in Table 2-20) due to 303(d) water quality limited streams. **Alternative 5a**: N/A
MA 4.6	A "no surface occupancy" restriction will be applied to mineral leasing and development.	The BLM would manage the Powder Wild and Scenic River under the direction of the Final River Management Plan and the Wild and Scenic Rivers Act.		The BLM would apply an avoidance area for all leasable minerals exploration and development.		The BLM would prohibit surface occupancy for all fluid, gaseous, salable, and leasable minerals, which does not include existing leases or permits.
MA 4.7	N/A	N/A				The BLM would pursue withdrawal from mineral entry for all acres in the ACEC.
MA 4.8	Motorized vehicle use will be limited to designated roads and trails.					
MA 4.9	Adjacent lands or inholdings may be acquired to protect identified values.	See MA 11 under *Management Actions Common to all ACECs*				
MA 4.10	N/A	The BLM would prohibit hydropower development due to the WSR Act, Section 1278.				

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
UNITY BALD EAGLE ACEC						
Relevant and Important Values: Bald Eagle habitat						
Unity Bald Eagle ACEC Land Use Allocations (see Map 2-32)						
LUA 5	Public lands on the North Fork of the Burnt River (360 RMP; 356 acres), a potential bald eagle nest area, will be managed to protect habitat consistent with the ESA and Pacific States Bald Eagle Management Plan (BEMP). To protect the bald eagle habitat, 200 acres of the area is designated and will be managed as an ACEC. The remaining 160 acres are under a Bureau of Reclamation project withdrawal for Unity Reservoir, and will also be managed to protect bald eagle habitat.	The BLM would no longer manage public lands on the North Fork of Burnt River near Unity Reservoir (356 acres) as an ACEC because of the de-listing of the Bald Eagle. However, management of this area will still follow the directions of the joint USFS/BLM Unity Bald Eagle Management Plan (BEMP; USFS 1995). The BLM acreage would be managed to protect bald eagle habitat in accordance with the restrictions within the BEMP.		The BLM would continue to manage public lands on the North Fork of Burnt River near Unity Reservoir (356 acres), a potential bald eagle nest area, as an ACEC to protect habitat consistent with the joint USFS/BLM BEMP (USFS 1995). To protect the bald eagle habitat, the BLM acreage and adjoining Bureau of Reclamation withdrawal lands would be managed to protect bald eagle habitat in accordance with the restrictions within the BEMP.		
Unity Reservoir Bald Eagle ACEC Management Actions						
MA 5.1	Firewood cutting, commercial timber harvest, and major development actions will be excluded.	The BLM would restrict forestry and fuels management activities to prescriptions that are consistent with the BEMP and the protection of eagle nest sites.		The BLM would restrict forestry and fuels management activities to prescriptions that are commensurate with ACEC values and consistent with the BEMP and the protection of eagle nest sites.		
MA 5.2	Motorized vehicle use will be limited to designated roads and trails and seasonal road closure restrictions would be applied.					

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 5.3	No new roads will be developed.	The BLM would analyze new road development for compliance with the BEMP and other resource concerns.		Same as the No Action Alternative		
MA 5.4	Seasonal restrictions will be applied to oil and gas exploration and development.	Leasable mineral exploration and development would be analyzed for compliance with the BEMP and other resource concerns.		The BLM would apply an avoidance area for all leasable minerals exploration and development.		The BLM would close these areas to mineral leasing or sales, which does not include existing leases or permits.
MA 5.5	N/A	Actions from the joint USFS and BLM BEMP (USFS 1995) would continue to be implemented.				
MA 5.6	N/A	The BLM would restrict energy development to be commensurate with the BEMP.		The BLM would restrict energy development to be commensurate with ACEC values.		
MA 5.7	N/A	N/A		The BLM would restrict grazing use to meet ACEC objectives. Existing grazing leases would continue but may be adjusted to ensure ACEC values are managed and protected.		The BLM would not make available for grazing those allotments (shown in Table 2-20) due to 303(d) water quality limited streams. **Alternative 5a**: N/A
MA 5.8	N/A	N/A		The BLM would restrict hydropower development to protect resources for which the ACEC was designated.		
HUNT MOUNTAIN ACEC						
Relevant and Important Values: Rare plants, including Country Indian paintbrush, American thorow wax, Triangle moonwort, Northwestern moonwort, upswept moonwort (historical record)Mountain goat and big game habitat						
Hunt Mountain ACEC Land Use Allocations (see Map 2-33& Map 2-34)						
LUA 6	BLM lands on Hunt Mountain (2,230 acres were specified but maps represented 1,231 acres) are designated and will be managed as an ACEC to protect and maintain habitat for mountain goats and big	The BLM would continue to designate and manage public lands on Hunt Mountain (1,231 existing acres and 1,298 additional for a total of 2,529 acres) as an ACEC to protect and maintain habitat for	The BLM would not continue the designation or management of Hunt Mountain as an ACEC.	Same as Alterative 1		

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	game, and to protect habitat for sensitive plant species identified by the Oregon National Heritage Program.	mountain goats, big game, and several species of sensitive plants and to protect subalpine habitat and potential habitat for ESA listed salmonids.				
Hunt Mountain ACEC Management Actions						
MA 6.1	N/A	The BLM would protect and enhance plant and wildlife species habitat.	N/A	Same as Alternative 1		
MA 6.2	Off-road vehicle use will be limited to designated roads and trails.	Unless legal public access is acquired, the BLM would close the ACEC to motorized use.	N/A	Same as Alternative 1		
MA 6.3	Timber harvest will be restricted to prescriptions that protect wildlife and sensitive plant habitat.	See MA 14 under *Management Actions Common to all ACECs.*	N/A	Same as Alternative 1		
MA 6.4	Livestock grazing will continue to be excluded.		N/A	Same as the No Action Alternative		
MA 6.5	N/A	The BLM would restrict hydropower development protect resources for which the ACEC was designated.	N/A	Same as Alternative 1		
MA 6.6	N/A	The BLM would pursue a withdrawal from mineral on 2,529 acres to protect the ACEC values.	NA	Same as Alternative 1		
MA 6.7	N/A	The BLM would identify the ACEC as an avoidance area for all	NA	Same as Alternative 1		The BLM would close these areas to mineral leasing or sales. This

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
		leasable minerals exploration and development.				does not include existing leases or permits.
OREGON NATIONAL HISTORIC TRAIL ACEC						
Relevant and Important Values: Intact remnants of the Oregon National Historic Trail						
Oregon Trail ACEC Land Use Allocations (see Map 2-35 & Map 2-36)						
LUA 7	Seven parcels of public lands with remnants of the Oregon National Historic Trail (1,495 acres) are designated and will be managed as an ACEC to preserve the unique historic resource and visual qualities of these areas. The area at Flagstaff Hill (507 acres) was added to the original acreage to facilitate development of the Interpretive Center. Total acres designated for Oregon Trail 1901 acres.	The BLM would continue to manage seven parcels of public lands with remnants of the Oregon National Historic Trail and the NHOTIC (1,901 acres) as an ACEC to preserve the unique historic resource and visual qualities of these areas. The seven parcels include Powell Creek (71 acres), Straw Ranch 1 (197 acres), Straw Ranch 2 (258 acres), White Swan (457 acres), Flagstaff Hill/NHOTIC (518 acres), Blue Mountain (83 acres), and Echo Meadows (318 acres).				
Oregon Trail ACEC Management Actions						
MA 7.1	N/A	The BLM would consolidate easements and acquire appropriate lands with Oregon trail resources from willing sellers.				
MA 7.2	A withdrawal from mineral entry under the mining laws will be sought for 721.81 acres of public land for Trail sites at Flagstaff Hill, Straw Ranch, and Echo	The BLM would continue to maintain withdrawal from mineral entry for lands associated with NHOTIC (508 acres) and pursue withdrawal	The BLM would continue to maintain withdrawal from mineral entry for lands associated with NHOTIC (508 acres).	Same as Alternative 1	The BLM would continue to maintain withdrawal from mineral entry for lands associated with NHOTIC (508 acres) and pursue withdrawal for additional 10 acres at NHOTIC (south of Highway 86), and withdraw all 7 tracts from mineral entry.	

Table 2-25. Areas of Critical Environmental Concern (Existing)

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	Meadows.	for an additional 10 acres at NHOTIC (south of Highway 86) and for 457 acres at White Swan tract.				
MA 7.3	N/A	The BLM would prohibit dozer use through Oregon Trail ruts, except to protect human life and private property.				
MA 7.4	A management plan for preservation, public information, and interpretation will be implemented.	The BLM would implement National Historic Oregon Trail Management Plan (1989) for preservation, public information, and interpretation.				
MA 7.5	New uses incompatible with maintaining visual qualities or providing public interpretation will be excluded in a ½-mile corridor.	The BLM would exclude incompatible uses as defined in the National Historic Oregon Trail Management Plan (1989) and VRM class II management criteria, with maintaining visual qualities and providing interpretation within a ½-mile corridor.				
MA 7.6	No campgrounds will be developed within l/4 mile of the Oregon Trail in the ACEC.	The BLM would prohibit campground development within ¼ mile of the Oregon Trail (within the ACEC).				
MA 7.7	Rights-of-way will avoid the Oregon Trail.	The BLM would exclude land use authorizations, including energy and non-energy ROWs, communication site leases, and other permits, and would close these areas to leasable minerals except as needed on the NHOTIC tract.				
MA 7.8	Commercial timber harvest is excluded on 5 acres and restricted on 75 acres.	The BLM would restrict forestry and/or fuels management to prescriptions that are commensurate with ACEC values and permit only non-surface disturbing actions (non-mechanized) within approximately 5 acres of forested land that buffers the Oregon Trail alignment on the Blue Mountain parcel.				
MA 7.9	Livestock grazing will be excluded on 770 acres.	The BLM would exclude livestock grazing except in cases where grazing activities could be implemented to maintain or enhance ACEC values and/or objectives on 826 acres in Echo Meadows (318 acres) and NHOTIC (508 acres). The BLM would not exclude the 10 acres south of Highway 86 (in the NHOTIC tract) from grazing unless needed to protect the values. For the remaining acres, existing grazing leases would continue, but may be adjusted to ensure ACEC values are protected.				
MA 7.10	No new road access will be developed.	The BLM would prohibit new road development.				

Table 2-25. Areas of Critical Environmental Concern (Existing)

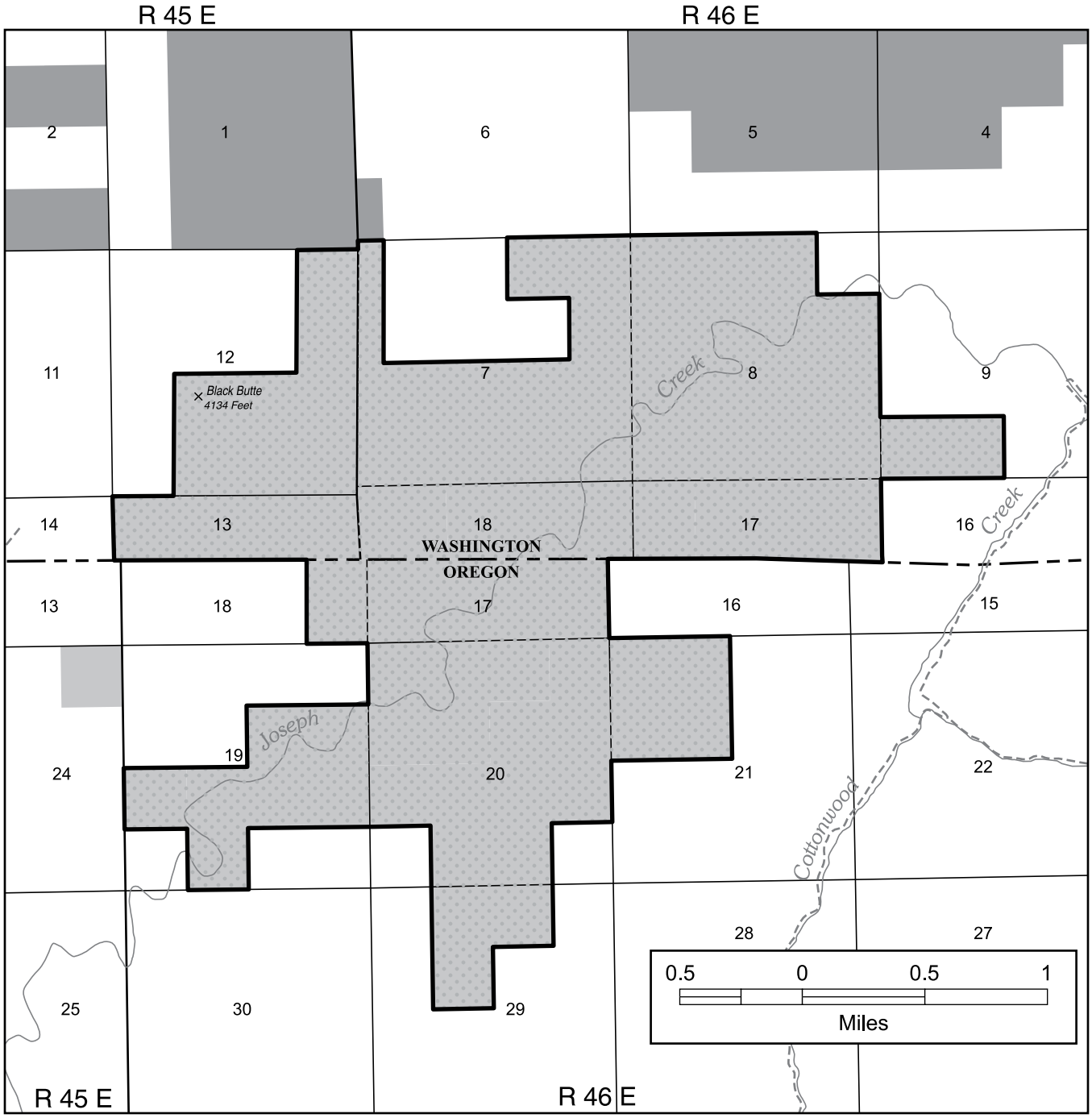
	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
MA 7.11	Off-road vehicle use will be limited to designated roads and trails.	The BLM would close all roads within the Oregon Trail ACEC except for those for the NHOTIC administrative site uses.				
MA 7.12	No surface occupancy restrictions will be applied to oil and gas leases and development, no mineral material development will be allowed.	The BLM would close these areas to all leasable minerals exploration and development.	The BLM would close these areas to all leasable minerals exploration and on the NHOTIC tract, and manage all other tracts as an avoidance area for leasable minerals.	Same as Alternative 1		
MA 7.13	Adjacent lands, or lands in the Oregon Trail GU, may be acquired to protect intact segments of the Oregon National Historic Trail; these lands would be incorporated into the ACEC, and the same special management prescriptions or restrictions will be applied.	The BLM would pursue to acquire lands adjacent to the Oregon Trail ACEC from willing landowners to protect intact segments of the Oregon National Historic Trail. If these were acquired and incorporated into the ACEC, the BLM would apply the same management prescriptions and/or restrictions on such lands that apply to public lands currently in the ACEC.				
MA 7.14	N/A	The BLM would ensure that management of the ACEC would be consistent with the following plans: Oregon Trail Comprehensive Management and Use Plan (BLM and NPS 1981) Comprehensive Management and Use Plan/Final EIS California National Historic Trail (NPS 1999) Pony Express National Historic Trail (NPS 1999) Management and Use Plan Update/ Final EIS Oregon National Historic Trail (NPS 1999) Mormon Pioneer National Historic Trail (NPS 1999) Oregon National Historic Trail Management Plan (BLM 1989)				

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
SHEEP MOUNTAIN ACEC						
Relevant and Important Values: Scenic qualities, wildlife habitat, and Bald eagle winter habitat						
Sheep Mountain ACEC Land Use Allocations (see Map 2-37)						
LUA 8	Public lands in the Sheep Mountain area (5,398 RMP; 5289) acres between Pine Creek and Brownlee Reservoir), including a portion of the Sheep Mountain WSA, are designated and will be managed as an ACEC to protect outstanding scenic qualities, and maintain or improve wildlife and crucial bald eagle winter habitat.	The BLM would continue to manage public lands in the Sheep Mountain area (5,289 acres) between Pine Creek and Brownlee Reservoir, including a portion of the Sheep Mountain WSA, as an ACEC to protect outstanding scenic qualities; maintain and improve wildlife and bald eagle, roosting, nesting and winter habitat; and protect ESA listed fish critical habitat areas.				
Sheep Mountain ACEC Management Actions						
MA 8.1	The ACEC will be managed to protect outstanding scenic qualities and maintain or improve wildlife and crucial bald eagle winter habitat.					
MA 8.2	Adjacent lands or inholdings may be acquired to benefit bald eagle habitat.	See MA 12 under *Management Actions Common to all ACECs*				
MA 8.3	Commercial timber harvest will be excluded on 200 acres.	See MA 14 under *Management Actions Common to all ACECs*				
MA 8.4	Motorized vehicle use will be limited to designated roads and trails. No roads and trails would be designated for motorized use in the WSA portion of the ACEC.					
MA 8.5	N/A	The BLM would continue the withdrawal from locatable and leasable mineral entry and exclude all land use authorizations within the WSA portion of the ACEC.				

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
HOMESTEAD ACEC						
Relevant and Important Values: Scenic qualities, wildlife habitat, and Bald eagle winter habitat, and sensitive plants habitat						
Homestead ACEC Land Use Allocations(see Map 2-38)						
LUA 9	BLM lands on the Snake River Breaks near Homestead (8,537 RMP acres; 8750 acres between Pine Creek and Nelson Creek) are designated and will be managed as an ACEC to protect outstanding scenic qualities, and wildlife, bald eagle and sensitive plant habitat.	The BLM would continue to manage public lands on the Snake River Breaks near Homestead (8,750 acres) between Pine Creek and Nelson Creek as an ACEC to protect outstanding scenic qualities, wildlife (e.g., bald eagle and critical deer winter range), and sensitive plant habitat.				
Homestead ACEC Management Actions						
MA 9.1	The area will be managed to meet forage and habitat requirements for game and non-game species, as recommended by ODFW.	The BLM would continue to manage the ACEC to protect scenic qualities, and maintain or improve wildlife, bald eagle (winter), and sensitive plant habitats.				
MA 9.2	Commercial timber harvest will be excluded on 600 acres.	See MA 12 under *Management Actions Common to all ACECs*				
MA 9.4	Seasonal restrictions will be applied to oil and gas exploration and development.	The BLM would continue the withdrawal from locatable and leasable mineral entry and exclude all land use authorizations within the WSA portion of the ACEC.				
MA 9.5	Motorized vehicle use will be limited to designated roads and trails. No roads or trails would be designated for motorized use in the WSA portion of the ACEC.					

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
SOUTH FORK OF THE WALLA WALLA RIVER ACEC						
Relevant and Important Values: Fisheries, wildlife and riparian habitats and Scenic qualities						
South Fork of the Walla Walla River ACEC Land Use Allocations (see Map 2-39)						
LUA 10	Public lands in the South Fork of the Walla Walla River (2040 acres) are designated as an ACEC to protect the fisheries, wildlife, riparian, and scenic values found within the area.	The BLM would continue to manage public lands in the South Fork of the Walla Walla River (2,040 acres) as an ACEC to protect the fisheries, wildlife, riparian, cultural, tribal, and scenic values in the area, and to protect ESA-listed salmonids.				
South Fork of the Walla Walla River ACEC Management Actions						
MA 10.1	Continue with management actions from the South Fork Walla Walla River Area Plan Amendment (BLM 1992)	The BLM would continue with management actions from South Fork Walla Walla River Area Plan Amendment (BLM 1992), with some additional management prescriptions (see below).				
MA 10.2	ROW grants and renewals shall be limited to the area necessary for operation and maintenance and will consider the protection of public safety and ensure any use authorized shall be consistent with the ACEC values as designated.	See MA 1 under *Management Actions Common to all ACECs*. The BLM would manage landowner access according to South Fork Walla Walla Landowner Access EA.				
MA 10.3	Surface occupancy would be prohibited for all fluid, gaseous,	The BLM would apply a “no surface occupancy” and avoidance area for all leasable minerals exploration and development and land use authorizations.				The BLM would close these areas to all leasable minerals

Table 2-25. Areas of Critical Environmental Concern (Existing)						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	salable, and leasable minerals. This would not include existing leases or permits.					exploration and development and all land use authorizations.
MA 10.4	Prohibit development of mineral material resources within the ACEC boundary, unless needed on an "emergency basis," to protect ACEC values.	*See MA 10.3 above*				
MA 10.5	N/A	The BLM would maintain, enhance, and protected listed salmonid habitats in cooperation with Confederated Tribes Of The Umatilla Indian Reservation, USFS, ODFW, USFWS, and NMFS.				
MA10.6	N/A	The BLM would ensure that all management actions within riparian conservation areas are consistent with the ARMS (Appendix 2.2).				
MA10.7	N/A	The BLM would restrict hydropower development to protect resources for which the ACEC was designated.				
MA10.8	Prohibit development of mineral material resources within the ACEC boundary, unless needed on an "emergency basis," to protect ACEC values. This area has no known potential for the occurrence of locatable mineral resources; therefore, withdrawal from mineral entry under the U.S. Mining laws, as amended, is not proposed	*See above, MA 10.3*				
MA10.9	Assure chemicals used for pest management do not harm the wintering ladybug populations.					



Legend

- Joseph Creek ONA / ACEC
- Road
- Perennial Stream
- Other Existing ACEC
- Other BLM Administered Land

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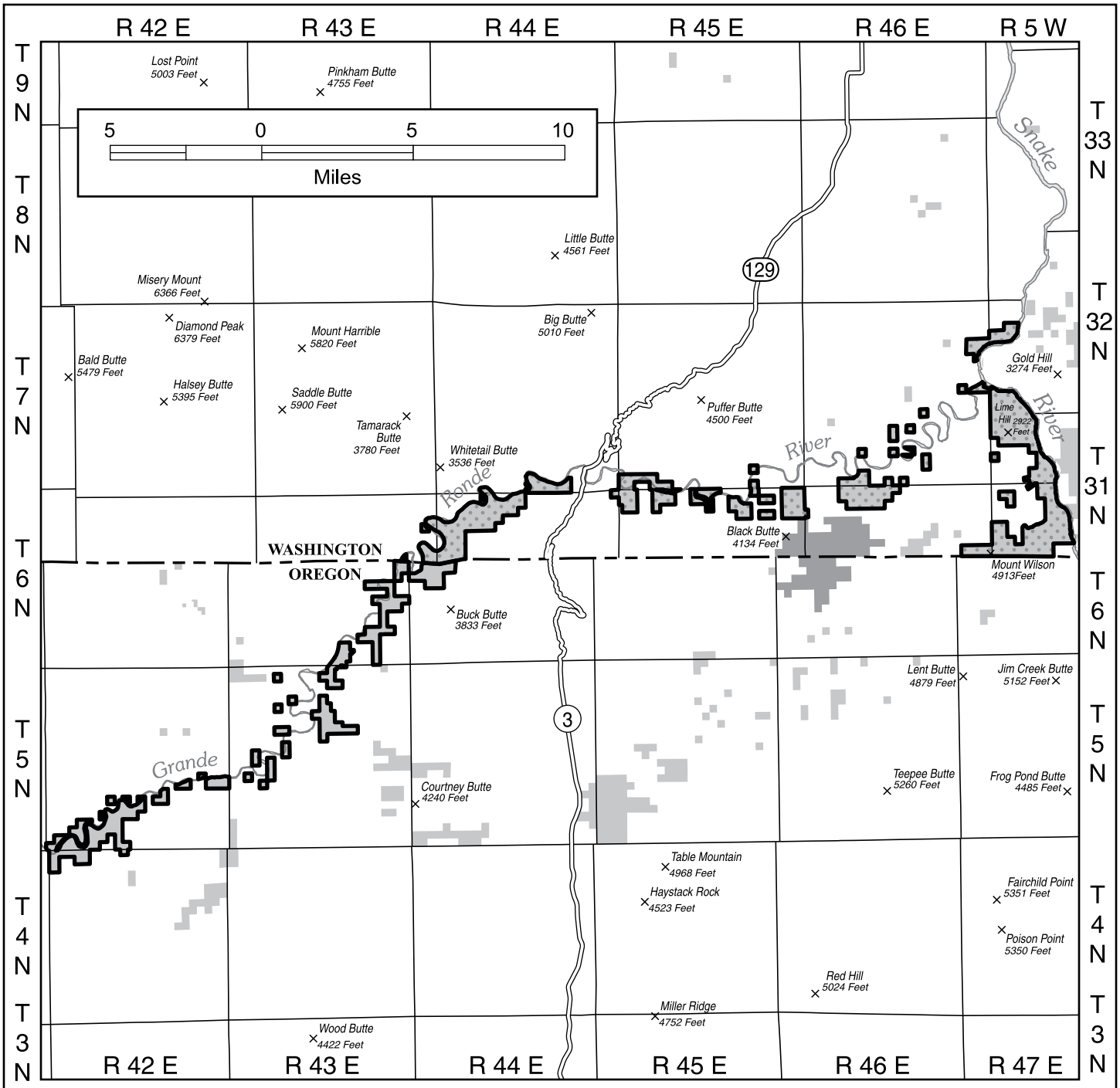
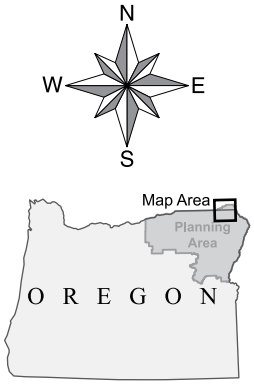
MAP 2.27: Joseph Creek Area of Critical Environmental Concern

M09-05-02



Legend

- Grande Ronde ACEC
- Washington Grande Ronde ACEC
- 129 State Highway
- Major River
- Other Existing ACEC
- BLM Administered Land



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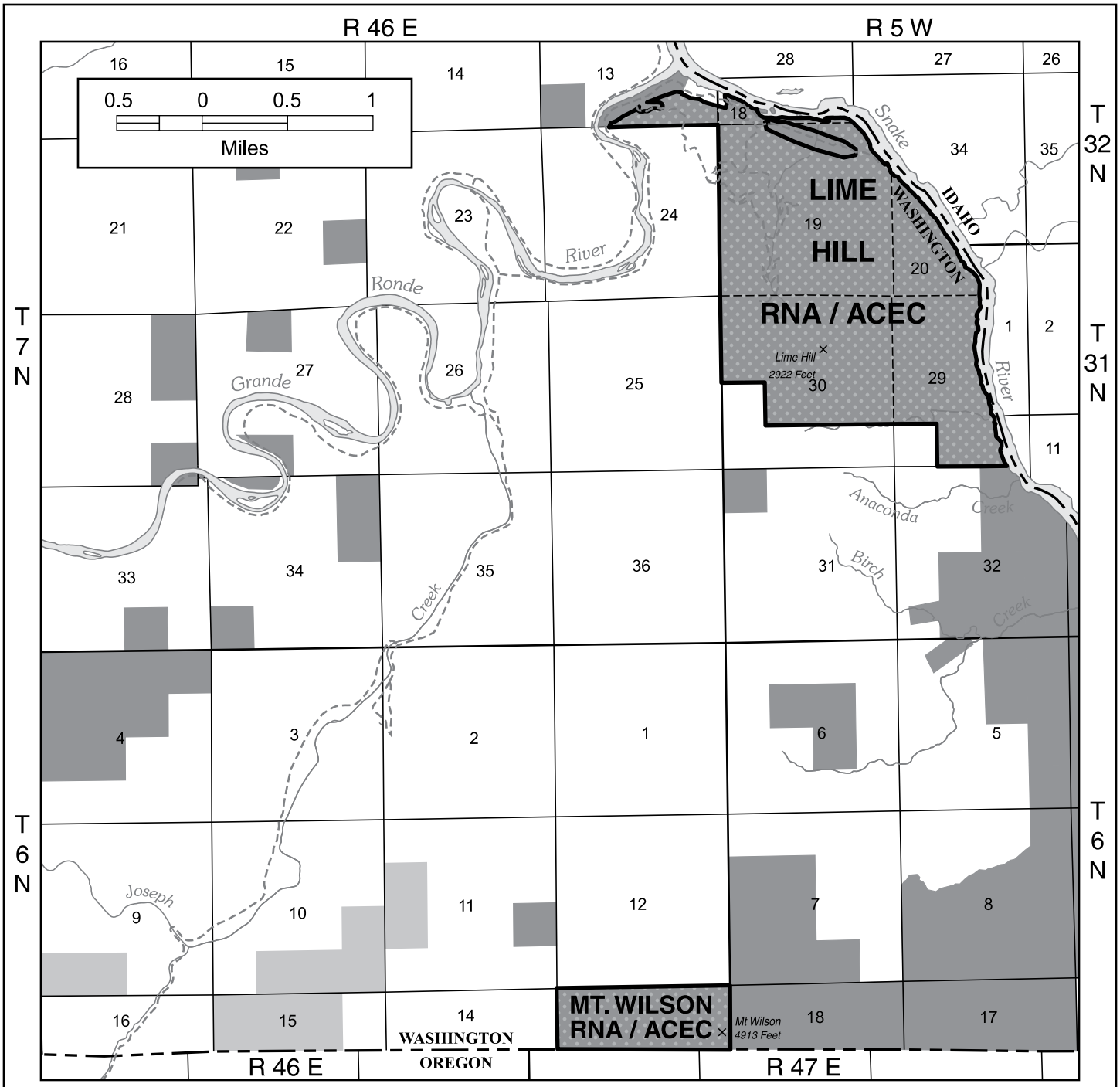
MAP 2.28: Grande Ronde Area of Critical Environmental Concern

M09-05-02



Legend

- Proposed RNA/ACEC
- Road
- Major River
- Other Perennial River or Stream
- Grande Ronde Existing ACEC
- Other BLM Administered Land

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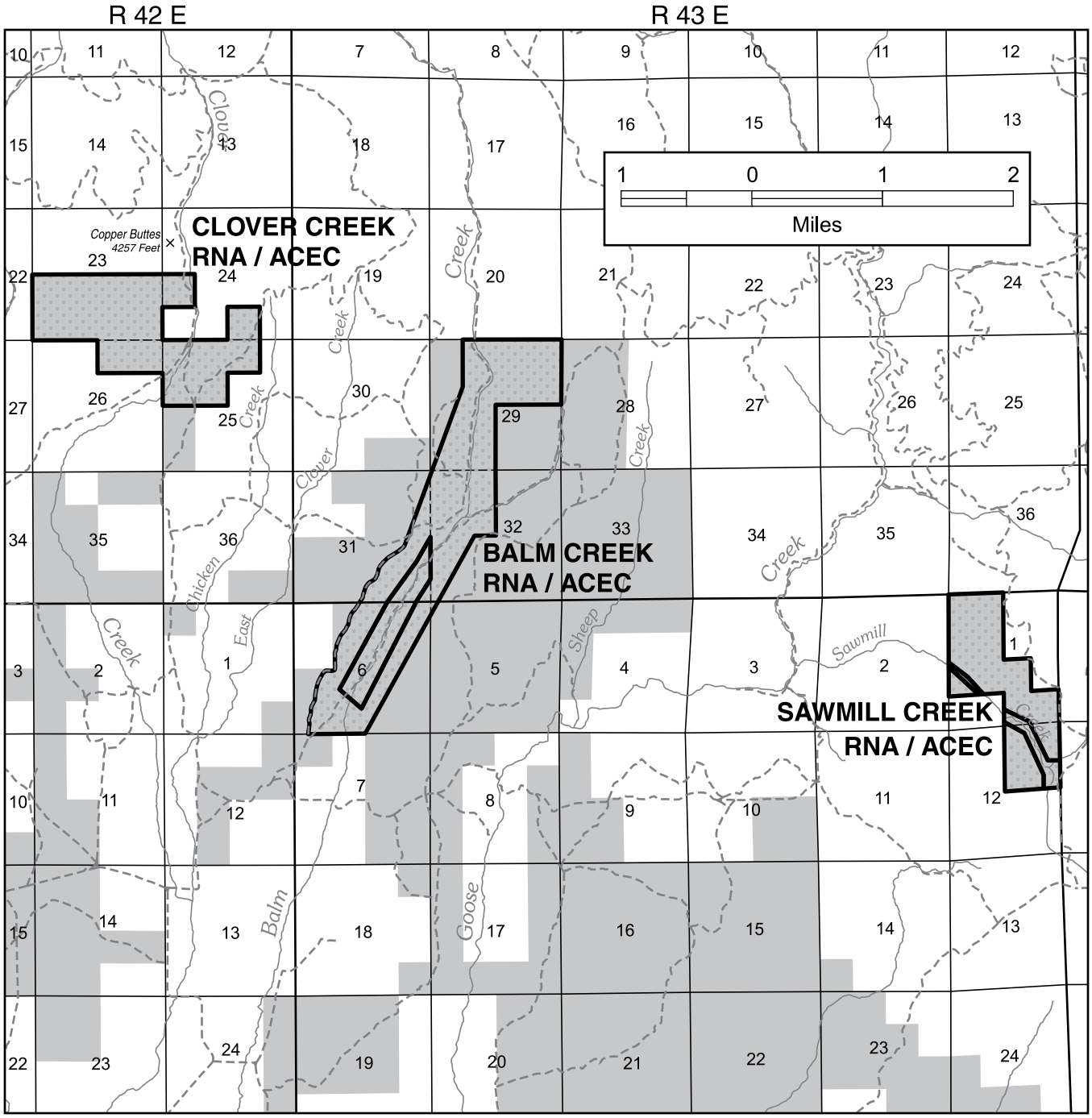
MAP 2.29: Proposed Lime Hill and Mt. Wilson Areas of Critical Environmental Concern M09-05-02



Legend

- Keating Riparian ACEC*
- Road
- Perennial Stream
- Other BLM Administered Land

**Clover Creek not an ACEC in Action Alternatives*

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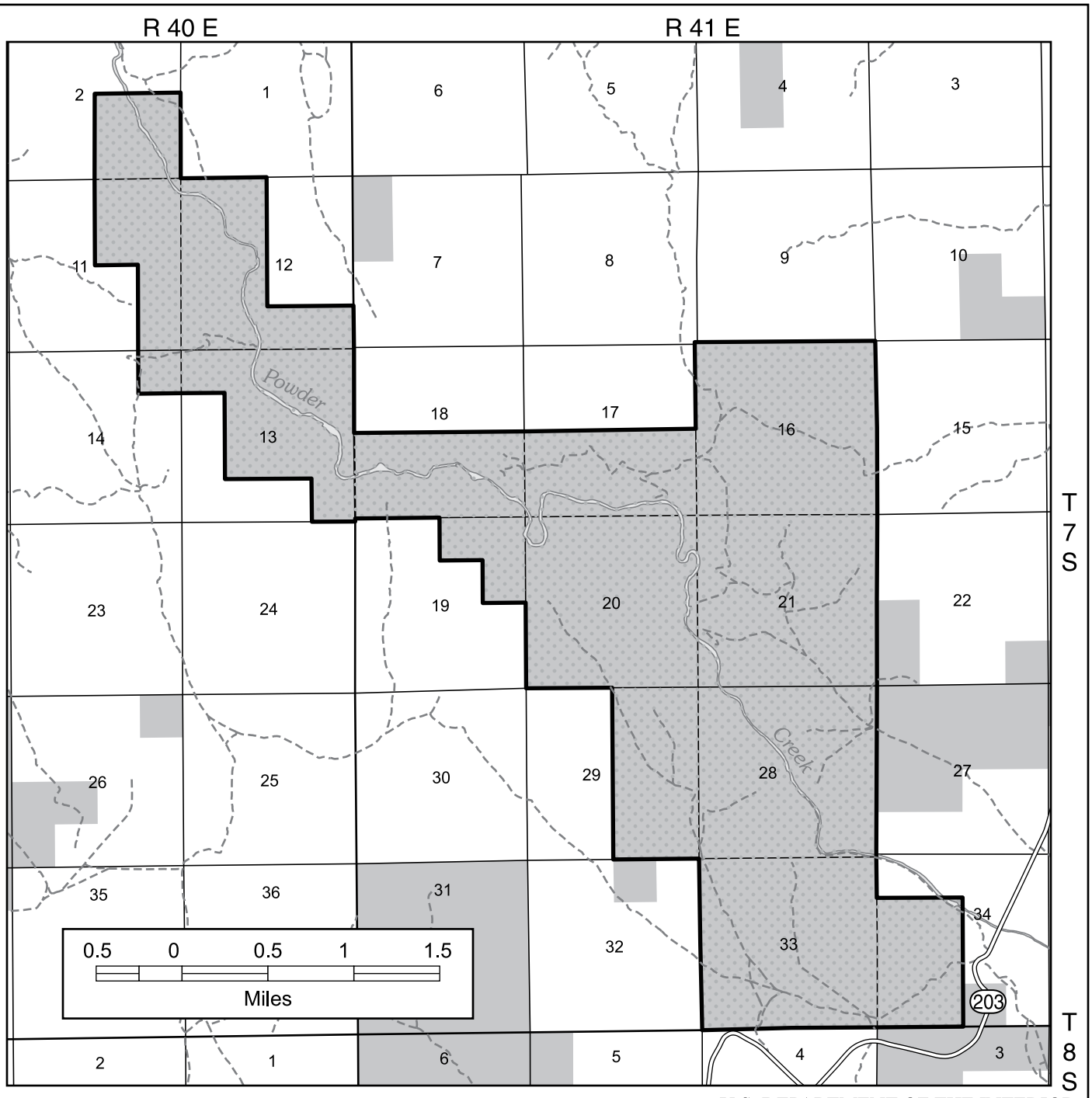
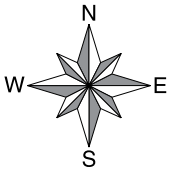
MAP 2.30: Keating Riparian Area of Critical Environmental Concern

M09-05-02



Legend

- Powder River Canyon ACEC
- 203 State Highway
- Other Road
- Major River
- BLM Administered Land



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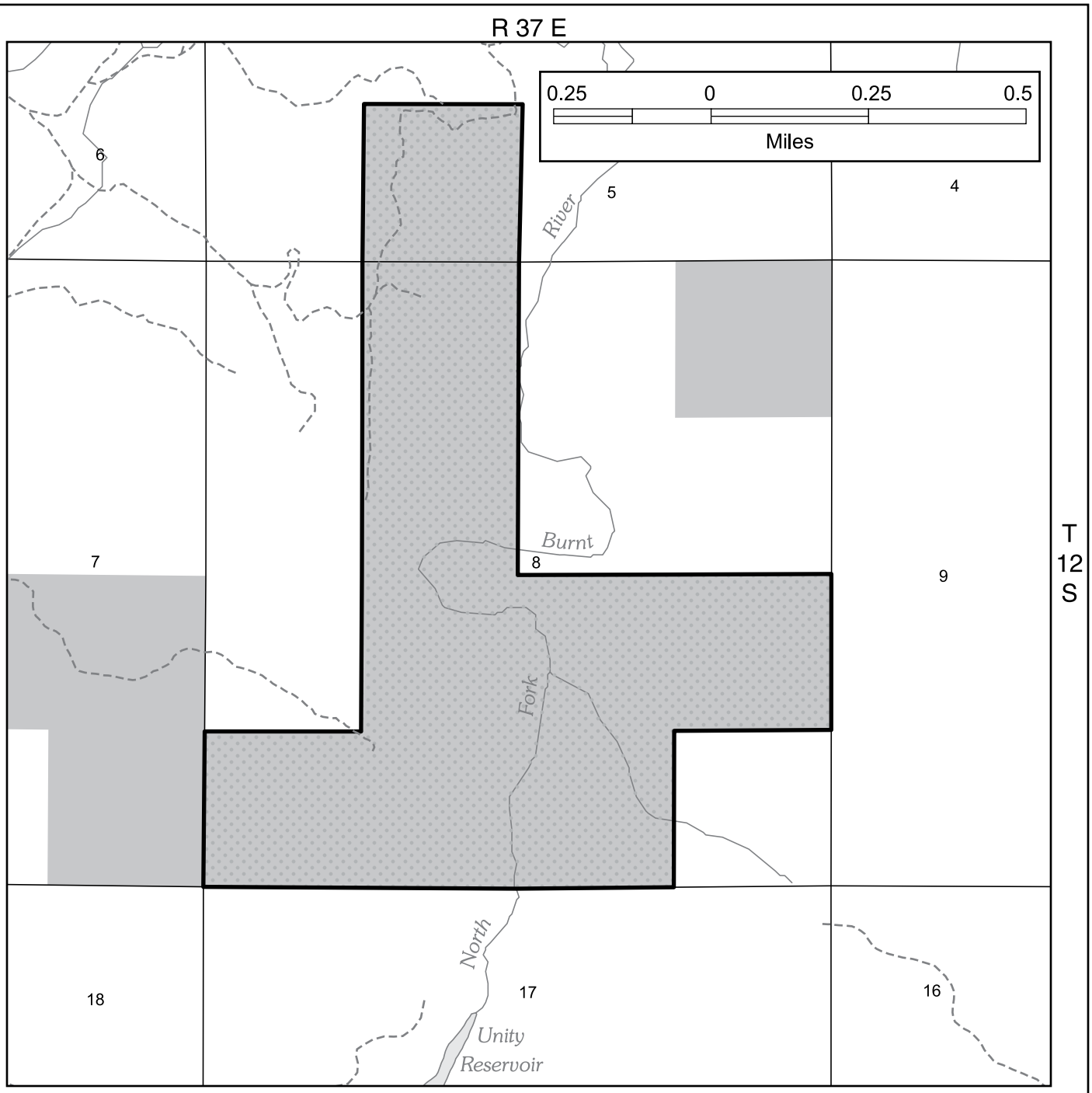
MAP 2.31: Powder River Canyon Area of Critical Environmental Concern

M09-05-02



Legend

- Unity Bald Eagle Nest Habitat ACEC
- Road
- Perennial River or Stream
- Waterbody
- BLM Administered Land

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MAP 2.32: Unity Bald Eagle Nest Habitat Area of Critical Environmental Concern

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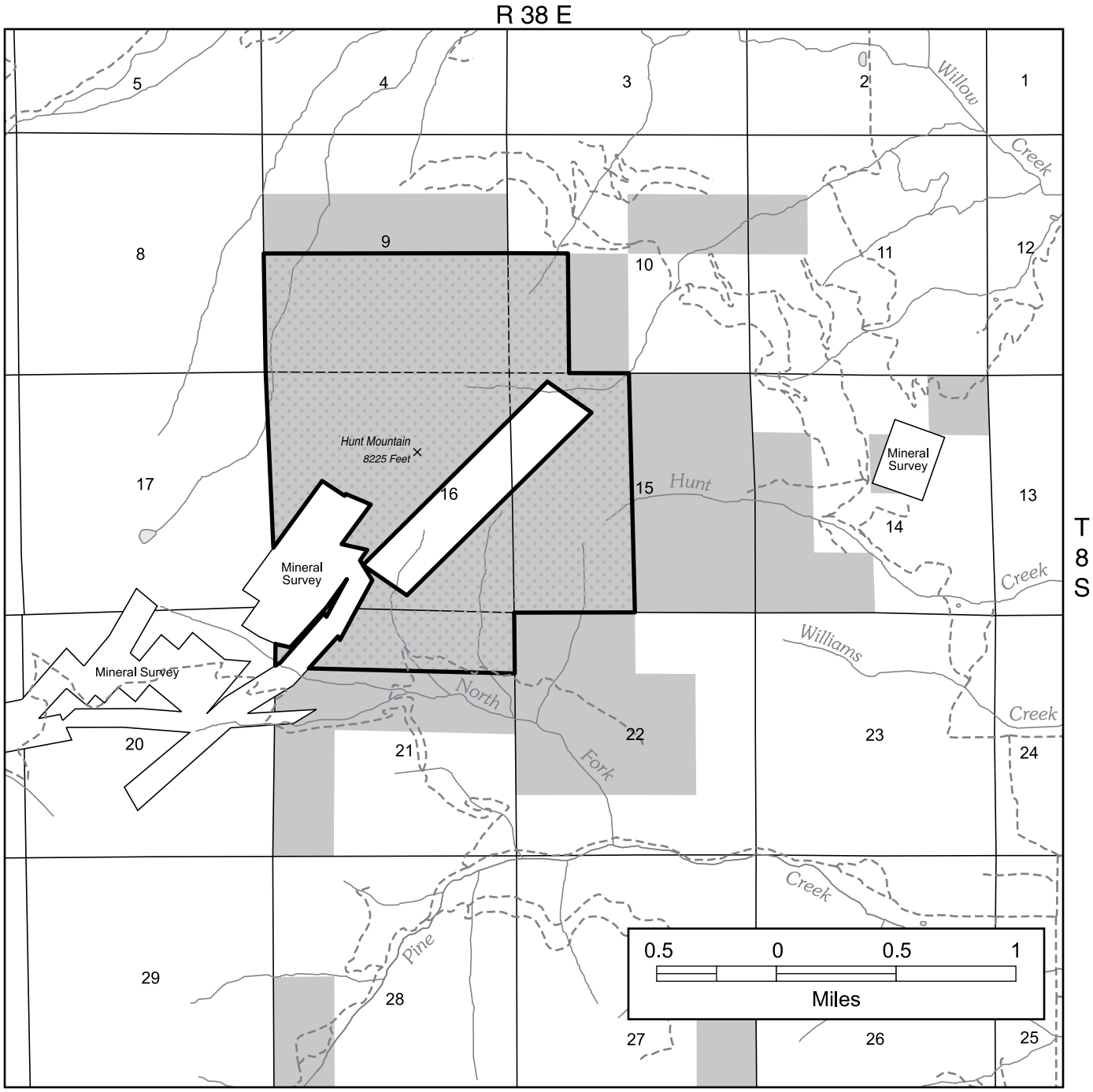

Legend

- Hunt Mountain ACEC
- Road
- Perennial River or Stream
- Waterbody
- BLM Administered Land

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MAP 2.33: Hunt Mountain Area of Critical Environmental Concern

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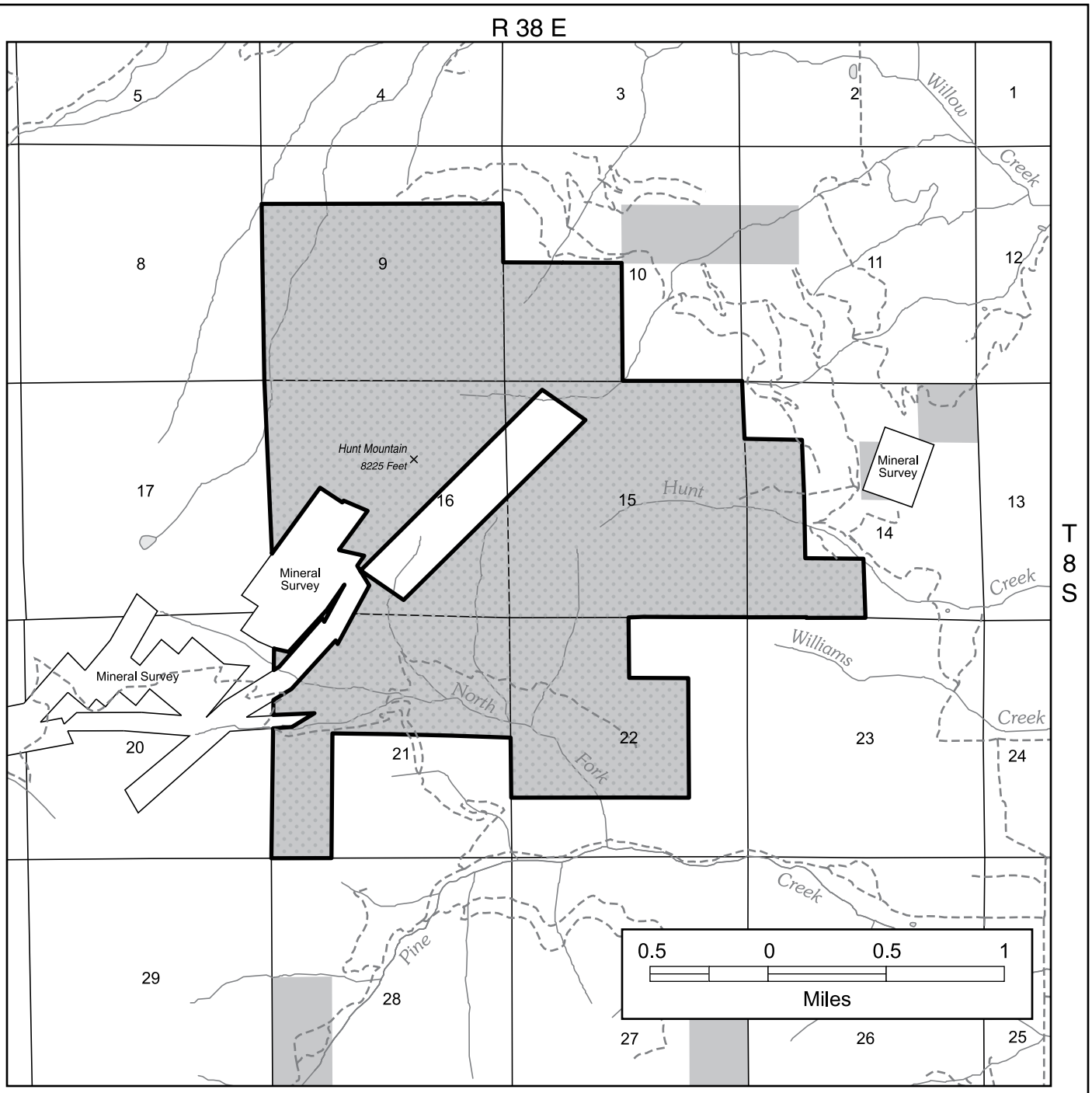
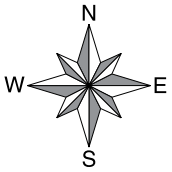


Legend

- Proposed Hunt Mountain ACEC
- Road
- Perennial River or Stream
- Waterbody
- BLM Administered Land



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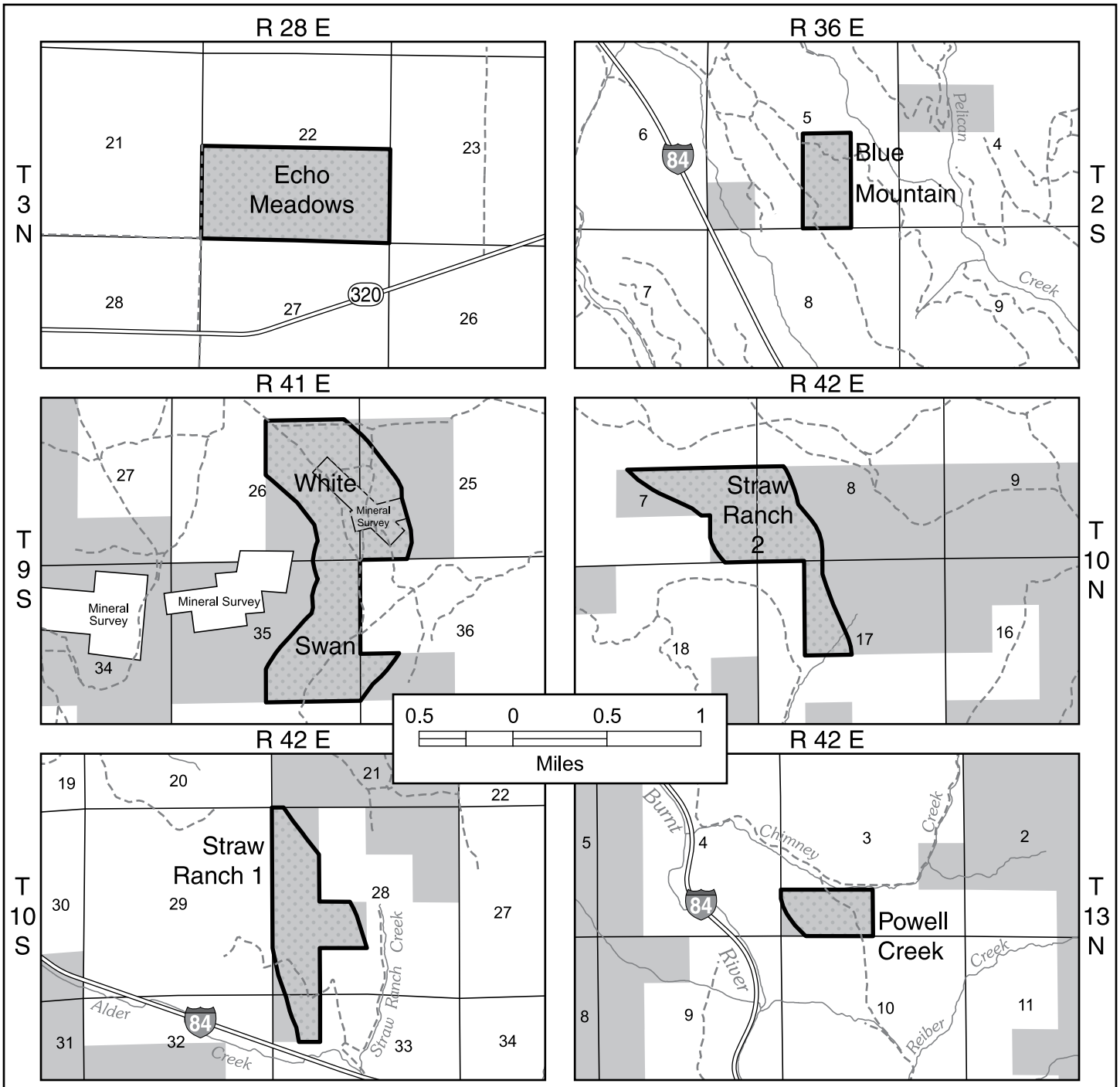
MAP 2.34: Proposed Hunt Mountain Area of Critical Environmental Concern

M09-05-02



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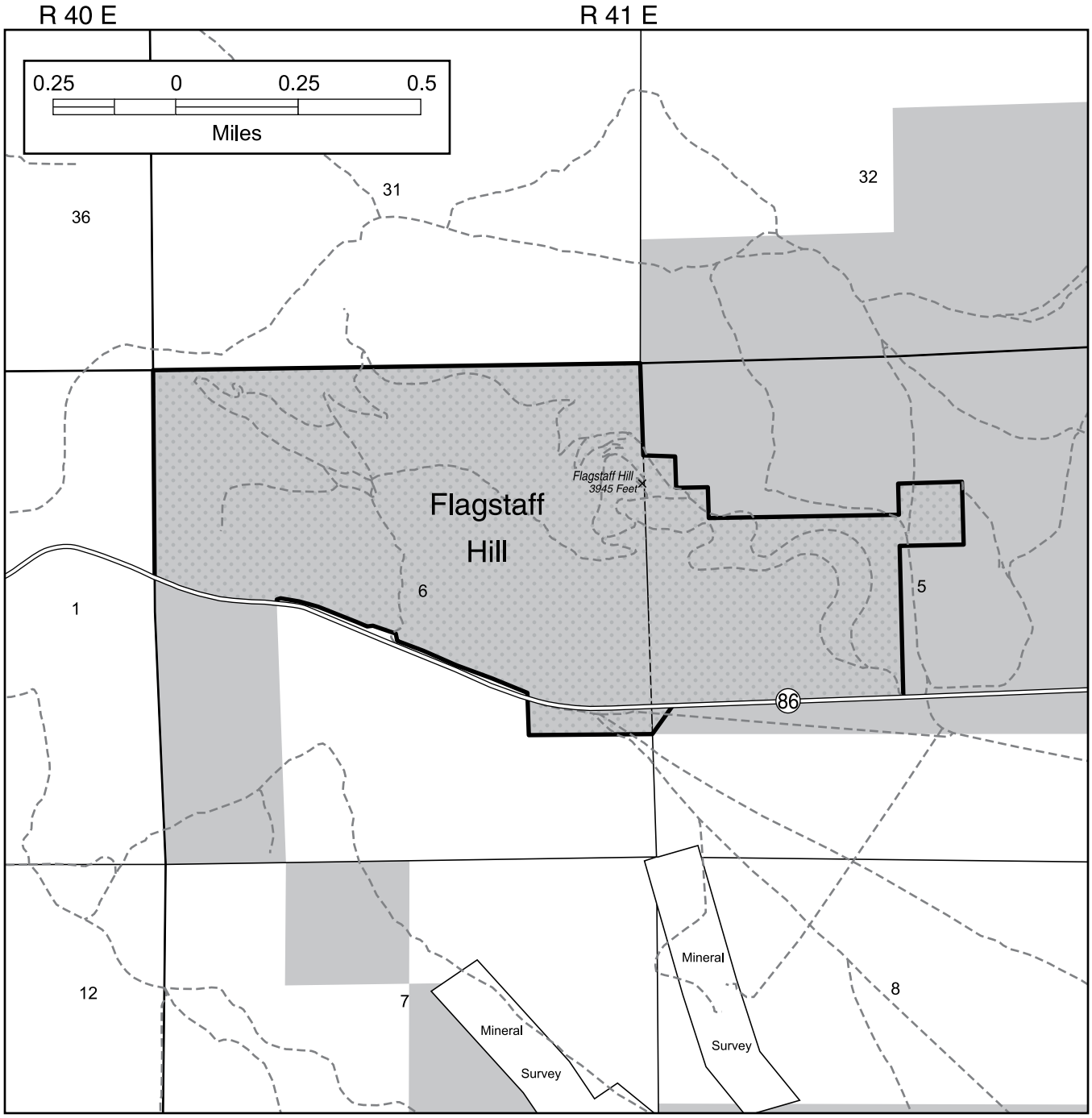
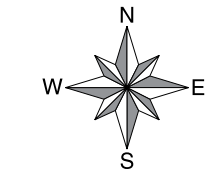
MAP 2.35: Oregon Trail Area of Critical Environmental Concern

M09-05-02



Legend

- Oregon Trail ACEC (NHOTIC)
- 86 State Highway
- Road
- BLM Administered Land



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MAP 2.36: Oregon Trail Area of Critical Environmental Concern (NHOTIC)

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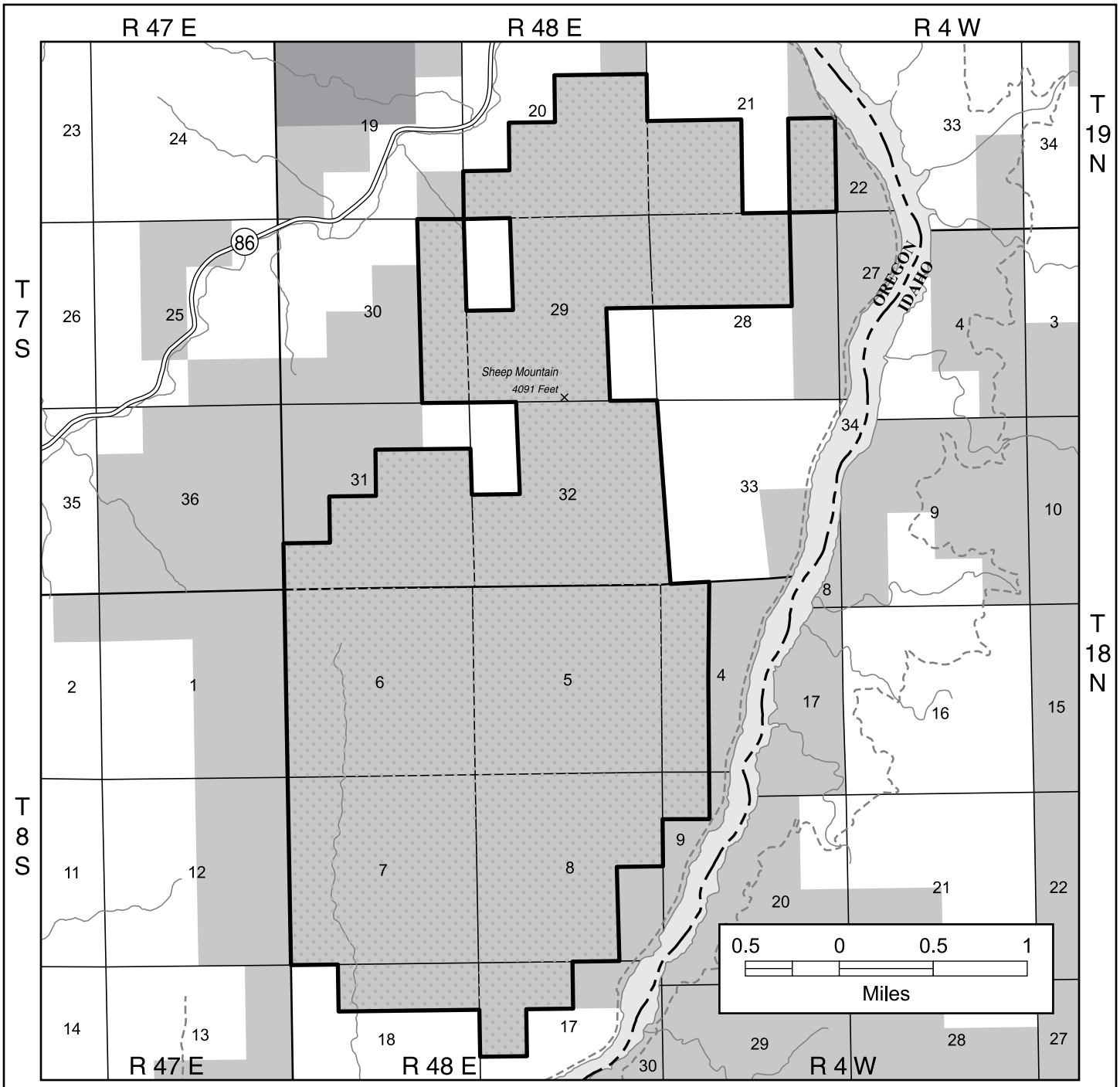

Legend

- Sheep Mountain ACEC
- State Highway
- Road
- Major River
- Perennial River or Stream
- Other Existing ACEC
- BLM Administered Land

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MAP 2.37: Sheep Mountain Area of Critical Environmental Concern

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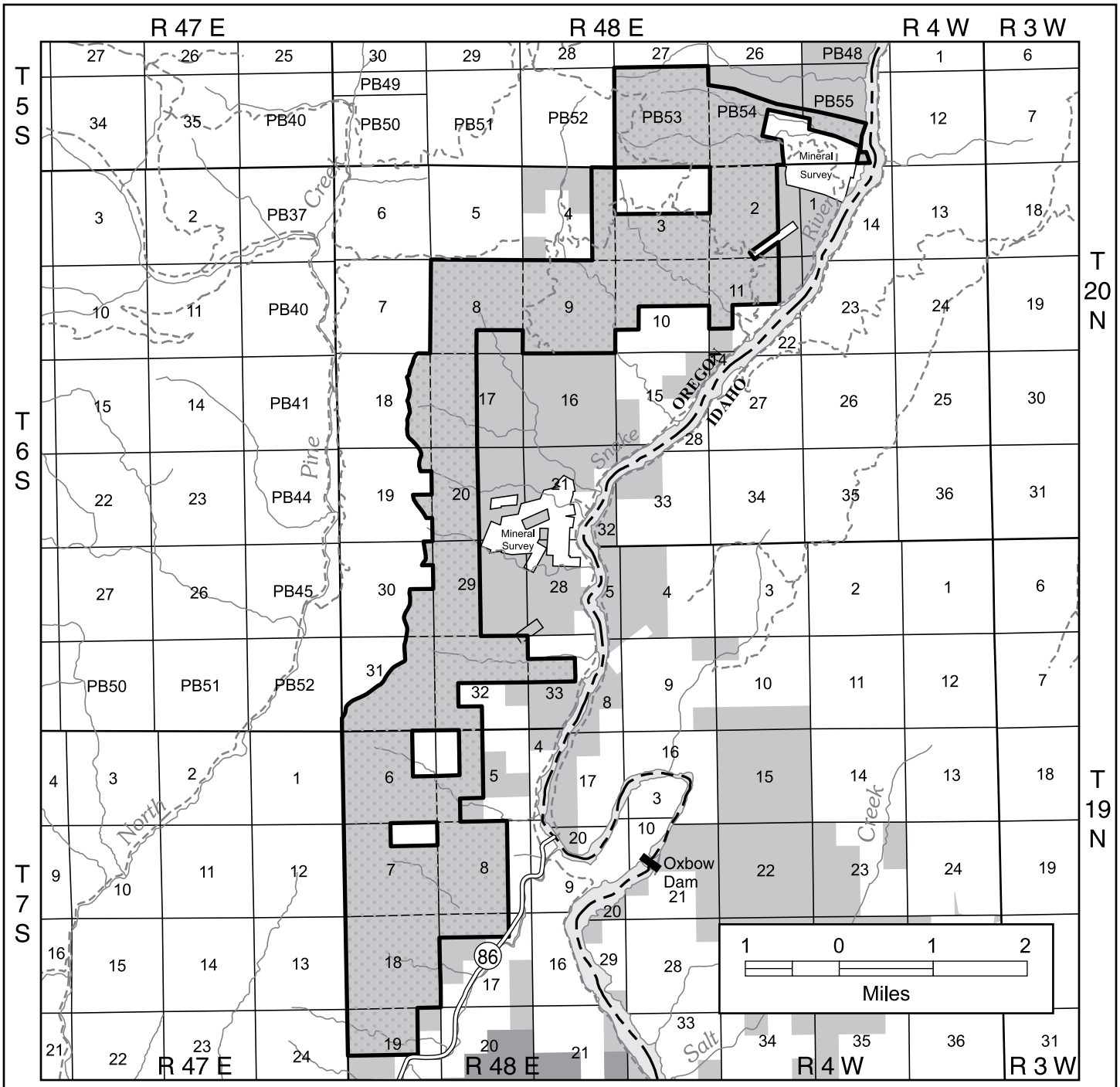

Legend

- Homestead ACEC
- State Highway
- Road
- Major River
- Perennial River or Stream
- Other Existing ACEC
- BLM Administered Land

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MAP 2.38: Homestead Area of Critical Environmental Concern

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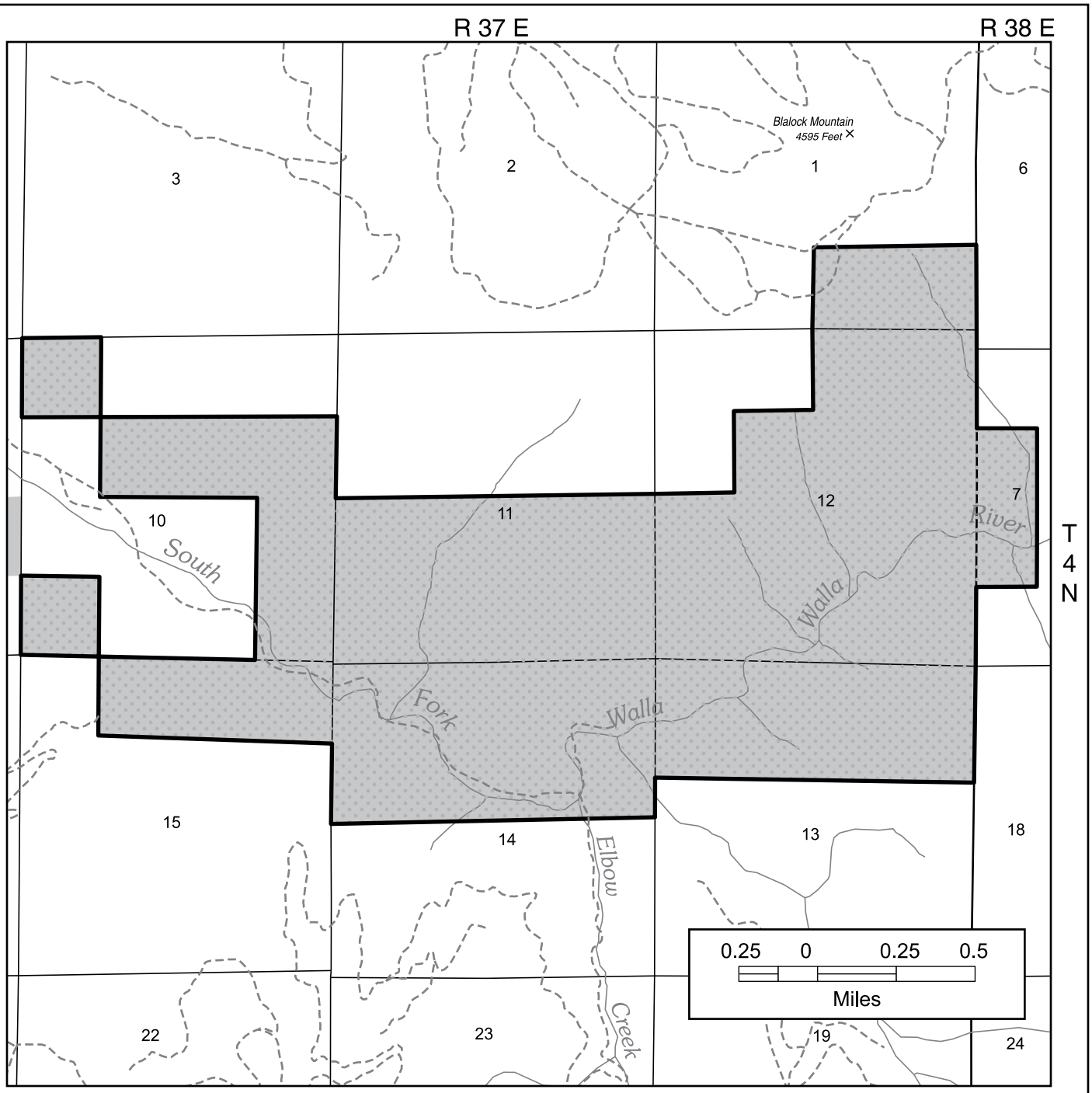
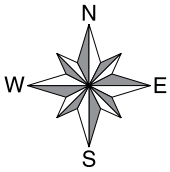
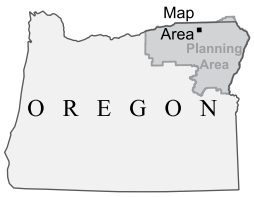


Legend

- South Fork Walla Walla ACEC
- Perennial River or Stream
- BLM Administered Land





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MAP 2.39: South Fork Walla Walla Area of Critical Environmental Concern

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Table 2-26. Areas of Critical Environmental Concern (Proposed)					
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MAGPIE PEAK ACEC/RNA					
Relevant and Important Values: Oregon Natural Heritage cell described as valley margin shrubland/grassland with big sagebrush, threetip sagebrush, and bunchgrasses as well as sage-grouse habitat.					
Magpie Peak ACEC/RNA Land Use Allocations (see Map 2-40)					
LUA 11	The BLM would designate public lands to the east of Magpie Peak (574 acres) as an ACEC and RNA to protect Oregon Natural Heritage cell described as valley margin shrubland/grassland with big sagebrush, threetip sagebrush, and bunchgrasses as well as sage-grouse habitat.	The BLM would not designate Magpie Peak ACEC/RNA.	Same as Alternative 1		
Magpie Peak ACEC/RNA Management Actions (Applies only to Alternatives 1, 3, 4, and 5)					
See Common to All ACECs in Table 2-25					
MA 11.1	The BLM would pursue acquisition of subsurface rights from willing owners on 24 acres (SE ¼ of SE ¼ Section 27 T 7 S R 40 E) on the southeast corner of the ACEC/RNA. If they become available and are acquired by the BLM, such lands would be added to the ACEC/RNA.	N/A	Same as Alternative 1		
MA 11.2	The BLM would pursue a withdrawal of 574 acres from mineral entry.	NA	Same as Alternative 1		
MA 11.3	The BLM would recognize the ACEC as an avoidance area for all leasable minerals exploration and development	NA	Same as Alternative 1		The BLM would exclude all leasable minerals exploration and development and all land use authorizations.

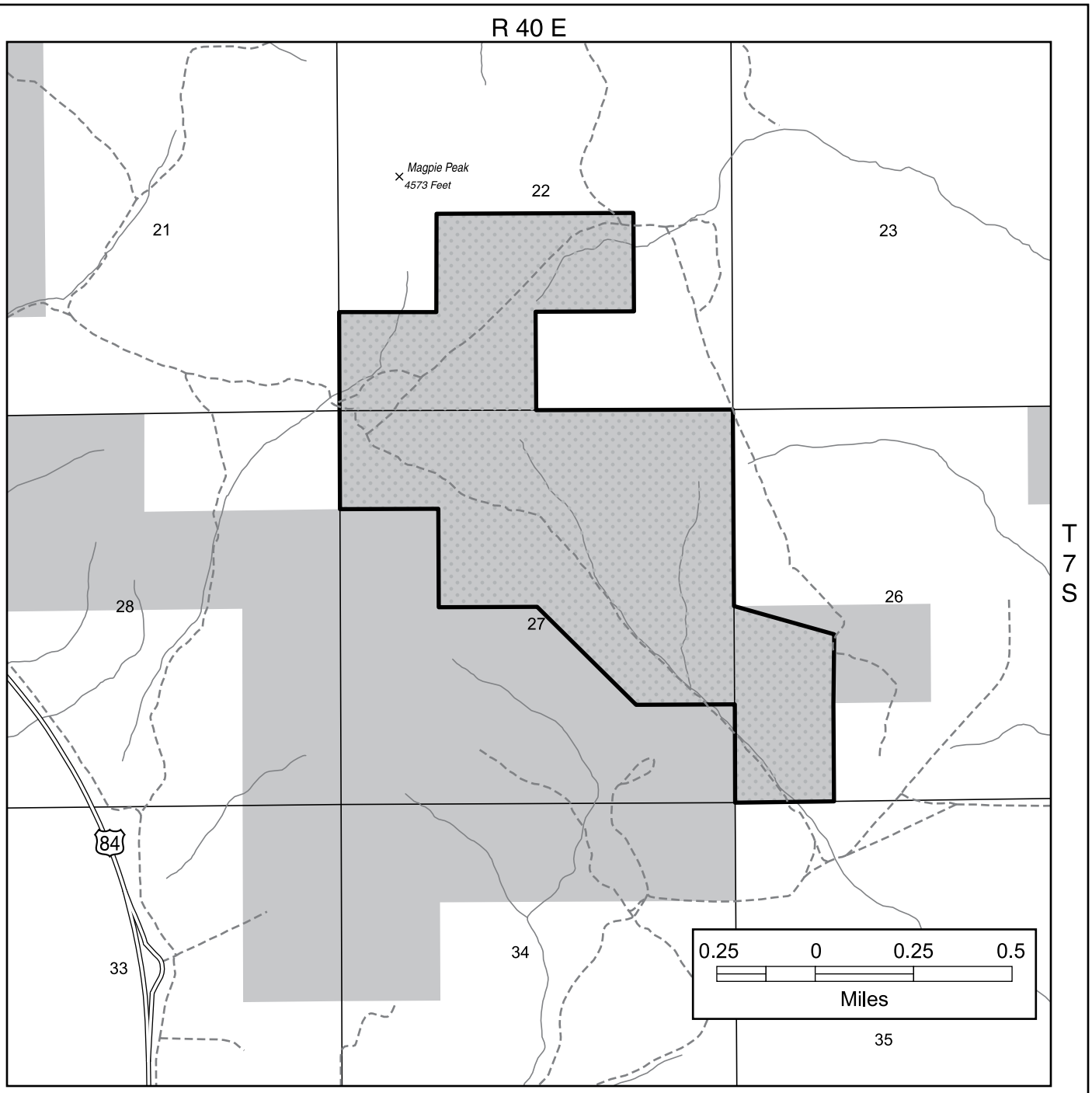
Table 2-26. Areas of Critical Environmental Concern (Proposed)					
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	and land use authorizations.				
MA 11.4	The BLM would limit motorized vehicle travel to designated roads and trails.	N/A	Same as Alternative 1		
MA 11.5	The BLM would monitor the effects of livestock grazing to assure that the plant community's natural processes are maintained or enhanced. Existing grazing leases would continue but may be adjusted to ensure ACEC values are managed and protected.	N/A	Same as Alternative 1		
DENNY FLAT ACEC					
Relevant and Important Values: Special status plant species, Cusick's lupine, sage-grouse habitat, paleontological sites, and fragile and easily erodible soils.					
Denny Flat RNA/ACEC Land Use Allocations (see Map 2-41)					
See Common to All ACECs in Table 2-25					
LUA 12	The BLM would designate public lands in Denny Flat, between Unity and the Burnt River (3,977 acres), as an ACEC to protect special status plant species, Cusick's lupine, sage-grouse habitat, paleontological sites, and fragile and easily erodible soils.	The BLM would not designate Denny Flat RNA/ACEC.		Same as Alternative 1, except that the BLM would designate 3,977 acres in Denny Flat as an ACEC/RNA.	
Denny Flat RNA/ACEC Management Actions (Applies only to Alternatives 1, 4, and 5)					
MA 12.1	The BLM would limit motorized and mechanized vehicle travel to designated roads and trails that avoid Cusick's lupine sites.	N/A		Same as Alternative 1	

Table 2-26. Areas of Critical Environmental Concern (Proposed)					
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
MA 12.2	The BLM would limit seasons of use for motorized vehicles to times when the soils are not wet, making them less susceptible to damage and erosion.	N/A		Same as Alternative 1	
MA 12.3	The BLM would continue existing grazing leases, adjusting them if necessary to ensure ACEC values are managed and protected.	N/A		Same as Alternative 1	
MA 12.4	The BLM may acquire adjacent private lands that contain habitat for Cusick's from willing landowners when available and if there are sufficient funds.	N/A		Same as Alternative 1	
MA 12.5	The BLM would consider juniper control on a case-by-case basis if needed to protect relevant and important values.	N/A		Same as Alternative 1	
MA 12.7	The BLM would avoid all land use authorizations including energy and non-energy ROWs, communication site leases, and other permits.	N/A		The BLM would exclude all land use authorizations including energy and non-energy ROWs, communication site leases, and other permits.	
VIRTUE FLAT SAGE-GROUSE HABITAT ACEC					
Relevant and Important Values: sage-grouse habitat and the area's Wyoming big sagebrush ecosystem					
Virtue Flat Sage-grouse Habitat ACEC Land Use Allocations (see Map 2-42)					
See Common to All ACECs in Table 2-25					
LUA 13	The BLM would designate public lands in Virtue Flat	The BLM would not designate the Virtue Flat Sage-grouse Habitat ACEC.		Same as Alternative 1	

Table 2-26. Areas of Critical Environmental Concern (Proposed)					
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	south of highway 86, between Flagstaff Hill and Ritter Creek (42,022 acres), but not including the Virtue Flat OHV play area, as an ACEC to protect sage-grouse habitat and the area's Wyoming big sagebrush ecosystem.				
Virtue Flat Sage-grouse Habitat Management Actions					
MA 13.1	The BLM would limit motorized and mechanized vehicles to designated roads and trails.	N/A		The BLM would close the ACEC to all vehicle traffic except for county roads year round.	Same as Alternative 1
MA 13.2	The BLM would not allow the development of new OHV recreational areas within the ACEC boundaries.	N/A		Same as Alternative 1	
MA 13.3	The BLM would allow the rehabilitation and/or barricade and mitigation of OHV violations. The BLM would close the "sand-trap" area in R41E, T08S Sec. 17 and parts of Sec. 18 and 7 to OHV use.	N/A		Same as Alternative 1	
MA 13.4	The BLM would not implement sage-grouse habitat restoration projects within the OHV area.	N/A		Same as Alternative 1	
MA 13.5	The BLM would exclude land use authorizations developments and leasable mineral exploration and	N/A		Same as Alternative 1	

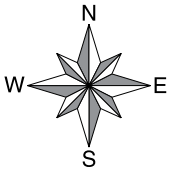
Table 2-26. Areas of Critical Environmental Concern (Proposed)					
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	development within the ACEC.				
MA 13.6	The BLM would pursue the withdrawal from mineral entry on 13,795 acres within the ACEC.	NA		Same as Alternative 1	The BLM would pursue the withdrawal from mineral entry on 42,022 acres within the ACEC.
MA 13.7	The BLM would patrol the ACEC regularly and provide education on the ACEC requirements at all public information distribution areas.	N/A		Same as Alternative 1	
MA 13.8	The BLM would apply and enforce seasonal restrictions such as no vehicle traffic, except for county roads and administrative purposes, before sunrise to 10:00 a.m. during the months of February through May.	N/A		The BLM would close the ACEC to all vehicle traffic, except for county roads, year round.	Same as Alternative 1
MA 13.9	The BLM would allow existing grazing leases to continue but may adjust them to ensure ACEC values are managed and protected.	N/A		Same as Alternative 1	
SNAKE RIVER GOLDENWEED ACEC/RNA					
Relevant and Important Values: Snake River goldenweed					
Snake River Goldenweed ACEC/RNA Land Use Allocations (see Map 2-43)					
LUA 14	The BLM would designate public lands (235 acres) near Powell Creek northeast of Lime Hill (Baker County) as an ACEC and RNA to protect Snake River goldenweed.	The BLM would not designate the Snake River Goldenweed ACEC/RNA.	Same as Alternative 1		

Table 2-26. Areas of Critical Environmental Concern (Proposed)					
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Snake River Goldenweed ACEC/RNA Management Actions (Applies only to Alternatives 1, 3,4, and 5)					
See Common to All ACECs in Table 2-25					
MA 14.1	The BLM would fence 200 acres of the ACEC/RNA and exclude livestock grazing from this parcel. A new fence would be built to tie into the existing fence on the north and west sides.	N/A	Same as Alternative 1		
MA 14.2	The BLM could allow livestock grazing, if necessary, to achieve ACEC/RNA objectives.	N/A	Same as Alternative 1		
MA 14.3	The BLM would require the avoidance of all land use authorizations including energy and non-energy ROWs, communication site leases, and other permits.	NA	Same as Alternative 1		The BLM would exclude all land use authorizations including energy and non-energy ROWs, communication site leases, and other permits.



Legend

- Proposed Magpie Peak RNA/ACEC
- 84 Federal Highway
- Other Road
- Stream
- BLM Administered Land



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MAP 2.40: Proposed Magpie Peak Area of Critical Environmental Concern

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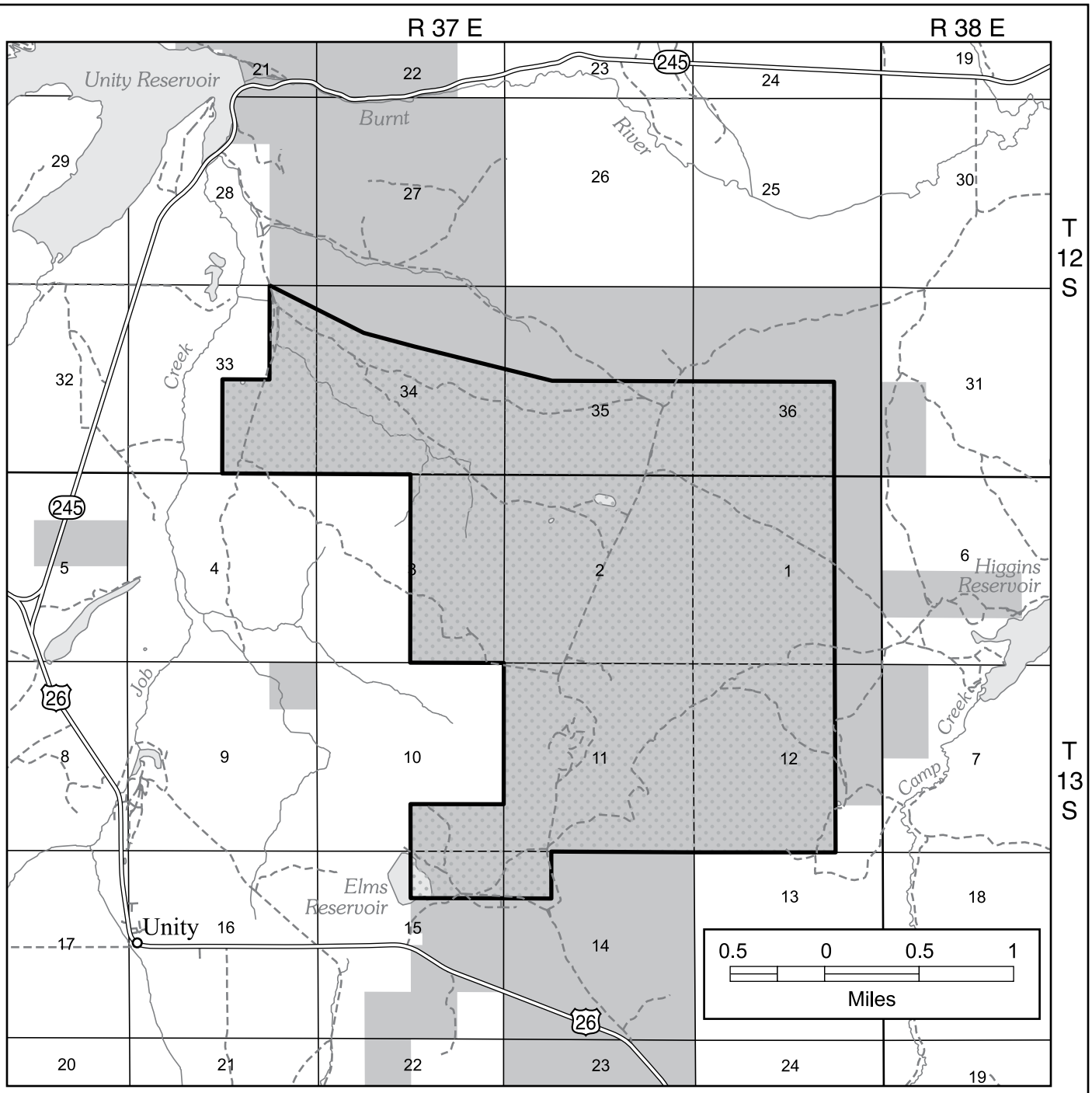
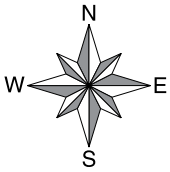


Legend

- Proposed Denny Flat RNA/ACEC
- 26 Federal Highway
- 245 State Highway
- Other Road
- Perennial River or Stream
- Waterbody
- BLM Administered Land



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MAP 2.41: Proposed Denny Flat Area of Critical Environmental Concern

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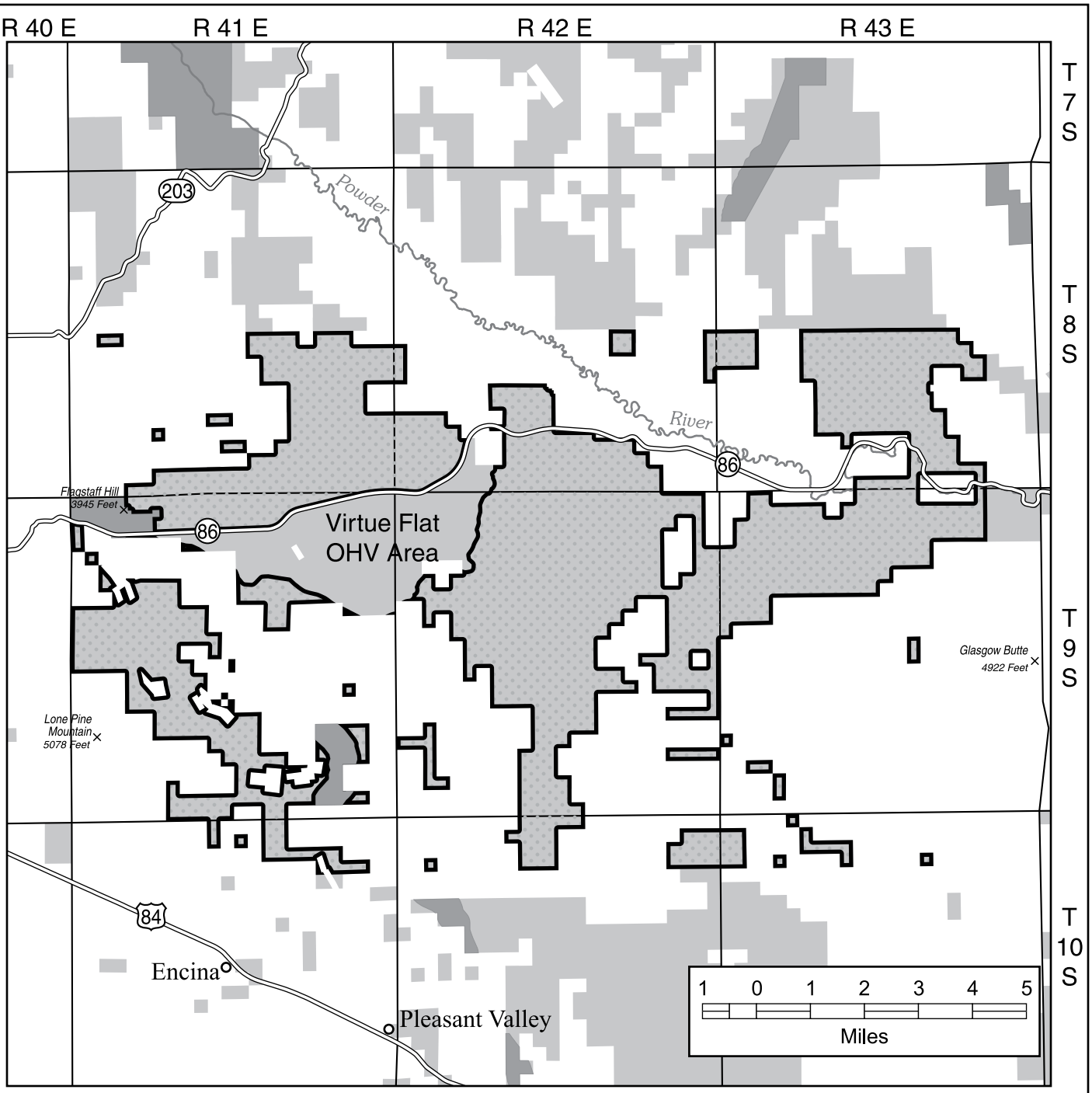

Legend

- Proposed Virtue Flat ACEC
- 84 Federal Highway
- 203 State Highway
- Major River
- Existing ACEC
- Other BLM Administered Land

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MAP 2.42: Proposed Virtue Flat Area of Critical Environmental Concern

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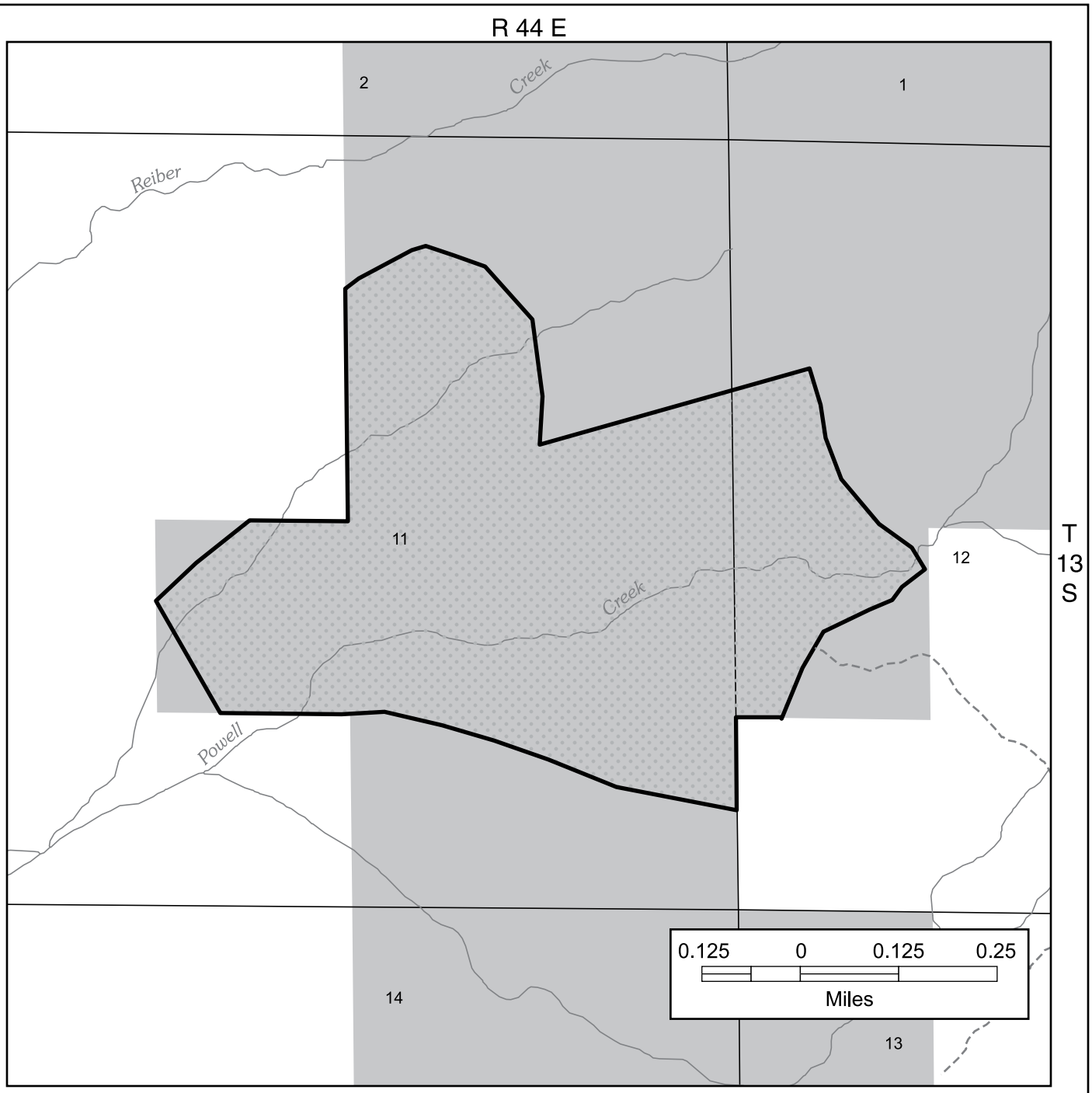

Legend

- Proposed Snake River Goldenweed RNA/ACEC
- Road
- Stream
- BLM Administered Land

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MAP 2.43: Proposed Snake River Goldenweed Area of Critical Environmental Concern M09-05-02

Table 2-27. Wild And Scenic Rivers

	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Goal 1	N/A	Maintain management of currently designated WSRs and develop management plans for rivers determined to be suitable for inclusion into the National WSR System through the eligibility and suitability process as follows: Evaluate each waterway segment in the study area to determine if it is eligible for inclusion into the National WSR System. Tentatively classify each segment determined eligible as wild, scenic, or recreational. Identify and make recommendations for interim protection for those waterways determined suitable. Determine if any of those waterway segments that meet the eligibility criteria also meet the WSR suitability factors.				
Obj. 1	Use of the Wallowa, Grande Ronde, and Powder WSRs would not impact the outstandingly remarkable values for which the rivers were designated. Maintain or enhance the outstandingly remarkable values of eligible rivers.	Protect or enhance the outstandingly remarkable values of the existing Wallowa, Grande Ronde, and Powder WSRs and the section of Joseph Creek found to be administratively suitable for inclusion into the National WSR System.	Same as the No Action Alternative	Same as Alternative 1		
Land Use Allocations						
LUA 1	Manage the following eligible rivers as directed by interim management measures (see specific interim determinations in Appendix 3.8): Grande Ronde River (Lower Section) Snake River (from OR/WA stateline to the confluence with the Grande Ronde River)	The BLM would recommend the upstream-most review segment of Joseph Creek (see Appendix 3.8) to Congress for designation into the National WSR System as a "wild" river segment and develop a management plan.	The BLM would not recommend the upstream-most review segment of Joseph Creek (see Appendix 3.8) to Congress for designation into the National WSR System.	Same as Alternative 1		

Table 2-27. Wild And Scenic Rivers						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
	Joseph Creek (adjacent to USFS boundary)					
Management Actions						
MA 1	Unless specifically modified by this RMP, manage the existing Wallowa, Grande Ronde, and Powder WSRs according to their individual river management plans.					
MA 2	N/A	The BLM would limit passenger numbers for motorized boating to 8 passengers per boat per day within the Wallowa and Grande Ronde Rivers SRMA.	The BLM would limit passenger numbers for motorized boating to 12 passengers per boat per day within the Wallowa and Grande Ronde Rivers SRMA.	The BLM would limit passenger numbers for motorized boating to 10 passengers per boat per day within the Wallowa and Grande Ronde Rivers SRMA.	The BLM would limit passenger numbers for motorized boating to 6 passengers per boat per day and restrict commercial motorized uses within the Wallowa and Grande Ronde Rivers SRMA.	
MA 3	N/A	The BLM would assign VRM Class I determination for the segment of Joseph Creek determined suitable as a "wild" river segment.	N/A	Same as Alternative 1		
MA 4		The BLM would manage the suitable segment of Joseph Creek under the management actions identified in the Joseph Creek ACEC/ONA to adequately protect and enhance the outstandingly remarkable values.	N/A	Same as Alternative 1		

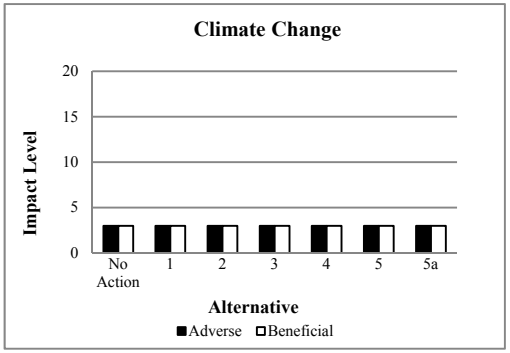
Table 2-28. Wilderness Study Areas						
	No Action Alternative	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Goal 1	N/A	Protect designated WSAs as outlined under interim management procedures.				
Obj. 1	N/A	Preclude any action or activity that could affect the resources for which the areas were designated as WSAs.				
Management Actions						
MA 1	The BLM's interim management policy for WSAs has and will continue to guide management in the three WSAs in the Decision Area: the McGraw Creek WSA, Homestead WSA, and Sheep Mountain WSA. The possibility that these areas may be designated as wilderness will be recognized in all affected land and resource use decisions.					
MA 2	In 1984, Congress designated 968 acres of the McGraw Creek WSA as a wilderness, which is currently managed by the USFS. The BLM would continue the cooperative agreement with the USFS regarding the management of the McGraw Creek Wilderness.					
MA 3	N/A	The BLM would build parking areas and physical barriers (i.e. fences, boulders) to resolve motorized violations of the WSAs in key locations where and when necessary.				
MA 4	N/A	The BLM would manage all acreages of WSAs released by Congress as a component of the overlapping ACEC.	If released by Congress, the BLM would re-evaluate any portions of WSAs outside of ACECs for commodity potential and/or inclusion into adjacent ACECs, either in whole or in part.	. Same as Alternative 1		

Table 2-29. Public Safety					
*	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Goal 1	Provide for public health and safety, especially in areas of concern, in public land development sites and areas of concentrated use.				
Obj. 1	Inspect all developed campgrounds, other campsites, take-outs, staging areas, and other administrative sites on a regular basis for safety hazards.				
Obj. 2	Test potable water sources on a regular basis, as mandated by regulation.				
Obj. 3	Post new hazards on public lands when and where appropriate until the hazards can be corrected. Removal or mitigation of the hazard will be done as soon as possible.				
Obj. 4	Increase posting of BLM roads where appropriate if changing road conditions may make a segment of road impassable in inclement weather. Emphasis would be on only signing higher use roads due to the many miles of remote, unimproved roads on public lands.				
Management Actions					
MA 1	Develop, modify when appropriate, and follow safety inspection schedules for all BLM-administered facilities. The inspection schedules would be specific to and based on the type of site(s) and level of use by the public.	Same as Alternative 1; however, the BLM would anticipate the need for increased inspections under Alternative 2 due to an expected increase in visitations of these facilities by the public.	Same as Alternatives 1 and 2; however, BLM would anticipate the need for increased inspections under Alternative 3 due to an expected increase in visitations of these facilities by the public.	Same as Alternative 1	
MA 2	Inspections identified under MA 1 may be coordinated with OSHA and appropriate federal and state agencies.				
MA 3	Potable water testing schedules and procedures would meet state standards.				
MA 4	Identify and mitigate hazards on public land.	Same as Alternative 1. Because these alternatives would promote an increase in recreational opportunities and an expanded transportation network, the public may be attracted to seldom-used portions of the Decision Area. The BLM thus expects to increase their attention to identify potential hazards in these areas.		Same as Alternative 1	
MA 5	As part of the TMP, the BLM would identify those sections of BLM roads where changing weather may cause deteriorating road and driving conditions and sign such sections of roads in areas of high public use.	Same as Alternative 1. Because these alternatives would promote an expanded transportation network and an increase in public access to the Decision Area, the BLM would sign additional road sections as funding allows.		Same as Alternative 1	
MA 6	The BLM would use the news media when appropriate to inform the public of increasing fire danger and where actual fire activity may pose a risk to the public.				

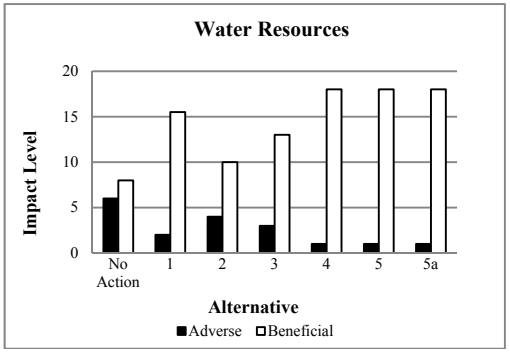
Table 2-29. Public Safety					
*	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
MA 7	The BLM would post contact information at developed campgrounds and OHV staging areas, river take-outs, and other high recreation use areas. Contact information would be for the BLM, local law enforcement, and other appropriate emergency agencies. The BLM would also use such signboards to inform the public of local risks that may be found in the area.				
* *The No Action Alternative proposes no management direction for public safety.*					

1. SUMMARY OF ENVIRONMENTAL CONSEQUENCES

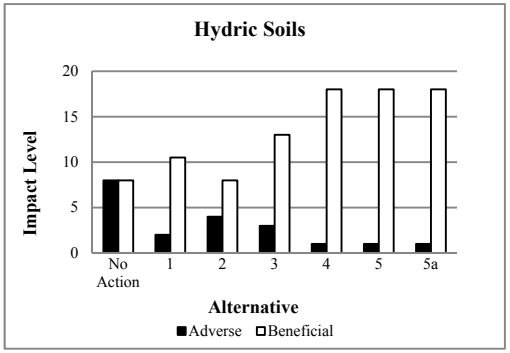
The figures below summarize and compare the anticipated long-term impacts of implementing the management actions and land use authorizations of the No Action Alternative and the five action alternatives by resource management program. These figures are based on the impact analysis presented in Chapter 4 and display the overall magnitude of impacts for each resource management program under each alternative. In general, an impact can be adverse or beneficial and can be negligible, minor, moderate, and major. Such impacts are displayed in the figures below and are based on a scale of 0 to 20, with 0 being no impacts and 20 being extreme, major impacts. Following this rating scale, negligible impacts are within the range of 1 to 5, minor are within a range of 6 to 10, moderate are within a range of 11 to 15, and major impacts are within a range of 16 to 20. Refer to Chapter 4 for details on how magnitude of impacts are defined and rated for each resource management program.



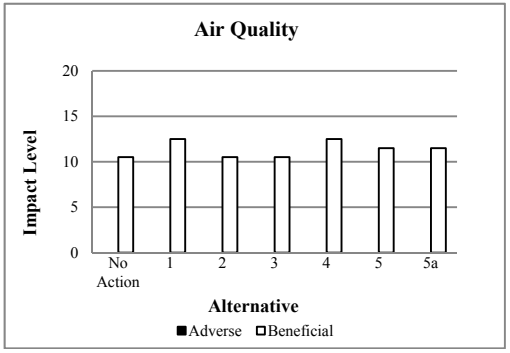
Adverse Impacts: Increased GHG emissions primarily due to range and forest vegetative treatments, prescribed fire, livestock, and transportation.
Beneficial Impacts: Reduced GHGs due to decreased wildfire intensity and duration.



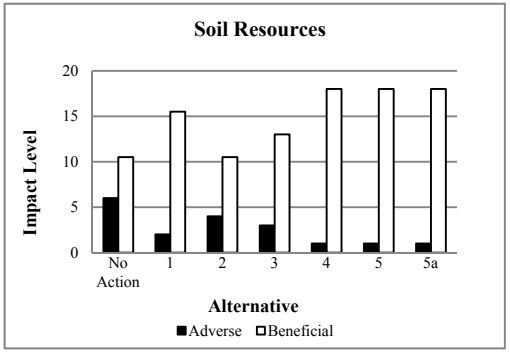
Adverse Impacts: Increased impairments from reduced stream stability and increased erosion from grazing, roads, mining, and energy corridors.
Beneficial Impacts: Improved water quality to achieve water quality standards and meet beneficial uses from riparian and livestock management.



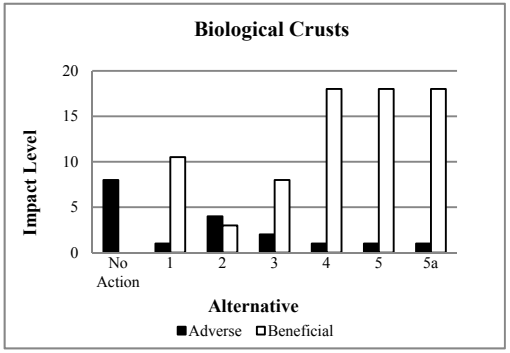
Adverse Impacts: Increased erosion due to grazing, roads, mining, energy corridors, weed control, and fire.
Beneficial Impacts: Increased soil stability due to grazing practices, longer stubble height targets, and limits on OHV use.



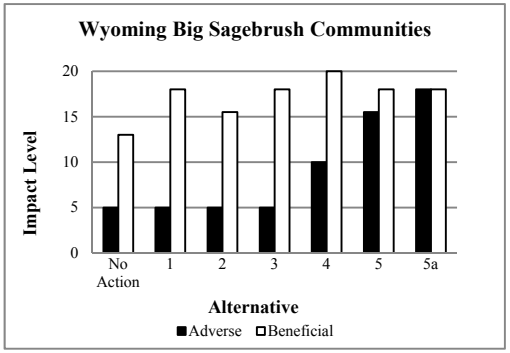
Beneficial Impacts: Improved air quality from BMPs and reduced wildfire intensity and duration.



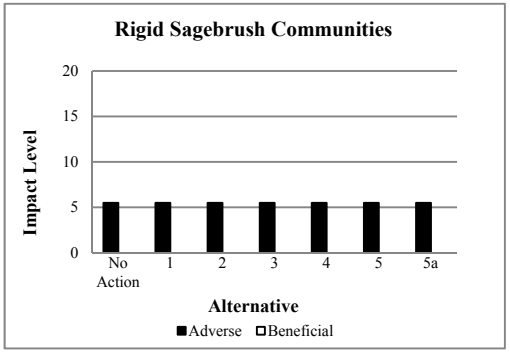
Adverse Impacts: Increased erosion and soil loss due to grazing, OHV use, and energy corridors.
Beneficial Impacts: Improved soil stability due to changes in grazing practices and limits on OHV use.



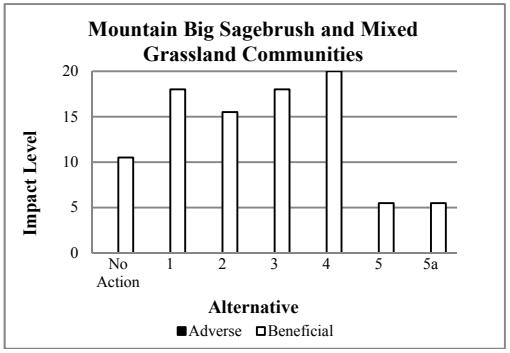
Adverse Impacts: Increased compaction/erosion due to ground disturbance activities (e.g., grazing and OHV use) where crusts occur.
Beneficial Impacts: Reduced ground disturbance due to lighter grazing levels, less acres open to OHVs, and limits on energy corridors.



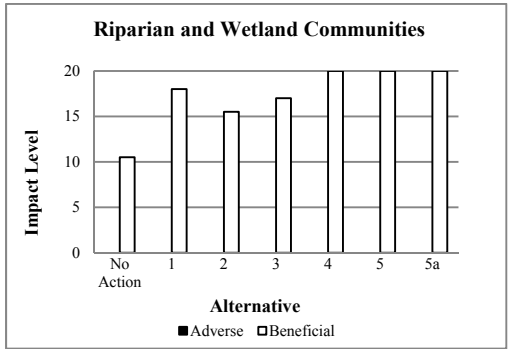
Adverse Impacts: Increased wildfire severity or frequency that is high enough to kill or reduce vigor of native grasses.
Beneficial Impacts: Improved rangeland health from restricting OHV use, restoring disturbed sites, changes to livestock grazing, prescribed fire, wildfire suppression, weed management, and mitigation of ground disturbing projects.



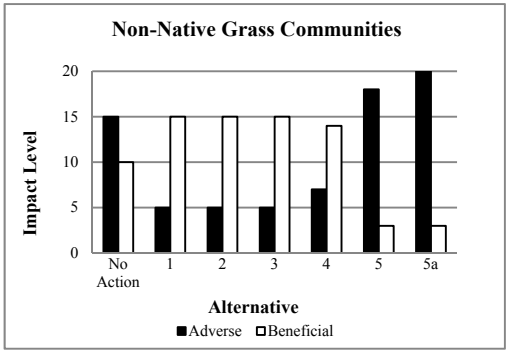
Adverse Impacts: Ground disturbance resulting in the loss or conversion of native rigid sagebrush stands into non-native annual grass.



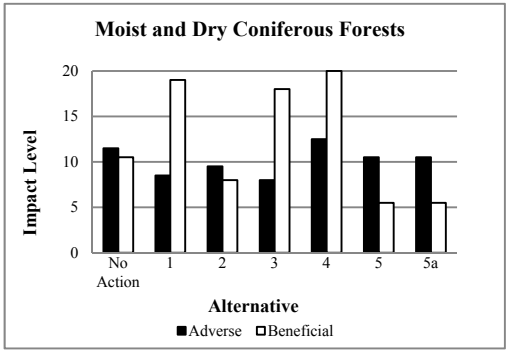
Beneficial Impacts: Improved rangeland health from changing livestock management and juniper reduction



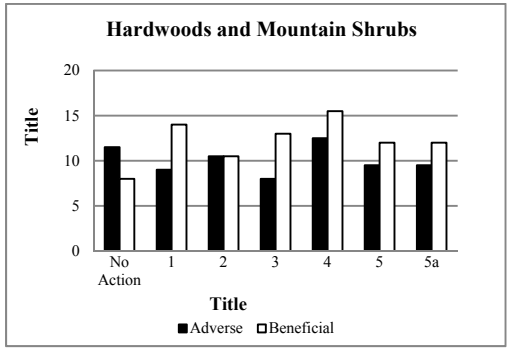
Beneficial Impacts: Improved riparian condition from changing livestock grazing, road improvement or decommissioning, and stream restoration.



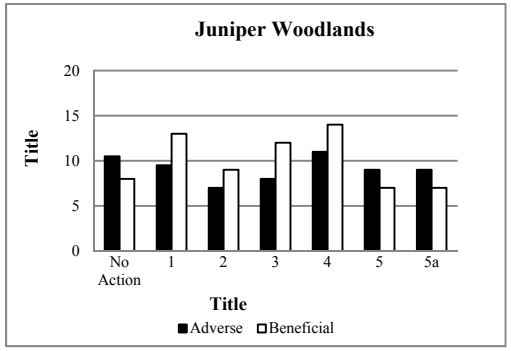
Adverse Impacts: Increased wildfire severity or frequency that is high enough to convert native sagebrush communities to non-native annual grasses.
Beneficial Impacts: Reduced spread of non-native annual grass into native rangeland vegetation communities, restoration of existing non-native annual grass communities and improved rangeland health within the non-native perennial grass communities.



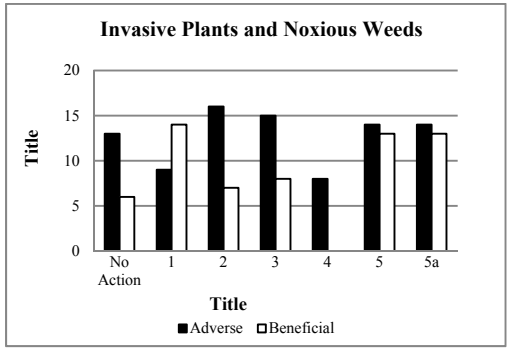
Adverse Impacts: Restricted or prohibited opportunities to improve old growth forest conditions.
Beneficial Impacts: Improved health, structure, composition, extent, and distribution of old growth forest due to active forest management.



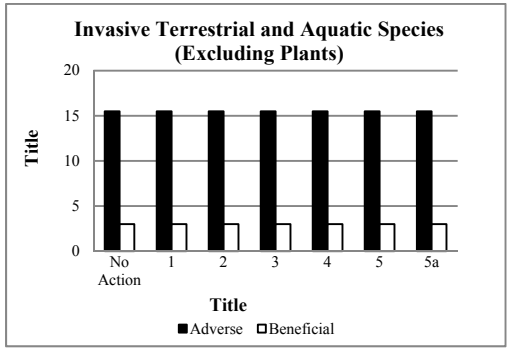
Adverse Impacts: Restricted or prohibited opportunities to improve hardwood and mountain shrub conditions.
Beneficial Impacts: Improved health, structure, composition, extent, and distribution of hardwoods and mountain shrubs due to active forest management.



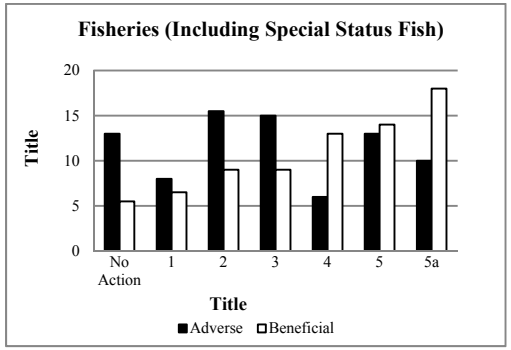
Adverse Impacts: Restricted or prohibited opportunities to treat encroaching juniper.
Beneficial Impacts: Reduced or eliminated juniper encroachment through active forest management.



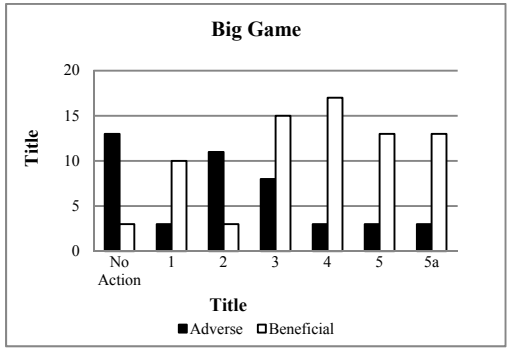
Adverse Impacts: Increased potential for weed introduction/establishment due to ground disturbance, increase use, or denied or restricted restoration activities.
Beneficial Impacts: Decreased potential for weed introduction/establishment due to improved forest and rangeland health, public education opportunities, or limits on off-road travel.



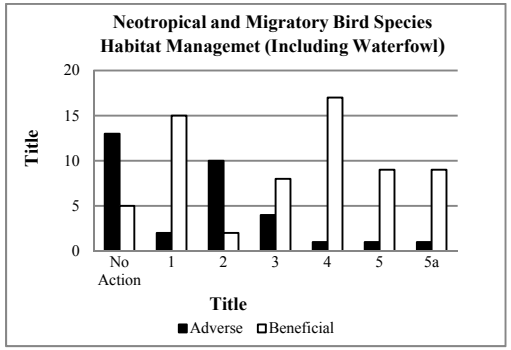
Adverse Impacts: Increased potential for establishment of an unwanted invasive species.
Beneficial Impacts: Reduced spread of invasive species due to successful EDRR management strategy.



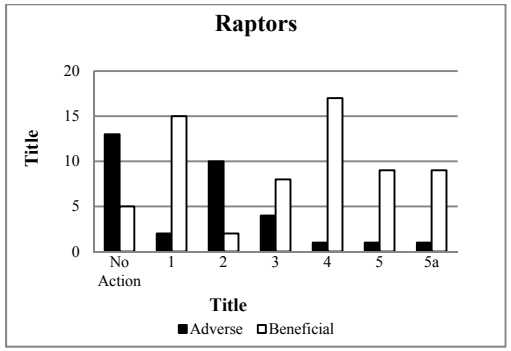
Adverse Impacts: Degraded aquatic and riparian habitat quality and quantity due to livestock grazing, fire, and vegetation treatment efforts.
Beneficial Impacts: Maintained and enhanced aquatic and riparian habitat quality and quantity due to conservation and restoration actions, improved rangeland health, reduced fire frequency, and vegetation treatments.



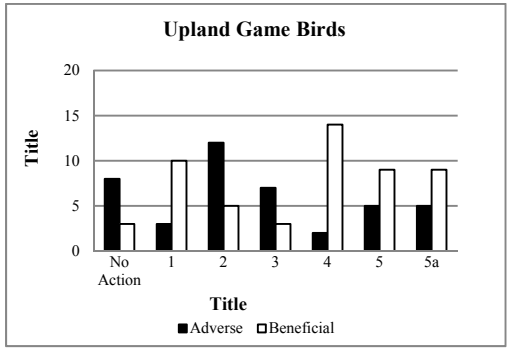
Adverse Impacts: Continued habitat loss and fragmentation, and potential for disease and parasite transmission from domestic livestock.
Beneficial Impacts: Increased habitat protection, reduced potential from disease and parasite transmission, and increased potential for strengthening genetic diversity and population numbers via transplants.



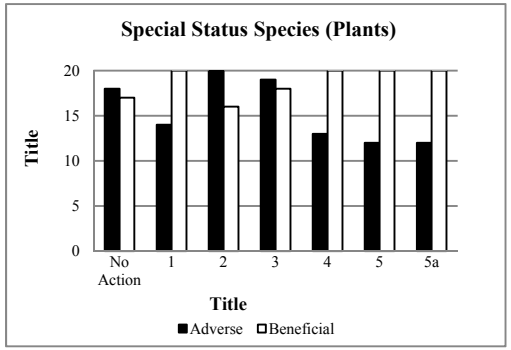
Adverse Impacts: Continued habitat loss and fragmentation due to reduced protection measures.
Beneficial Impacts: Improved habitat quality and quantity due to increased protection measures.



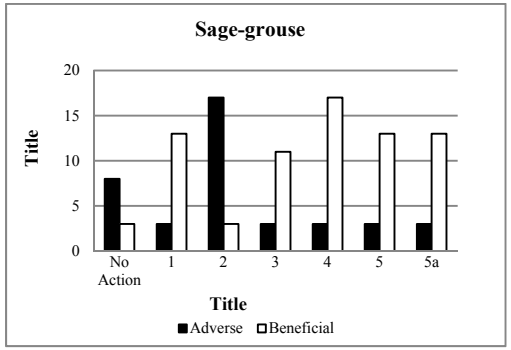
Adverse Impacts: Continued habitat loss and fragmentation due to reduced protection measures and juniper encroachment. Long-term stress, displacement, and fragmentation from wind energy development ROWs.
Beneficial Impacts: Improved habitat quality and quantity due to increased protection measures.
Increased rodent populations due to vegetation management, reduced fragmentation due to juniper control, and reduced potential for turbine disturbance in wind energy exclusion areas.



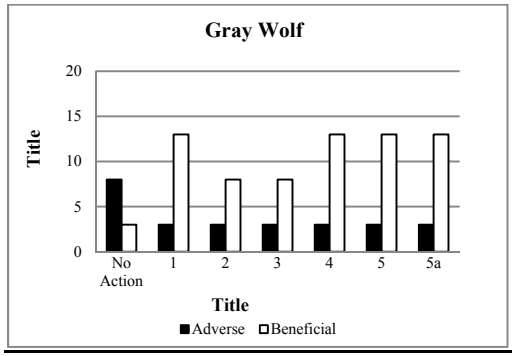
Adverse Impacts: Continued habitat loss and fragmentation in Wyoming big sagebrush communities due to development of mineral resources and limited restoration efforts.
Beneficial Impacts: Increased habitat protection by minimizing conflicts between livestock and sage-grouse, implementing WQRPs and BMPs, controlling juniper, and ensuring adequate residual hiding cover for ground nesters by basing perennial grass utilization on growth stages.



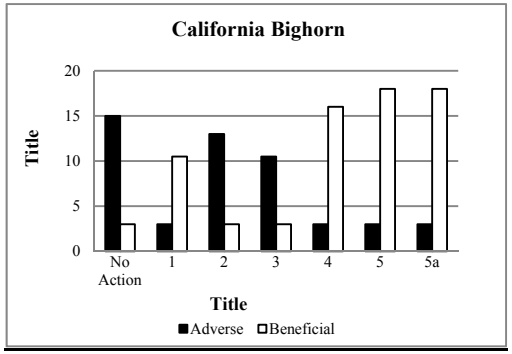
Adverse Impacts: Loss or adverse modification of habitat and/or individual plants due to ongoing energy development, mining, livestock grazing, and conversion of Wyoming sagebrush habitats to annual rangelands
Beneficial Impacts: Maintained or improved habitats and protection of individual plants through ACEC/RNA designations and special management.



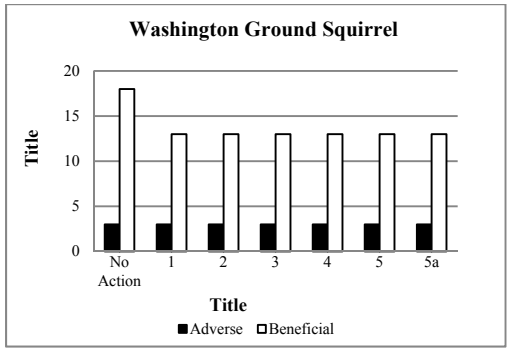
Adverse Impacts: Continued habitat loss and fragmentation in Wyoming big sagebrush communities due to development of mineral resources, limited restoration efforts, and minimal protection buffers.
Beneficial Impacts: Increased habitat protection by minimizing conflicts between livestock and sage-grouse, implementing WQRPs and BMPs, establishing stream buffers, controlling juniper, designating sage-grouse ACEC, establishing wind energy exclusion areas, and ensuring adequate residual hiding cover for nesting sage-grouse by basing perennial grass utilization on growth stages.



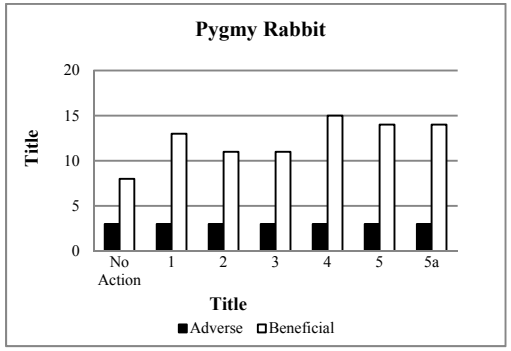
Adverse Impacts: Continued habitat loss and fragmentation due to limited protection measures.
Beneficial Impacts: Reduced habitat loss, fragmentation, and human disturbance.



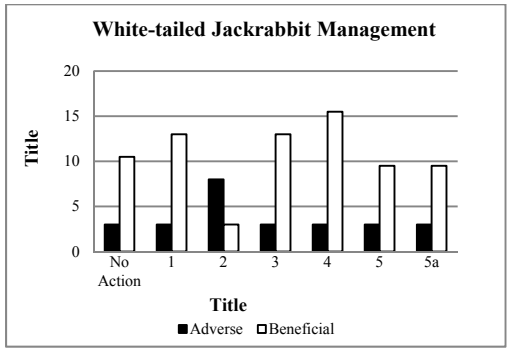
Adverse Impacts: Continued habitat loss and fragmentation and potential for disease and parasite transmission from domestic livestock.
Beneficial Impacts: Increased habitat protection due to buffers from land-use authorizations, reduced potential from disease and parasite transmission, and increased potential for strengthening genetic diversity and population numbers via transplants.



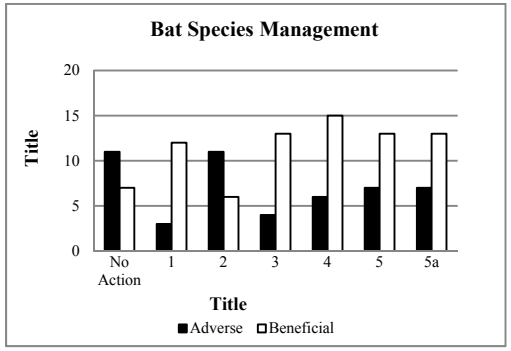
Adverse Impacts: Reduced habitat quality due to livestock grazing.
Beneficial Impacts: Improved habitat quality by excluding livestock grazing and following 6840 manual.



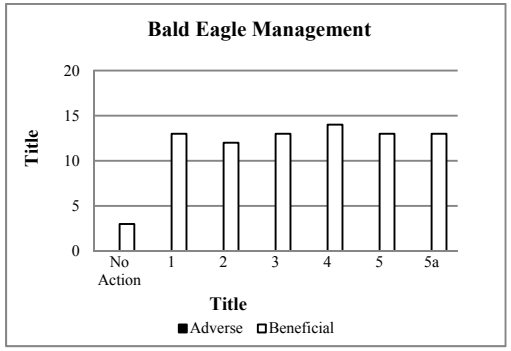
Adverse Impacts: N/A
Beneficial Impacts: Reduced habitat loss and fragmentation due to fire management, livestock grazing mitigation, and management of sagebrush communities.



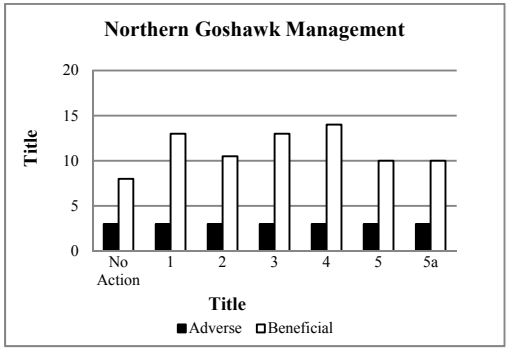
Adverse Impacts: Continued habitat loss and fragmentation due to limited protection measures, including juniper control.
Beneficial Impacts: Improved nesting and hiding habitat through rangeland management and adequate sagebrush canopy cover.



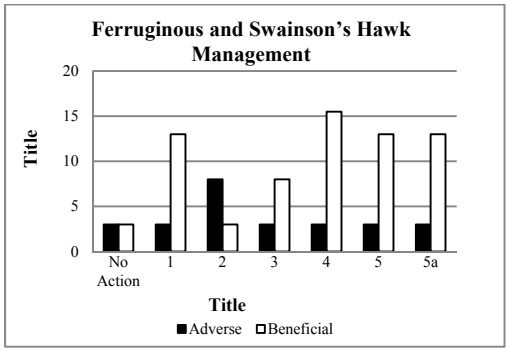
Adverse Impacts: Increase habitat loss and/or alteration and fragmentation
Beneficial Impacts: Snag management, improved riparian health, creation of exclusion areas, protection of edge habitat, increased connectivity, protection of roost sites.



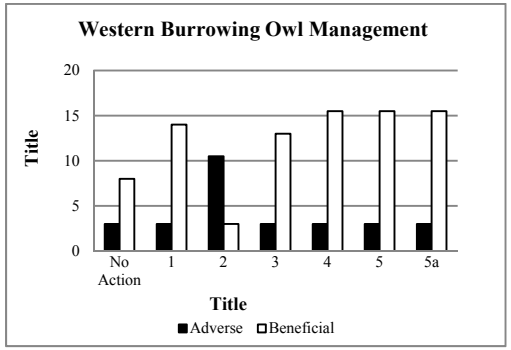
Beneficial Impacts: Protection of eagles and habitat from implementing the BEMP, maintaining Unity ACEC, mitigating recreational uses, protecting snags, and avoiding disturbance to nesting eagles.



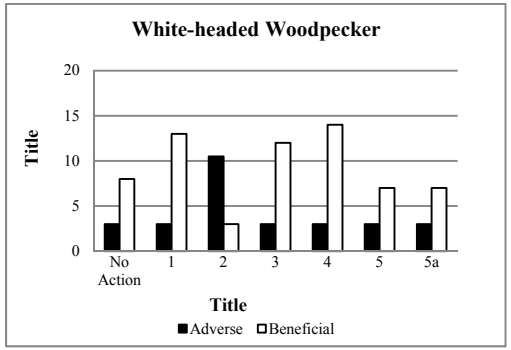
Adverse Impacts: Continued habitat reduction/degradation from limited active management of forested ecosystems.
Beneficial Impacts: Improved habitat from following guidance on canopy cover, minimum snag diameters and placement, snag and downed log ratios, and hollow log and green tree surplus management.



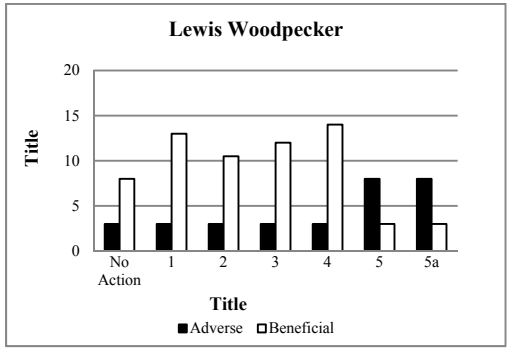
Adverse Impacts: Continued habitat loss and fragmentation from juniper encroachment: long-term stress, displacement, and fragmentation from wind energy development ROWs.
Beneficial Impacts: Increased rodent populations due to vegetation management, reduced fragmentation due to juniper control, and reduced potential for turbine disturbance in wind energy exclusion areas.



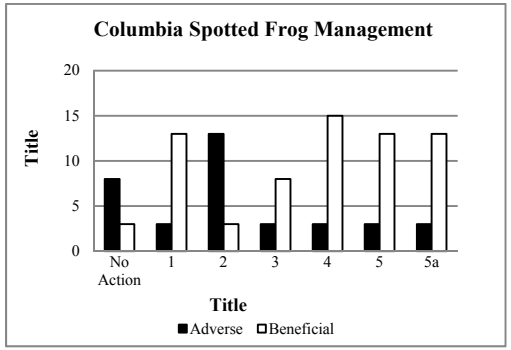
Adverse Impacts: Continued habitat loss and fragmentation due to limited protection measures and lands available for ROWs, including for wind energy development.
Beneficial Impacts: Protection of den and nesting areas by improving soil stability, protecting biotic crusts, and designating wind exclusion areas.



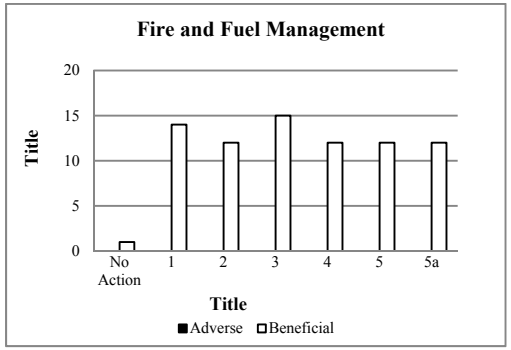
Adverse Impacts: Continued habitat loss and fragmentation due to limiting management in forested ecosystems.
Beneficial Impacts: Improving/maintaining habitat by maintaining snags and dry site old growth, increasing habitat diversity, promoting nutrient cycling, reducing fuel loads, controlling disease infestations, controlling unwanted vegetation/weeds, and reintroducing fire into a natural role.



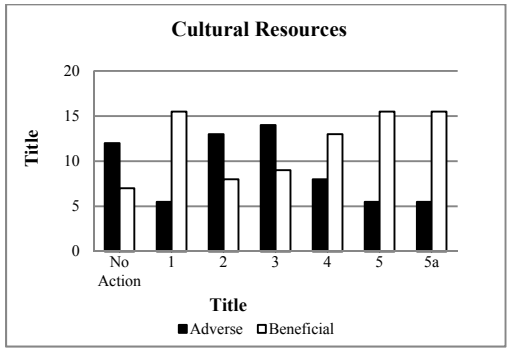
Adverse Impacts: Continued habitat loss and fragmentation due to limited management in forested ecosystems and a focus on increasing timber yields and timber production.
Beneficial Impacts: Improved/maintained habitat by maintaining dry site old growth through promoting and restoring the historic fire cycle.



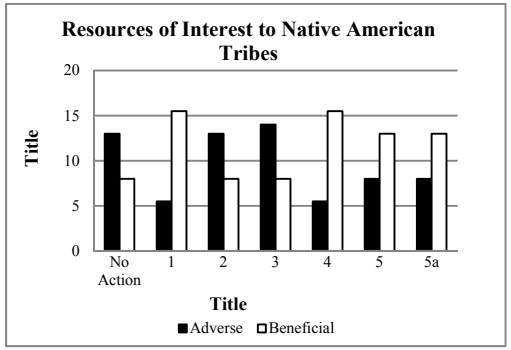
Adverse Impacts: Continued habitat loss and fragmentation due to road densities, mineral development and production, and livestock grazing.
Beneficial Impacts: Maintained and protected habitat by implementing WQRPs, BMPs, EDRR, IWM, and stream buffers and prioritizing roads analysis based on watershed with sediment-listed streams.



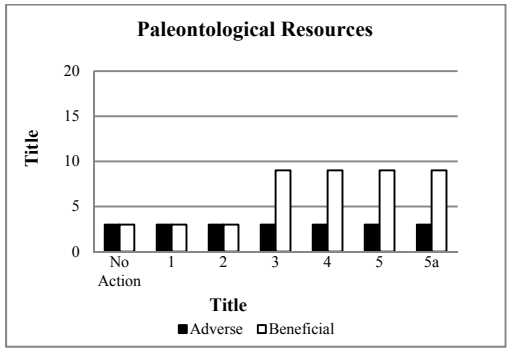
Beneficial Impacts: Improved firefighter and public safety and reduction in uncharacteristic fire behavior/effects.



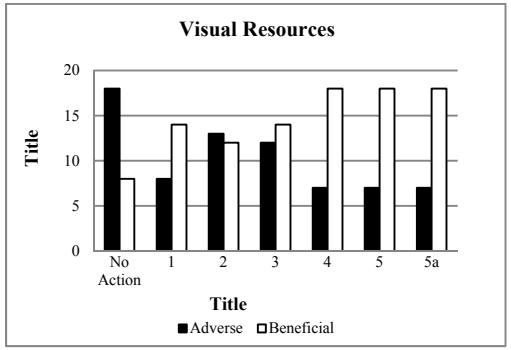
Adverse Impacts: Decreased site integrity due to wildland fire, "open" travel areas, limited exclusion and special designations, and decreased soil stability.
Beneficial Impacts: Increased protection of sites due to fire management, measures to increase soil stability, reduced "open" transportation areas, added special designations and exclusion areas, and focus on public education.



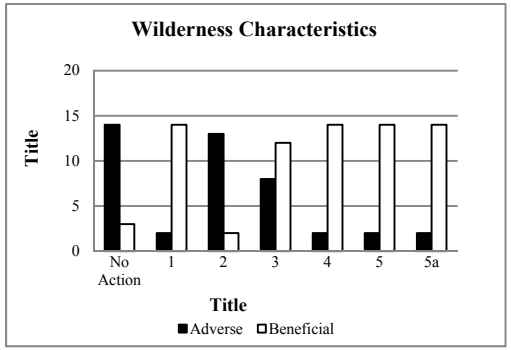
Adverse Impacts: Increased loss of setting, access, and important resources due to not preventing changes in species population/composition and designating limited special designation and exclusion areas.
Beneficial Impacts: Improved access, increased stability of important resources, and increased opportunities for quiet and solitude due to habitat restoration efforts and increased special designations and exclusion areas.



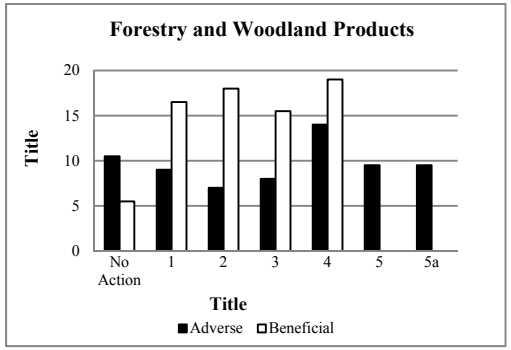
Adverse Impacts: Destruction or displacement due to grazing, vegetative treatments, recreation, transportation network, mineral exploration and development, ROWs, and other surface disturbing activities/erosion.
Beneficial Impacts: Stabilization of potential occurrences due to vegetation management, adhering to grazing health standards, BMPs, avoidance/exclusion areas, limited OHV use, and other actions that promote soil stability.



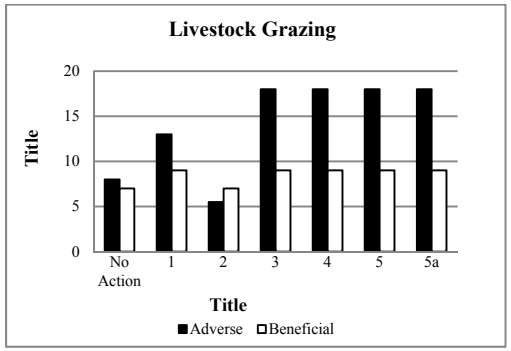
Adverse Impacts: Degraded scenic quality or loss of visual resource integrity due to vegetative treatments, fire, land use authorizations, facility development, mineral development, and the like.
Beneficial Impacts: Protection/enhancement of scenic quality and visual resource integrity due to mitigation measures, BMPs, vegetation treatments, and the like.



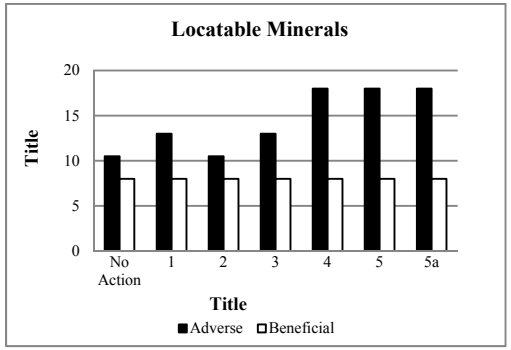
Adverse Impacts: Potential for degradation of wilderness characteristics due to not providing added protection, particularly in those units without other special designations (e.g., ACEC or Wild & Scenic River corridor).
Beneficial Impacts: Maintaining or enhancing wilderness characteristics due to providing added protection.



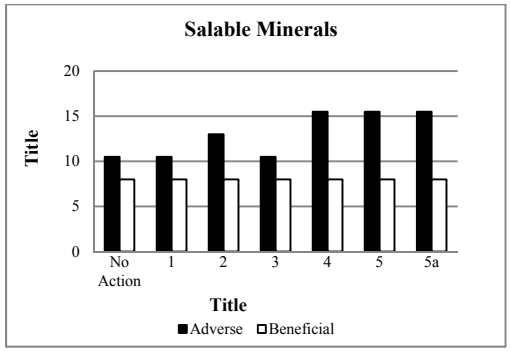
Adverse Impacts: Restricted or prohibited opportunities to improve forest health and productivity, reduce hazardous fuels, and provide a sustainable and predictable supply of forest products.
Beneficial Impacts: Improved forest health and productivity while reducing hazardous fuels and providing a sustainable and predictable supply of forest products via active forest management.



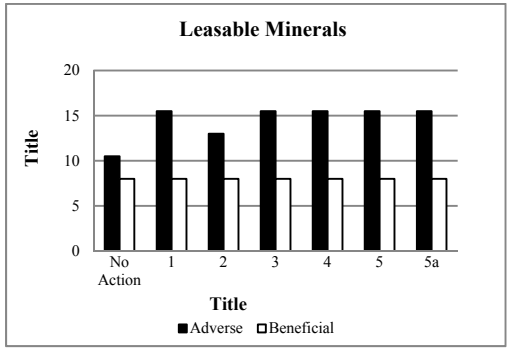
Adverse Impacts: Reduced land available to grazing and reduced forage consumed by livestock.
Beneficial Impacts: Improved quality and sustainability of forage due to improved rangeland health.



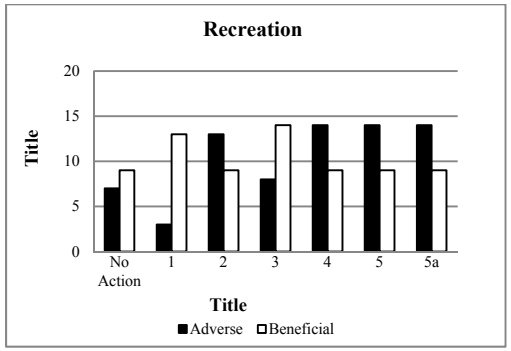
Adverse Impacts: Areas restricted or withdrawn from mineral entry or increased costs for mineral development.
Beneficial Impacts: Less closures from fire due to fire and fuels management.



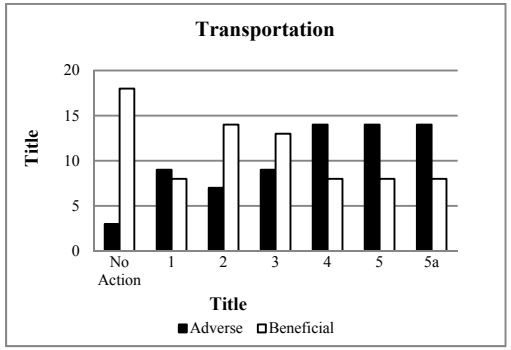
Adverse Impacts: Areas restricted or withdrawn from mineral entry or increased costs for mineral development.
Beneficial Impacts: Less closures from fire due to fire and fuels management.



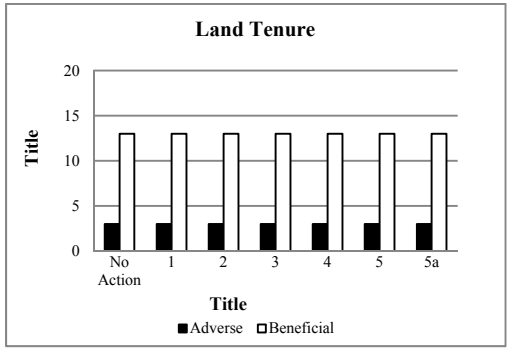
Adverse Impacts: Areas restricted or withdrawn from mineral entry or increased costs for mineral development.
Beneficial Impacts: Less closures from fire due to fire and fuels management.



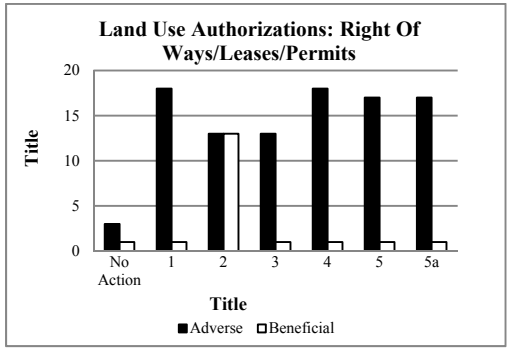
Adverse Impacts: Restricted recreational opportunities or decreased public satisfaction due to limits placed on public use or facilities, degradation of resources, or increased user conflicts.
Beneficial Impacts: Maintenance or enhancement of recreational uses and improvement of public satisfaction due to improved access/facilities, increased opportunities, reduced user conflicts, or improved resources.



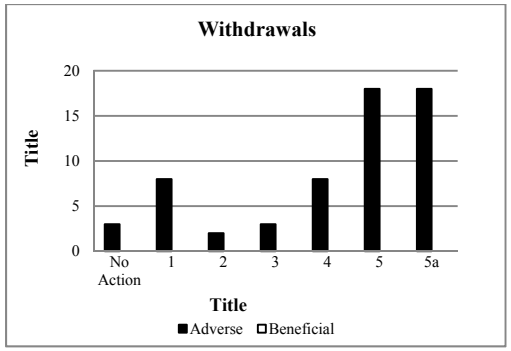
Adverse Impacts: Reduced use of the transportation network due to route closures and seasonal restrictions.
Beneficial Impacts: Maintained or improved use of the transportation network due to limited closures and seasonal restrictions.



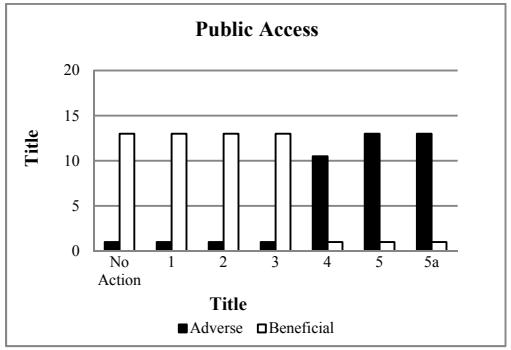
Adverse Impacts: Reduced acres of public lands.
Beneficial Impacts: Consolidated public lands.



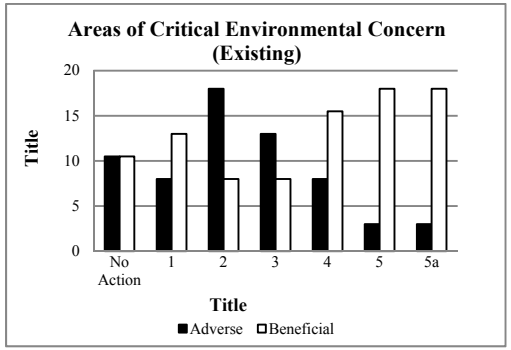
Adverse Impacts: Restricted/reduced opportunities due to special designations, exclusion and avoidance areas, no surface occupancy for leasable minerals, mitigation requirements that increase cost and time of developments, alternate site location, denial of use, retrofitting of developments, and size limitation on development.
Beneficial Impacts: Increased opportunities/fewer restrictions due to improve roads for commodity production, limited avoidance/exclusion areas, less stringent mitigation measures, fewer special designations, less stringent requirements for developments.



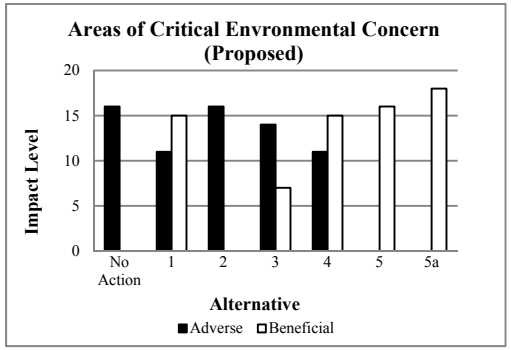
Adverse Impacts: Closed lands to mineral entry due to special designations.



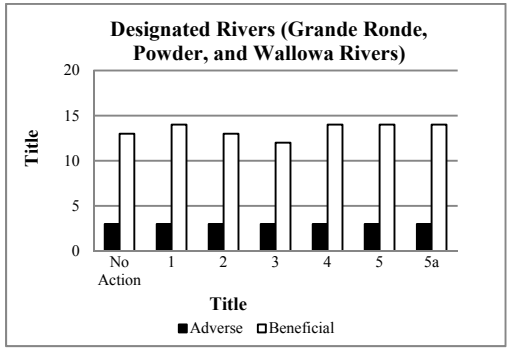
Adverse Impacts: Reduced access or increased costs due to administrative access only, closed roads, mitigation requiring alternate site location, or denial of access construction.
Beneficial Impacts: Increased administrative and/or public access due to open roads, pursuing public access, or less stringent mitigation requirements.



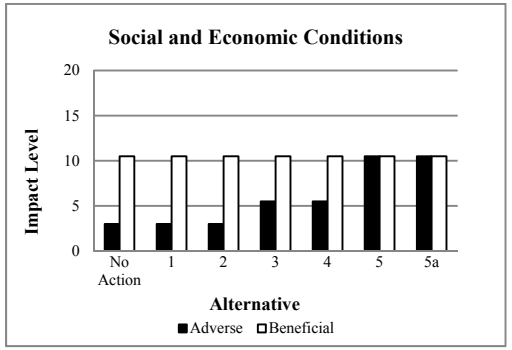
Adverse Impacts: Threats to relevant and important values.
Beneficial Impacts: Protection of relevant and important values



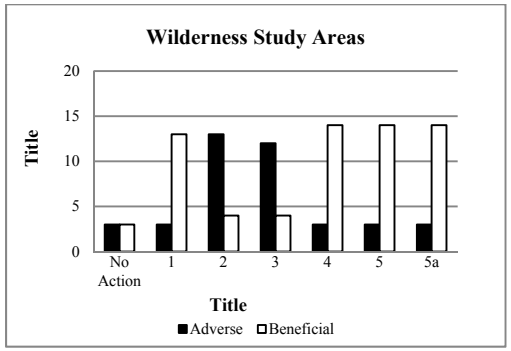
Adverse Impacts: Threats to relevant and important values.
Beneficial Impacts: Protection of relevant and important values



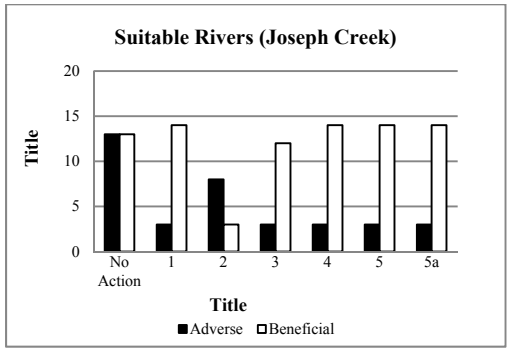
Adverse Impacts: Induced threats to maintaining outstandingly remarkable values and free-flowing nature.
Beneficial Impacts: Maintained or enhanced outstandingly remarkable values and protection of free-flowing nature.



Adverse Impacts: Decreased levels of employment, labor income, and quality of life currently supported by BLM management.
Beneficial Impacts: Increased employment, labor income, and quality of life currently supported by BLM management



Adverse Impacts: Increased threats to wilderness values of WSAs
Beneficial Impacts: Maintained or enhanced wilderness values of WSAs



Adverse Impacts: Induced threats to maintaining outstandingly remarkable values and free-flowing nature.
Beneficial Impacts: Maintained or enhanced outstandingly remarkable values and protection of free-flowing nature.

CHAPTER 3. AFFECTED ENVIRONMENT

A. INTRODUCTION

This chapter describes the environment within the Baker Planning Area that is susceptible to impacts from actions proposed under the alternatives described in Chapter 2. While the Bureau of Land Management (BLM) is only responsible for managing BLM-administered public lands within the Planning Area (i.e., the Decision Area), decisions proposed in this Draft Resource Management Plan (RMP) may affect environmental components outside the Decision Area.

The environmental components potentially impacted consist of those covered under the resource management programs listed below. The foreseeable environmental impacts of the alternatives on these same resource and management activities are described in Chapter 4.

Resources
Climate
Air Quality
Water Resources
Soil Resources
Vegetative Communities
Invasive Species
Fisheries (Including Special Status Fish Species)
Wildlife
Special Status Species (Plants)
Special Status Species (Animals)
Fire and Fuels Management
Cultural Resources
Resources of Importance to Native American Tribes
Visual Resources
Lands with Wilderness Characteristics

Resource Uses
Facilities
Forestry and Woodland Products
Livestock Grazing
Minerals
Recreation
Transportation and Access
Lands and Realty
Land Tenure
Land Use Authorizations
Public Access
Withdrawals

Special Area Designations
Areas of Critical Environmental Concern (ACECs)
Wild and Scenic Rivers
Wilderness Study Areas

Social and Economic Conditions
Socioeconomics
Environmental Justice
Public Safety

The data and descriptions of these categories are drawn from both the Analysis of the Management Situation (AMS; BLM 2009) and subsequent, completed resource assessments on several of the environmental components that occur within the Planning Area. The AMS is available for public review at the BLM's Baker Field Office and Vale District Office, and online at http://www.blm.gov/or/districts/vale/plans/files/Baker_RMP_AMS.pdf.

B. RESOURCES

1. CLIMATE

a. Current Conditions

Precipitation

The climate in the Planning Area ranges from sub-humid in the Blue Mountains to semi-arid in the valleys and lower plateaus, with average yearly precipitation varying between 9 and 52 inches, with higher precipitation at higher elevations. Most of the Decision Area is at lower elevations with correspondingly lower rainfall. At higher elevations within the same watersheds, yearly precipitation can be as high as 80 inches, falling primarily as snow. The Columbia Gorge provides a break in the rain shadow of the Cascades, allowing more moisture to enter from the west at higher elevations near the Gorge, but has little influence in the southeastern portion of the Planning Area.

Winter and spring have the highest levels of precipitation, with snow packs accumulating at higher elevations that contribute to spring run-off. During the spring, there can be instances of rain falling on top of existing snow, which can result in flooding. There is less influence from marine air masses in the southern part of the Planning Area (Ferguson 1999). During the summer months, thunderstorms are common across the Planning Area.

Temperature

Temperatures vary from sub-zero during winter months to over 100° Fahrenheit (F) during the summer. Both seasonal and daily temperatures have large variations. Baker County mean temperatures are in the 80s (°F) in the summer and 30s in the winter.

Climate Change

Ongoing scientific research has identified the potential impacts on global climate of anthropogenic (i.e., man-made) greenhouse gas (GHG) emissions and changes in biological carbon sequestration due to land management activities. Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for thousands of years, recent industrialization and burning of fossil carbon fuels have caused GHG concentrations to increase dramatically, and are likely to contribute to overall global climatic changes. Several activities contribute to the phenomena of climate change, including: emissions of GHGs (especially carbon dioxide [CO_2] and methane) from fossil fuel development, large wildfires and activities using combustion engines; changes to the natural carbon cycle; and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs will have a sustained

climatic impact over different temporal scales. For example, recent emissions of CO_2 can influence climate for 100 years.

The Intergovernmental Panel on Climate Change (IPCC) recently concluded that "warming of the climate system is unequivocal" and "most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations." Chapter 9 of Working Group I of the 2007 IPCC Report (Hegerl et al. 2007) addressed the causes of climate change and concluded that: 1) human-induced warming of the climate system is widespread, 2) "it is *likely*" that there has been a substantial anthropogenic contribution to surface temperature increases since the mid-20th century, and 3) surface temperature extremes have "*likely"* been affected by anthropogenic forcing. As with any field of scientific study, there are uncertainties associated with the science of climate change, but this does not imply that scientists do not have confidence in many aspects of climate change science. Some scientific aspects regarding anthropogenic contributions to climate change are known with virtual certainty because they are based on well-known physical laws and documented trends (Environmental Protection Agency [EPA] 2008).

Global mean surface temperatures increased nearly 1.8° F between 1890 and 2006. Models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Northern latitudes (above 24° N) have exhibited temperature increases of nearly 2.1 °F since 1900, with nearly a 1.8 °F increase since 1970 alone. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change (IPCC 2007). While there is information about the potential and projected effects of global climate change on resources (i.e., over the next several decades or a century from now), it is difficult to discern whether global climate change is currently affecting resources within the Planning Area. Therefore, many of the projected changes associated with climate change described here may not be measurably discernible within the reasonably foreseeable future, including the 20-year planning period for this RMP.

Current scientific assessments of future climate change are more global and regional in scale. As a result, there are no precise scientific assessments regarding either the impact future climate change or projections for specific localized sites within the Planning Area. Estimating quantitative changes in the local environment is not feasible at this time, although several scientific organizations are working on downscaling models that should be useful in the near future. With this in mind, it is still reasonable to assume that over the next 20 years the Planning Area will experience some noticeable changes attributable to factors related to climate change. Changes in stream systems, including their flow, temperature, and turbidity, should be substantial enough to influence irrigation activities, flood control, and water related recreational activities. Spring runoff is expected to come earlier and more quickly with lower stream flows later in the season. Stream temperatures are expected to rise enough to reduce cold-water fisheries habitat. Furthermore, both the timing and length of seasons should be affected. This, in turn, would influence changes in the ranges, phenology, community composition, biotic interactions, and

behavior of both plants and animals. Climate change predictions include an increase in duration and frequency of drought conditions and, conversely, increased precipitation events. This combination can result in an increase in soil erosion and stream sedimentation and can alter stream channels (Climate Impacts Group 2010; IPCC 2007).

Several decades from now, changes in climate could result in the expansion of juniper into sagebrush steppe and grasslands, which would likely be followed by grasslands expanding into previously forested areas. Sagebrush ecotypes/habitat may decline sharply within the next 50 years as changes in temperature and precipitation amounts and timing occur. An increase in CO_2 levels would favor certain plant species over others, including some non-native invasive species (Piao et al. 2007). A number of plant species and communities are expected to shift both northward and upward in elevation over the next 40 to 70 years (Hanson et al. 2001).

b. Trends

Precipitation and Temperature

The past 50 to 100 years has shown a slight decrease in winter precipitation and an increase in summer precipitation. There has also been a slight increase in winter temperatures and slight decrease in summer temperatures (Ferguson 1999).

Greenhouse Gases

An accurate estimate of total GHG emissions from all sources within the Planning Area is not available. However, it is known that emissions have trended downward due to such factors as fewer industrial sources, cleaner vehicle emissions, and reduced field burning. This trend is expected to continue due to the national emphasis on clean air and efforts to reduce and mitigate CO_2 and other GHG emissions. However, this trend could be reversed within the Planning Area due to considerable industrial and population growth in the future.

Climate Change

In 2001, the IPCC estimated that by the year 2100, global average surface temperatures would increase by 2.5 to 10.4°F above 1990 levels. The National Academy of Sciences (NAS) has confirmed these findings, but also has indicated there are uncertainties regarding how climate change may affect different regions. Computerized models predict that increases in temperature will not be distributed equally, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures are more likely than increases in daily maximum temperatures. While increases in temperatures would increase water vapor in the atmosphere and enhance heavy storm events, it would also reduce soil moisture and increase generalized drought conditions. Although large-scale spatial shifts in precipitation distribution may occur, these changes are more uncertain and difficult to predict (IPCC 2001; NAS 2001; US Global Change Research Program 2009).

Carbon Storage

Forests, woodlands, and rangelands store carbon, which affects atmospheric concentrations of CO_2, and thereby affects global climate. Vegetation management can provide either a source of CO2, or a sink of CO_2 through vegetation growth. The net storage or loss of carbon on rangelands and grasslands in the Planning Area is generally small and difficult to measure. Soils on these sites also contain relatively little organic matter compared to forest soils (Ryan et al. 2008). Although forests and woodlands make up only 20 percent of the total acres on public lands in the Planning Area, these vegetation communities sequester and store approximately 72 percent of the carbon (refer to Table 3-1).

Table 3-1. Estimated Tons of Carbon Stored above Ground in the Decision Area

Plant Community	Current Acres	Estimated Average Tons of Carbon/Acre above ground Carbon*	Estimated Total Tons of Carbon
Sagebrush steppe	198,868	1.35	268,472
Mixed Grasslands	71,270	.25	17,818
Mixed Grasslands and Juniper	48,105	3	144,315
Non-Native Annual Grass	13,406	0.31	4,156
Non-Native Seeded Grass	40,633	0.22	8,940
Dry forest	31,355	10	313,550
Moist forest	5,383	64	344,512
Riparian	3,062	2	6,124
Rock outcrops	5,210	NA	NA
Water	566	NA	NA
No Plant Community Survey Data	10,567	0.25	2,716
Total	428,425	----	1,110,603

*Biomass estimates used to calculate estimated tons of carbon were derived from several sources, including the USDA- National Resource Conservation Service (NRCS) Baker County Area Soil Survey, dated June 1997; the National Wildfire Coordinating Group PMS 830, July 1998; BLM/Interdisciplinary (ID) Tech Note 430 Great Basin Fuels Guide.

In the United States, forests have acted as a carbon sink throughout the last century (Birdsey et al. 2006). Forests and harvested wood in the United States currently represent a carbon pool of 43.9 billion metric tons (EPA 2007). In addition, forest management currently represents an annual accumulation of 191 million metric tons of carbon, which represents an offset of approximately 11 percent of total carbon emissions in the United States (EPA 2007). Globally, the combination of vegetation, soil, and detritus currently store 2.3 trillion metric tons of carbon (Denman et al. 2007, p. 515). Furthermore, atmospheric carbon in the form of CO_2 is increasing at a rate of 3.2 to 4.1 billion metric tons of carbon per year (Denman et al. 2007, p. 512).

Because there is incomplete and unavailable information on both the current inventory of carbon storage and the effect of management on carbon storage (as described below), it is not possible to describe the total storage of carbon in forests, rangelands, and wood harvested from the Decision Area with precision and accuracy. On the other hand, it is possible to approximate the current

condition of these pools of carbon storage using some broad generalizations and assumptions that are consistent with current theoretical approaches.

Currently, a conservative estimate of 1.1 million tons of carbon (just over 1 million metric tons) is stored above ground in the Decision Area (see Table 3-1**Error! Reference source not found.**). In addition, 123 million board feet (MMBF) of wood has been harvested from the Decision Area since 1950 (from Baker Field Office [FO] records). This amount of wood would have contained approximately 61,254 ton of carbon at the time of processing (1,000 board feet of harvested softwood = 0.488 tons or 0.443 metric tons of carbon; Smith et al. 2006). The estimated accumulative carbon emission from this harvested wood amounts to 20 percent 10 years after harvest and 30 percent 50 years after harvest (Smith et al. 2006; Department of Energy 2007). This represents much less than 1 percent of the total carbon currently stored in forests and harvested wood in the United States, and substantially less than 1 percent of the total carbon stored in vegetation and litter globally.

Carbon storage related to forest management can be divided into three pools:

- Live trees
- Forest carbon other than live trees
- Harvested wood

Live trees include the carbon in the foliage, branches, stems, bark, and live roots of all trees, regardless of whether the trees can be sold as timber. Estimations of carbon in live trees generally involve the least uncertainty of all carbon pools associated with forest management. Forest inventory data on live trees is more detailed and reliable than data on other forest carbon pools. While the correlation between aboveground and belowground biomass in trees is variable among species, stand age, and stand structure (Litton et al. 2007; Lehtonen et al. 2004), there is no inventory information on which to base more refined expansion factors for trees in the Decision Area.

Conservatively, 400,000 tons of carbon is currently stored in live trees in the Decision Area. Live trees represent the largest pool of carbon in forests. The pool of forest carbon other than live trees includes:

- Dead wood (snags, coarse woody debris, stumps, and dead roots)
- Plants other than trees (shrubs and other plants)
- Litter (fine organic debris on the soil surface)
- Soil organic carbon

The biomass in dead wood, shrubs, other plants, litter, and soil organic carbon is likely to vary tremendously within the Decision Area (Page-Dumroese and Jurgensen 2006; Smithwick et al. 2002; Harmon 2001). Accurate inventory information for dead wood, shrubs, and litter levels is poor, and the amount of organic carbon in Decision Area soils is unknown.

Carbon is also stored in harvested wood (Ruddell et al. 2007). Quantifying the storage of carbon in harvested trees is challenging due to the variability in the product life of harvested wood, the amount of product recycling, and the fate of disposed harvested wood (Skog and Nicholson 2000). While some of the carbon in harvested wood is lost in processing and some is lost through disposal, such as burning and decay, disposal in landfills results in only partial loss of carbon, while some portion of the carbon in land-filled products continues to be stored (EPA 2007; Smith et al. 2006). Calculating the carbon stored in wood products from previous harvests is even more challenging than calculating the carbon stored in wood products from current harvests due to all of the variables described above having changed over time. For example, harvesting and processing have become more efficient, resulting in a greater portion of harvested wood in products. Disposal in open dumps previously resulted in rapid decay and loss of carbon, whereas current disposal in landfills results in slower decay and longer carbon storage (Woodbury et al. 2007; EPA 2007). Because of incomplete and unavailable information on the product life of harvested wood, the amount of product recycling, and the fate of disposed harvested wood from past harvests, it is not possible to quantify precisely or accurately the amount of carbon currently in storage from past harvests in the Decision Area.

Under average historic (pre-1850s) conditions, the Decision Area stored somewhat more carbon on rangelands, but less carbon on forested and woodland sites, than these respective sites do today. Although individual site conditions could vary, rangelands were generally in good to excellent ecological condition. Invasive non-native annual grasses and noxious weeds had not yet arrived in the Decision Area. Forest and woodlands were kept more open with larger, but fewer, trees per acre and less understory vegetation due to frequent, low-intensity fire intervals.

2. AIR QUALITY

a. Current Conditions

National Ambient Air Quality Standards

In order to protect human health and welfare, the 1963 Clean Air Act (Public Law [PL] 91-604), as amended in 1977 (PL 95-9) and reaffirmed in 1990 amendments, requires that the EPA establish standards for certain pollutants based on the best available science. The National Ambient Air Quality Standards (NAAQS) have been established for six air pollutants: particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, and lead.

"Particulate matter" is a term used to describe dispersed airborne solid and liquid particles, which remain in atmospheric suspension from a few seconds to several months. Particulate matter less than 10 microns in diameter (PM_{10}) is small enough to enter the human respiratory system. Particulate matter, alone or in combination with other pollutants, can constitute a health hazard (Oregon Department of Environmental Quality [DEQ] 2007).

Medical studies have shown a relationship between increases in particulate matter concentrations and rises in the number of clinic and hospital visits for upper respiratory infections, cardiac diseases, bronchitis, asthma, pneumonia, and emphysema. Deaths of elderly persons afflicted with respiratory diseases and cardiac conditions also show an increase during periods when the concentration of particulate matter is unusually high for several days.

Smoke from wildfire and prescribed fire is the primary air quality concern for the Planning Area, with particulate matter being the primary pollutant of concern in smoke. Particulate levels within the Planning Area due to smoke are generally well below the national standards. However, complaints about "nuisance smoke" frequently occur. Other sources of potential impacts to air quality include herbicide application, dust from vehicle and off-highway vehicle (OHV) use on unimproved roads, and dust from mineral/energy development activities.

Prescribed fires and wildfires are also a source of carbon monoxide, nitrogen dioxide, and sulfur dioxides, which are also regulated under the NAAQS. Since carbon monoxide quickly dissipates, it is generally only a concern for firefighters working at a fire site.

Most of the Planning Area has good air quality, as evidenced by the fact that no communities within the Planning Area are currently in non-attainment status. Baker City and La Grande, Oregon, are the primary populations affected by management of public lands in the Planning Area. Figure 3-1 illustrates Baker City's air quality in 2006, while Figure 3-2 illustrates La Grande's air quality in 2006. The tables below are from the 2006 Oregon Air Quality Data Summaries Report (ODEQ 2007). (Note: USFG = Unhealthy for Sensitive Groups)

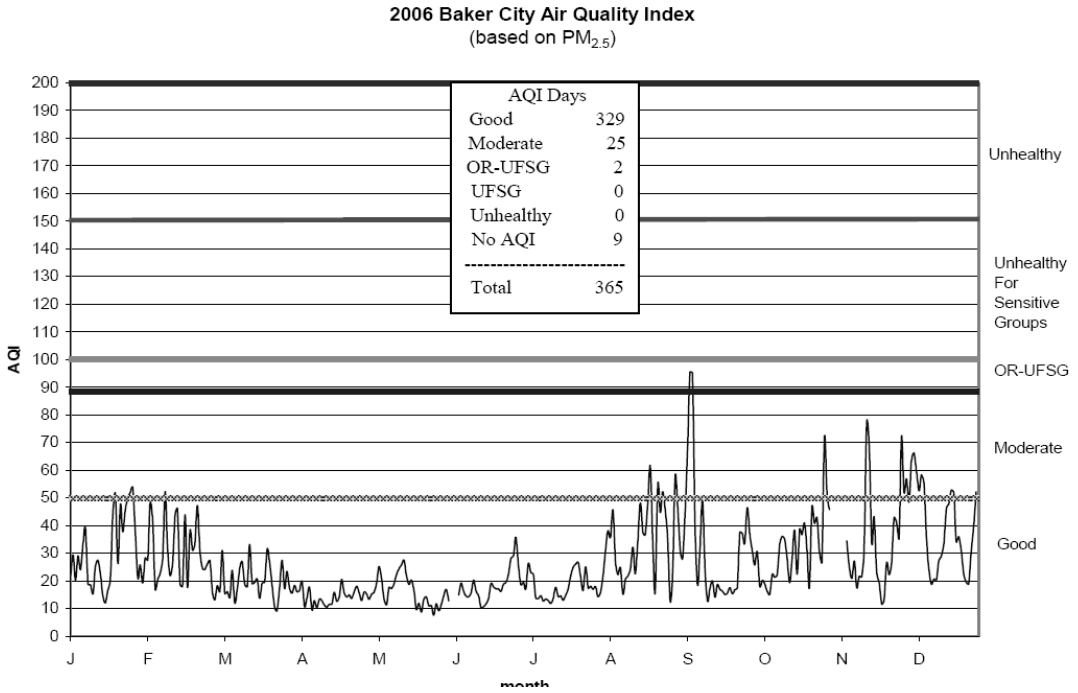
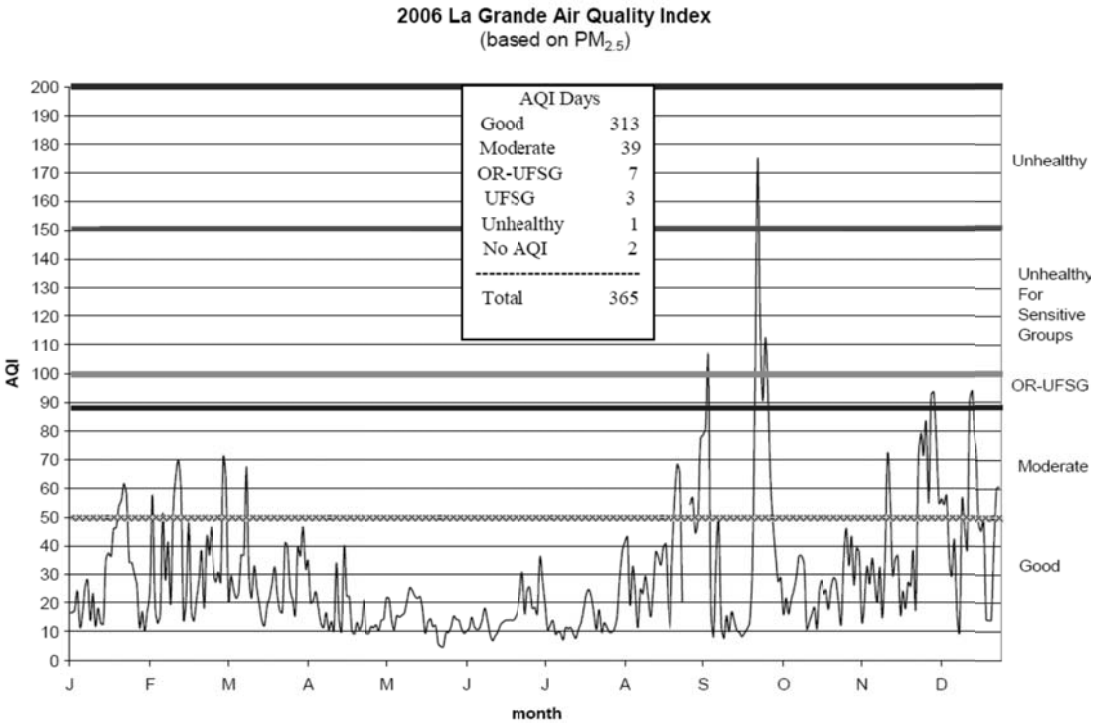


Figure 3-1. 2006 Baker City Air Quality Summary



Repeated violations of Clean Air Act standards have resulted in areas being declared as non-attainment areas. This designation means that the air quality in an area did not attain the established standards for a given criteria pollutant. As shown in Figure 3-1, La Grande reached unhealthy levels in October and was designated as a non-attainment area as a result. La Grande has since been designated an air quality maintenance area after air quality was improved. Union County smoke restrictions remain in place during the peak firewood-burning period from November 15 through February 15.

Due to regional transport winds, actions that occur a considerable distance away can affect air quality within the Planning Area. Distance buffers much of the area from potential adverse effects caused by industrial and metropolitan pollutants. However, population growth in northeast Oregon may diminish this buffer in coming decades.

Visibility and Regional Haze

Visibility is important to visitors who come to enjoy the scenic beauty of public lands in the Planning Area, often from a long distance away. Having clear days for such viewing opportunities is especially important for many visitors who are in the area for only a short period.

Class I airsheds require the highest level of protection under the federal Clean Air Act. The intent of Class I areas is to "preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value." Mandatory Class I areas consist of:

- National parks over 6,000 acres in size
- National memorial parks over 5,000 acres in size
- International parks
- All wilderness areas over 5,000 acres in size

The original Class I mandatory areas have been in existence since August 1977, with additional areas being established since that date. Once being classified as Class I, these areas can never be re-designated to another air quality classification.

Within Class I areas, visibility is the air quality-related value that is most affected by smoke from wildland fires. Particulates suspended in the atmosphere scatter light, thereby contributing to impaired visibility. Very small particles can travel great distances and contribute to regional haze problems. Furthermore, regional haze can result from prescribed burning over multiple days and/or multiple owners utilizing the airshed over a short period of time. Cumulative particulate load may be the result of fire use or urban and industrial sources, or it may be a combination of the two. Overall, however, the specific causes of regional haze are often difficult to identify.

Hells Canyon Wilderness and Eagle Cap Wilderness are the only Class I airsheds in the Planning Area, with only a small portion of the Hells Canyon Wilderness being within the Decision Area. All other federal (e.g., BLM, US Forest Service [USFS], and National Park Service [NPS]) lands within the Planning Area, including the non-wilderness portion of the Hells Canyon National Recreation Area, were given a Class II air classification under the Clean Air Act.

The impact of current air quality on Class I and Class II lands are primarily derived from smoke and regional haze that affects large areas of the West under certain conditions that are not completely understood. The issue of regional haze and its effects on western vistas has been and is being studied by others, such as the Grand Canyon Visibility Transport Commission, but this research remains beyond the scope of this analysis.

Several PM_{10} monitoring sites have been established in and around the Planning Area. Sites are operational from April 1 to approximately October 1 in Asotin, Enterprise, Baker City, and John Day, and throughout the year in La Grande and Pendleton. The monitoring network, in operation since 1995, provides real-time monitoring to those conducting prescribed burning, as well as providing for long-term monitoring of trends and conditions. While the intent is to protect human health during these activities, the network also obtains information concerning visibility impacts from airborne particles. The network expanded in 1999 and could grow in the future. This network, along with the Interagency Monitoring of Protected Visual Environments

(IMPROVE) stations, will be sufficient for both the monitoring of PM_{10} and the newer $PM_{2.5}$ standard.
The IMPROVE network was established to help states determine the baseline visibility conditions in mandatory Class I areas. Oregon and Washington, with the cooperation of the USFS and NPS, have recently established a number of IMPROVE sites, several of which are designed to monitor more than one Class I area. Within the Planning Area, IMPROVE sites are located near Starkey Experimental Forest headquarters and Oxbow Dam on the Snake River.

b. Trends

The occurrence of wildfires and the use of prescribed fire have been increasing over the last decade, yet the air quality in eastern Oregon has improved, as indicated in Figure 3-3.

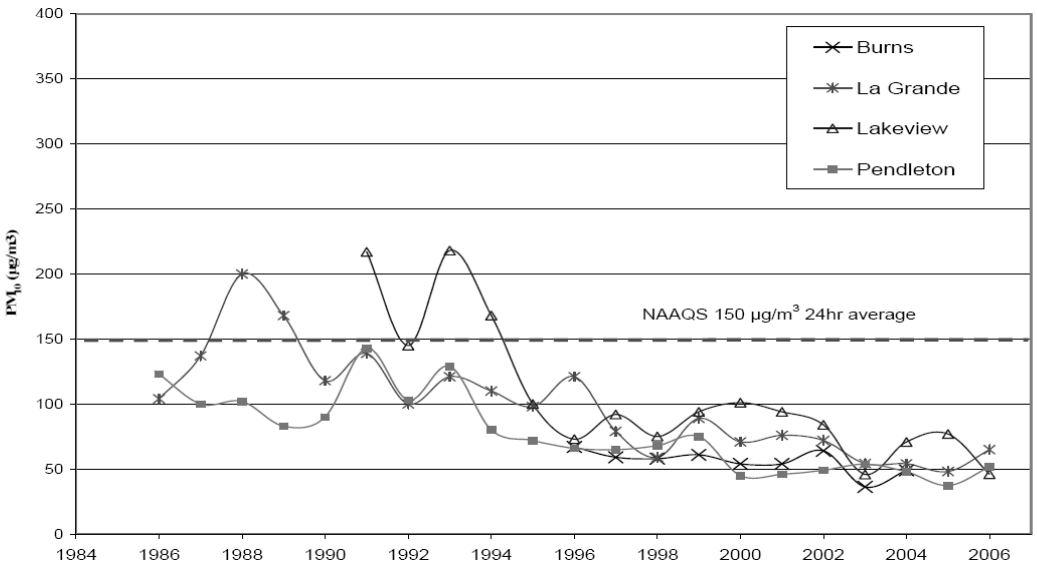


Figure 3-3. PM10 trend for Eastern Oregon Cites using the Second Highest 24 hr Average

Current data from a national visibility-monitoring network (Sisler et al. 1996) do not show fire to be the predominant source of visibility impairment in any Class I area. Emissions from fire are an important episodic contributor to atmospheric loading of visibility-impairing aerosols, including organic carbon, elemental carbon, and particulate matter. While fires can substantially impair visibility over short periods, they occur relatively infrequently and, thus, contribute less to long-term averages. Fire events contribute less to persistent visibility impairment than sources with more continuous emissions.

The Western Regional Air Partnership is in the process of defining what the natural conditions would be and is developing cooperative visibility protection plans in 12 of the western states, including Oregon and Washington. These plans must work towards the goals of (1) improving visibility on the haziest 20 percent of days and (2) protecting the visibility on the cleanest 20 percent of days.

No "restricted areas" (i.e., areas for which permits to burn on forestland are required year round), "designated areas" (i.e., principal population centers), or "special protection zones" (i.e., buffer zones around non-attainment areas) currently exist in or near the Planning Area. In 2009, Oregon Department of Forestry (ODF) burning rules were changed. Baker City, La Grande, Burns, John Day, and Pendleton are now designated as Smoke Sensitive Receptor Areas.

While the overall trend is for an increasing need to use prescribed fire to reduce fuel hazards and restore ecosystems, more stringent smoke management restrictions that adhere to the Oregon Smoke Management Plan should minimize future impacts.

3. WATER RESOURCES

A hydrologic unit code (HUC) is a hierarchical, numeric code that uniquely identifies drainage areas and is used to organize hydrologic data. Under this coding system, a smaller number indicates a larger drainage area. For instance, HUC 2 watersheds are larger in area than HUC 3 watersheds, with the latter generally containing several HUC 4s. In the state of Oregon, the HUC 4 watersheds are commonly referred to as subbasins. Table 3-2 shows the relationships of the HUC numbering system and level of watersheds within the Planning Area. The units used in the discussion of water resources in this section are HUC 4s.

Table 3-2. HUC 4 Watersheds in the Planning Area

HUC Field	Region #	Name	Category
1	**17**	**Pacific Northwest**	**region**
2	***1705***	***Middle Snake***	***subregion***
3	170501	Middle Snake/Boise	basin
4	17050119	Willow	subbasin
3	170502	Middle Snake/Powder	basin
4	17050201	Brownlee Reservoir	subbasin
4	17050202	Burnt River	subbasin
4	17050203	Powder River	subbasin
2	***1706***	***Lower Snake***	***subregion***
3	170601	Lower Snake	basin
4	17060106	Lower Grande Ronde	subbasin
4	17060102	Imnaha River	subbasin
4	17060104	Upper Grande Ronde River	subbasin
4	17060105	Wallowa River	subbasin
2	***1707***	***Middle Columbia***	***subregion***
3	170701	Middle Columbia	basin
4	17070101	Middle Columbia-Lake Wallula	subbasin
4	17070102	Walla Walla	subbasin
4	17070103	Umatilla	subbasin
4	17070104	Willow (Morrow Co)	subbasin
3	170702	John Day	basin
4	17070204	Lower John Day	subbasin
4	17070202	North Fork John Day	subbasin

Table 3-3 shows the subbasins that overlay the Planning Area. While the Planning Area covers over half the subbasins, the Decision Area covers only 2.6 percent of the total subbasin area. The Decision Area is concentrated in the Brownlee Reservoir, Burnt River, and Powder River subbasins. Between 1 and 6 percent of the Decision Area occurs within the Lower Snake-Asotin, Lower Grande Ronde, Willow, and Umatilla subbasins, while less than 1 percent of the Decision Area falls within eight other subbasins. Map 1-3 (on CD) illustrates the location of the HUC 4 subbasins in the Planning Area.

Table 3-3. Acres and Subbasins (HUC 4) within the Planning Area

Subbasin #	Subbasin Name	Subbasin (Acres)	Planning Area (Acres)	%Subbasin in Planning Area	Decision Area (Acres)	% Subbasin in Decision Area	% Decision Area in Subbasin
17050201	Brownlee Reservoir	833,486	334,491	40.13	85,050	10.19	19.84
17050202	Burnt	703,045	700,477	99.63	152,411	21.66	35.57
17060101	Hells Canyon	346,254	123,876	35.78	0	0.00	0.00
17060102	Imnaha	544,006	544,006	100.00	543	0.10	0.13
17060106	Lower Grande Ronde	971,001	844,664	86.99	25,454	2.62	5.95
17070204	Lower John Day	2,021,050	105,402	5.22	40	0.01	0.01
17060103	Lower Snake-Asotin	449,931	68,537	15.23	4,489	1.00	1.05
17070101	Middle Columbia-Lake Wallula	1,651,659	414,039	25.07	3,286	0.22	0.85
17070202	North Fork John Day	1,182,755	376,959	31.87	2,246	0.20	0.55
17050203	Powder	1,092,562	1,092,562	100.00	131,946	12.08	30.82
17070103	Umatilla	1,610,946	1,610,945	100	4,188	0.23	0.87
17060104	Upper Grande Ronde	1,046,628	1,046,627	100.00	4,369	0.40	0.99
17050116	Upper Malheur	1,553,321	92	<0.01	0	0.00	0.00
17070102	Walla Walla	1,126,171	307,489	27.30	2,776	0.25	0.65
17060105	Wallowa	610,200	610,200	100.00	2,647	0.43	0.62
17050119	Willow	485,380	20,738	4.27	8,929	1.84	2.09
17070104	Willow (Morrow Co)	555,813	462,160	83.15	52	0.01	0.01
Totals:		16,784,208	8,663,264*	52.62	428,426	2.55	100

*Total does not equal 8,662,806 due to rounding.

The waterways within these subbasins flow into the Columbia River, either directly or via the Snake River. Map 1-3 (on CD) shows the location of the major streams that flow across the Planning and Decision Areas.

a. Current Condition

Groundwater

In general, groundwater systems are divided into confined and unconfined systems. Unconfined systems are found in alluvium along alluvial river systems such as the Umatilla River. They can also include springs and seeps that occur where groundwater intercepts the surface.

Confined systems within the Planning Area are usually in basalts or other fractured volcanics. As with surface water, the major use of groundwater in the Planning Area is for irrigation. The BLM uses some springs and wells for stock watering and for human consumption at campgrounds.

Streams

There are an estimated 578 miles of perennial streams, 1,252 miles of intermittent or ephemeral streams, and 34 miles of streams with unclassified flow type in the Decision Area (based on the Vale District Geographic Information System [GIS] layer). About one-third of the streams in the subbasins with the largest amount of land within the Decision Area (i.e., Brownlee Reservoir, Burnt River, and Powder River) have perennial flow. Table 3-4 contains data on the miles of intermittent, perennial, and unclassified streams by subbasins located in the Decision Area.

Table 3-4. Steam Distance and Flow Type by Subbasin within the Decision Area

Subbasin	Intermittent or ephemeral (Miles)	Perennial (Miles)	Unknown/ Unclassified (Miles)	Total Miles	% Perennial
Brownlee Reservoir	303.1	116.2	-	419.4	27.7
Burnt River	358.0	184.8	12.0	554.8	33.3
Imnaha River	5.2	0.6	-	5.8	9.9
Lower Grande Ronde	87.5	59.6	0.1	147.1	40.5
Lower John Day	0.3	0.3	-	0.5	50.0
Lower Snake-Asotin	32.6	14.8	-	47.4	31.3
Middle Columbia-Lake Wallula	6.5	2.6	1.6	10.7	24.2
North Fork John Day	10.4	7.0	0.0	17.4	40.2
Powder River	328.3	159.1	11.3	498.7	31.9
Umatilla	9.3	2.8	-	12.1	23.4
Upper Grande Ronde River	10.4	6.3	-	16.7	37.7
Walla Walla	12.4	9.1	-	21.5	42.4
Wallowa River	29.3	10.3	-	39.6	25.9
Willow (Snake)	58.5	4.2	8.6	71.3	5.8
Willow (Morrow Co Columbia)	0.3	0	-	0.3	0.0
Totals:	1252.1	577.7	33.6	1863.3	31.0

Stream geomorphology within the Decision Area varies widely. For example, stream gradients in the Powder River subbasin range from over 20 percent in higher elevations to 2 - 4 percent in lower elevations (Nowak 2004b). Riparian vegetation in higher elevation streams tend to consist of a higher percentage of trees and shrubs. At lower elevations, more of the riparian vegetation consists of shrubs, grasses, and forbs. High elevation headwater streams tend to be high gradient channels that transport larger size material. A large percentage of boulders and cobbles in the bed and banks often stabilize these channels. Lower gradient streams found in less confined valleys often have smaller substrates that are less erosion resistant. These areas are more reliant on riparian vegetation for channel stability, are more susceptible to disturbance, and recover less quickly when disturbed (Rosgen 1996).

Recurring flows of moderate to high magnitude are responsible for most sediment transport and maintain stream channel size and shape (Wolman and Miller 1960). Channel adjustment associated with these moderate to high stream flows following natural or human induced disturbance have altered the form of many stream reaches in the Decision Area. Changes include vertical and/or lateral channel erosion that has lowered the surrounding groundwater table and removed the streams connection with the floodplain. Entrenched channels and a lowered groundwater table can reduce recharge of the stream during summer low flows. Furthermore, it can reduce recruitment and recovery of riparian vegetation until re-establishment of the floodplain reduces erosive forces.

Riparian vegetation is influenced by and influences floodplain development. The width of floodplains and riparian areas along a stream channel can vary with channel type. Steeper slopes tend to have more confined straighter channels with a smaller floodplain. Less steep areas have a more meandering channel and wider floodplains. As the width of a floodplain or riparian area increases, the water storage capacity of the system increases. Infiltration and subsurface flow from uplands, alluvial groundwater from the stream, and infiltration during periods of floodplain inundation contribute to this storage. Water stored during the wet season in the stream banks and floodplains provides a source for subsequent release of water to the stream during the dry season (Ponce and Lindquest 1990).

Water Quantity

Water quantity will be discussed only in very general terms because it is difficult to quantify water available for use due to the large number of surface water rights used by private landowners in the Planning Area. As most water withdrawals are associated with private land, the BLM has little control over water withdrawals within the Planning Area and, therefore, has little control over low flows, which can have a significant effect on water quality and habitat. Precipitation and snowpack are dependent on climate and control timing and volume of peak flows. Management of public lands can have an effect on the surface water recharge through protection of floodplain and channel condition. Past management in some areas has lead to down cutting of stream channels and disconnecting the floodplain from the channel. Where riparian vegetation can be improved or restored, it can provide roughness, sediment catchment, and reconnection to floodplains, all of which result in improved recharge. Under these conditions, more water is stored within channel sediments and the floodplain along the channel, which, in turn, slowly release water to add to base flow (Ponce and Lindquest 1990).

Data for the 1995 water year indicate that 97 percent (2.4 million acre-feet or 33 percent of total stream flow) of total water withdrawals from rivers emanating from the Blue Mountains is used for irrigation, with only about 1 percent is used for human consumption (Solley et al. 1998). Seventeen percent of total water withdrawals are from groundwater and the remaining 83 percent is water diverted directly from surface streams. Irrigation water is used primarily from March through October, depending on the basin and state water right laws. All of the subbasins are completely allocated or over-allocated for the amount of water available. The BLM has 397

developed springs (developed with permittees through a cost share program) within the Decision Area, which are used primarily for wildlife and livestock watering.

Water Rights

The BLM holds water rights on 159 reservoirs and 25 springs within the Decision Area for a total of 284 acre-feet of water (V. Pritchard, pers. comm., 2009). The majority of reservoirs are small ponds on intermittent or ephemeral streams. These are generally used for wildlife, recreation, and watering livestock. The BLM also uses some wells for livestock and for human consumption at recreation facilities.

The State of Oregon recognizes instream water rights for the public benefit to maintain sufficient flows to protect recreation, fish, wildlife, and other river-related resources. Oregon Parks and Recreation Department (OPRD), Oregon Department of Fish and Wildlife (ODFW), and ODEQ apply for instream water rights to Oregon Water Resources Department's (OWRD's), Water Resource Commission. The priority date for instream water rights is the date an application is submitted to OWRD.

In addition to state-based water rights, the federal government may also assert claims to federally reserved water rights. The Federal Reserved Water Rights Doctrine, known as the Winters Doctrine, was announced in the landmark case, *Winters v. United States,* 207 U.S. 564 (1908). These water rights exist as a matter of federal, rather than state, law. Legislation passed in 1987 and amended in 1993 allows the director of the OWRD to act on behalf of the State of Oregon to negotiate settlements for federal reserved water rights (OWRD 2008). These negotiations allow the director to include claimants, state and federal agencies, other water users, and public interest groups in discussions to resolve and quantify the use of water on federal reservations (OWRD 2008).

Current BLM policy is to use the state's instream flow water right process as the first and primary method to preserve flow-dependant values for any stream designated as a wild and scenic river (WSR). The National WSR Act (PL 90-542) specifically reserved the minimum quantity of water necessary to maintain the values for which the river was designated. The Act authorizes a federal reserved water right, with the priority dates for each of the river segments being the date of designation. A federal reserved water right would only be exercised if the state's appropriative instream water rights process were inadequate to protect the designated values of the river. Current Department of the Interior (DOI) policy provides latitude to cooperate with Oregon natural resource agencies to achieve resource protection objectives prior to exercising a reserved water right. This policy does not abrogate the federal reserved water right.

Protection of instream flows will rely, in part, on existing instream water rights that the State of Oregon has issued for some WSR segments. These rights are subject to senior priority appropriations. The OWRD has identified desired flow levels to protect recreation, fish, and

wildlife. Although these flow levels are not water rights, the OWRD does utilize them in its calculations of water availability during basin adjudications.

Source Water Protection Areas

There are three state defined source water protection areas within the Planning Area. Most of the BLM areas are near, but not adjacent to, the Columbia River. The Decision Area acreage within source water protection areas, including public lands, is shown in Table 3-5.

Table 3-5. Acres of Public Lands within Source Water Protection Areas

Town	Source Water	Decision Area Acres
Baker City	Goodrich Creek	3
Hermiston	Columbia River	6,268
Pendleton	Umatilla River	909
Total		7,180

Water Quality

Water quality standards are established to protect beneficial uses of the state's waters. Beneficial uses are assigned by basin in ODEQ's Oregon Administrative Rules for water quality. Beneficial uses include:

- Domestic water supply
- Fishing
- Industrial water supply
- Boating
- Irrigation
- Water contact recreation
- Livestock watering
- Aesthetic quality
- Fish and aquatic life
- Hydropower
- Wildlife and hunting
- Commercial navigation and transportation

Every two years, the states assess streams and lakes for water quality and report to EPA on the condition of state waters to meet the requirements of the federal Clean Water Act. Many reaches within the Planning Area were identified as having non-point source pollution problems affecting beneficial uses, including those for fisheries, aquatic habitat, wildlife habitat, and water contact recreation.

The list of water quality limiting parameters in the Planning Area include algae, bacteria, dissolved oxygen (DO), flow modification, habitat modification, nutrients, potential of hydrogen

(pH), sedimentation, and temperature. Of these concerns, temperature, sediment, turbidity, flow modification, and habitat modification are widespread issues throughout the Decision Area.

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect beneficial uses of water, such as for whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock, and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water regulations. The ODEQ previously placed water bodies on the 303(d) list based on habitat modification and flow modification. These habitat modification listings relied on information indicating inadequate pool frequency and lack of large woody debris, while the flow modification listings were based on inadequate flow to maintain ODFW instream water rights. Because the Clean Water Act does not consider flow and habitat as pollutants, these water bodies can be removed from the 303(d) list and placed in the category "water quality limited but a pollutant does not cause the impairment" (BLM 2010a).

A total maximum daily load (TMDL) defines the amount of a pollutant that can be present in a water body while meeting water quality standards. Larger water bodies such as the Columbia and Snake River can have multiple TMDLs as they have multiple pollutants. The ODEQ develops a water quality management plan (WQMP) as a broad strategy for implementing TMDL allocations. Along with associated planning, TMDLs and WQMPs work together to protect designated beneficial uses such as aquatic life, drinking water supplies, and water contact recreation. Several of the subbasins in the Planning Area have TMDLs and WQMPs in place (see Table 3-6). Eventually all subbasins will have TMDLs and associated WQMPs.

Table 3-6. Subbasin TMDL Status as of July 2009

Subbasin	TMDL Status	State
Brownlee Reservoir	2004 part of Lower Snake	OR-ID
Burnt River	TMDL Not Started	OR
Imnaha River	TMDL Report In-Progress	OR
Lower Grande Ronde	TMDL Report In-Progress	OR
Lower John Day	TMDL Report In-Progress	OR
Lower Snake-Asotin	Approved 2004	ID-WA-OR
Middle Columbia-Lake Wallula	Approved 2002	WA-OR
North Fork John Day	TMDL Report In-Progress	OR
Powder River	TMDL Not Started	OR
Umatilla	Approved 2001	OR
Upper Grande Ronde River	Approved 2000	OR
Walla Walla	Approved 2005	OR
Wallowa River	TMDL Report In-Progress	OR
Willow	TMDL Report In-Progress, part of Malheur report	OR
Willow (Morrow Co.)	2007	OR

The development and implementation of water quality restoration plans (WQRPs) provide the specific actions by which the BLM will meet TMDL requirements on lands under their jurisdiction. These plans are required if a TMDL has been established (USFS and BLM 1999). At this time, three WQRPs have been completed for the Decision Area: one for the Snake River, one for the South Fork Walla Walla River, and one for the Lookout Mountain area. All finalized WQRPs address high stream temperatures.

The majority of the Decision Area is within the Burnt River and Powder River subbasins. Total maximum daily load assessments for these rivers will be completed in the next few years. Brownlee Reservoir is included in the Lower Snake TMDL, with temperature being the pollutant addressed in the Brownlee Reservoir Subbasin. While the Snake River is listed for mercury, a TMDL to address mercury has been postponed at this time.

Table 3-7 shows the miles of streams per subbasin within the Decision Area needing or having a TMDL in place. The Burnt River, Powder River, and the Lower Grande Ronde subbasins have the most miles of stream listed in need of TMDLs. While only a few acres of the Decision Area are in the Lower Grande Ronde subbasin, the public lands are concentrated along the mainstem of the Grande Ronde River and Joseph Creek, which currently have a draft TMDL with scheduled completion in 2010.

Table 3-7. TMDL Status by Subbasin for Streams in the Decision Area

Subbasin	TMDL Approved (Miles)	TMDL Needed (Miles)
Brownlee Reservoir	12.7	7.0*
Burnt River	-	39.8
Imnaha River	-	0.3
Lower Grande Ronde	-	33.2
North Fork John Day	-	2.4
Powder River	-	26.1
Upper Grande Ronde River	0.3	3.7**
Walla Walla	4.0	-
Wallowa River	-	7.9
Willow	-	4.4
Total Miles	17	124.8

*TMDL for mercury on Snake River has not been written at this time
** a draft is out and scheduled for completion in 2010

Human activities have lead to many impaired streams. Temperature, sediment, and turbidity are the primary parameters for listings for streams within the Planning Area. In addition, pH, bacteria, DO, nutrients, and bacteria are also listed as impairing beneficial uses for some streams. Appendix 3.1 presents the ODEQ streams and listing criteria for streams within the Planning Area.

Management actions that increase stream temperatures include the disturbance of riparian vegetation that reduces stream shading due to decreased vegetation height, width, or density, and thereby increases solar radiation reaching the stream surface. Channel widening (increased

width to depth ratios) increases the stream surface to solar radiation. Other factors affecting stream temperature are losses in groundwater exchange from reduced acres of functioning floodplain soils, which can release groundwater during the summer, contributing to cooling temperature regimes.

In addition to shading and cooling streams, riparian vegetation also helps stabilize banks and adds large wood to the channel, which helps regulate sediment movement. Other activities leading to sediment problems include road-stream interaction (e.g., travel on or construction/maintenance of roads that cross or are near streams) and activities that remove ground cover (e.g., livestock grazing, wildfire, and mining).

The BLM collects continuous temperature data during the summer on a set of perennial streams in watersheds that contain listed fish and maintains monitoring reports for yearly monitoring data (see Map 1-3 for locations of the sites monitored). At this time, these streams have temperatures higher than the 68 °F standard for at least a few days out of the year, with the exception of Potter Creek in the Upper Grande Ronde Subbasin, which has all TMDL standards approved. The temperature of this stream rarely goes above 55 °F, making it one of the coldest streams in eastern Oregon (BLM 2006; BLM 2007a).

Riparian Function and Stream Stability

Riparian conditions for streams in the Decision Area were inventoried and rated for the Baker RMP (BLM 1989). Of the 169 miles of streams inventoried, 18 miles (11 percent) were in excellent condition, 65 miles (39 percent) were in good condition, 61 miles (36 percent) were in fair condition, and 26 miles (15 percent) were in poor condition. Overall, trends were primarily static. Although the method used for inventorying riparian conditions for the Baker RMP (BLM 1989) is no longer used and is not directly comparable to proper functioning condition (PFC) surveys that the BLM currently uses to assess stream stability and riparian condition, general comparison of trends within the Decision Area can be made.

PFC Surveys

The BLM completes PFC surveys at the local level and uses them as baseline data for channel stability and riparian condition. The condition of the channel and riparian vegetation has great influence over water quality for temperature and fine sediment.

Of the 1,863 miles of stream listed in the Baker BLM GIS streams layer, approximately 25 percent have been surveyed. The majority of the streams surveyed are in the Brownlee Reservoir, Powder River, and Burnt River subbasins, where most of the Decision Area also occurs. Proper functioning condition surveys look at the stability of the stream channel including the riparian vegetation along the banks. Of the PFC data collected on BLM streams, one stream was surveyed in 1995, while the others were surveyed between 1998 and 2009. Overall, the majority of streams surveyed are proper functioning or functional with an upward trend (see Table 3-8 and Map 1-3). Powder River and Burnt River are the subbasins with less

than 50 percent of the streams at PFC or functional with an upward trend. Brownlee Reservoir and the Lower Grande Ronde subbasins have the most reaches surveyed at PFC or functioning with an upward trend. The other subbasins have very small amount of land within the Decision Area, and thus contain only a few streams that cross public lands.

Table 3-8. PFC Survey Results for BLM Streams Within the Subbasins (2002-2009)

Subbasin	PFC (Miles)	Functional at Risk - Upward Trend (Miles)	Functional at Risk Downward Trend (Miles)	Functional at Risk - Trend not Apparent (Miles)	Non-Functional (Miles)	Total Miles	Not Meeting Standards * (Miles)	%PFC or Up-ward Trend	% Not meeting Standards
Brownlee Reservoir	49.7	33.9	11.9	12.4	4.0	111.9	28.3	74.7	25.3
Burnt River	37.8	43.3	30.8	42.2	11.2	165.2	84.2	49.1	50.9
Lower Grande Ronde	32.6	9.9	0.4	4.4	--	47.3	4.8	89.9	10.1
Middle Columbia-Lake Wallula	5.8	--	--	--	--	5.8	0.0	100.0	0.0
North Fork John Day	1.3	2.0	--	--	--	3.4	0.0	100.0	0.0
Powder River	22.1	17.6	18.4	41.8	6.4	106.2	66.5	37.2	62.3
Walla Walla	3.2	--	0.5	--	--	3.8	0.5	85.5	14.5
Wallowa	6.7	--		--	--	6.7	0.0	100.0	0.0
Willow (Snake)	5.4	2.4	2.9	1.3	--	12.0	4.2	65.2	34.8
Totals	164.5	109.2	64.9	102.0	21.6	462.2	188.5	59.1	40.7

*"Standards" = Rangeland Health Standards. Not meeting "Standards" includes non-functional, downward trend and no apparent trend.

Livestock grazing, both historical and current, is the most common reason listed for streams not meeting PFC. Wildlife, roads, and mining are also common reasons listed in the survey data for not meeting PFC. In addition, effects from water diversions and reservoirs are listed as factors. Most streams have more than one factor impairing the function of the stream. For the 76 miles of stream surveyed were the BLM suspects that current livestock grazing as a factor in not meeting PFC or having an upward trend, 85 percent are also affected by other factors. Wildlife, roads, and mining (both present and historical) are also suspected as being causal factors. The PFC rating is used as one of several tools for evaluating streams and riparian areas for Rangeland Standards and Guides (BLM 1997). Where present livestock grazing is suspected of being a cause of not meeting rangeland health standards, within one year of an analysis for grazing permit renewal, changes in grazing management focused on improving riparian conditions will occur in order to move towards meeting rangeland health standards.

Brownlee Reservoir: The portion of the Decision Area in the Brownlee Reservoir Subbasin consists of a narrow strip of land along the west side of the Snake River. Only the tributaries were surveyed and not the mainstem Snake River. Access is very limited to most streams in the subbasin due to topography and steepness, which also limits their use. As a result, streams in the

Brownlee Reservoir subbasin show little alteration and are in good condition, with a majority (74.7 percent) being at PFC or functioning with an upward trend.

Burnt River: Forty-nine percent of Decision Area streams surveyed in the Burnt River subbasin are at PFC or functional at risk with an upward trend. However, the survey results are more mixed than the other subbasins, ranging from PFC to nonfunctional. In addition to grazing, there are many streams impacted from mines, reservoirs, channelization, and roads.

Lower Grande Ronde: Most of the Decision Area in this subbasin is along the Grande Ronde River and Joseph Creek. Of the surveyed section of the Grande Ronde River, 89.9 percent is at PFC or functioning with an upward trend.

The public lands along the Grande Ronde River have been managed more intensively since the Endangered Species Act (ESA) listings of Chinook salmon, steelhead, and bull trout (see discussion in Section B.7 [Fisheries] in this chapter). Inventory and assessment of most public lands began in 1991 with the first species listings. The BLM paid particular attention to livestock grazing leases, seasons of use, and general ecological conditions.

Middle Columbia-Lake Wallula: The BLM manages a very small amount of land to the south of the Columbia River in Juniper Canyon, which was rated at PFC for the 5.8 miles surveyed.

North Fork John Day: This subbasin encompasses only a small portion of the Decision Area, with only 3.4 miles of streams surveyed. The North and South Forks of Cable Creek were at PFC or functional with an upward trend where surveyed.

Powder River: While most of the land along the Powder River is private, public lands are present along the river upstream of Medical Springs Highway. The majority of the streams surveyed were on the north side of the river. For this subbasin, 37.2 percent of the streams surveyed were at PFC or functional with an upward trend and 62.3 were nonfunctional, functional with a downward trend, or showed no trend. Current and historical grazing were the main reasons for not meeting Rangeland Standards and Guides, but roads and past mining were also common reasons for the condition of the stream channels.

The Powder River itself was at PFC where surveyed. Thief Valley Dam affects the river flow and sediment, which limits point bars and sand distribution and has resulted in a high width to depth ratio.

Walla Walla: The section of the South Fork of the Walla Walla River surveyed showed the river at PFC. The North Fork of the Walla Walla River is rated as functional with a downward trend.

Willow: Public lands occur in a small section in the northern part of the subbasin, which is experiencing active mining. The streams surveyed are Basin Creek and its tributaries, the majority of which (68 percent) rated at PFC or functioning at risk with an upward trend.

Lentic Waters: Lentic waters are standing water habitat, such as lakes, ponds, seeps, bogs, and meadows. In the last two years, slightly more than 10 acres of lentic areas have been surveyed, with less than 40 percent identified at PFC or functional at risk with an upward trend. Table 3-9 shows the results for the lentic water surveys.

Table 3-9. Lentic PFC surveys (2006-2008)

Lentic surveyed 2006-2008	Functional at Risk Downward Trend	Functional at Risk - Trend not Apparent	Functional at Risk - Upward Trend	Non-functional	PFC	% PFC or upward trend	% Nonfunctional or downward trend
Total Acres =10.25	2.68	0.51	0.25	3.21	3.6	37.6	57.5

Roads

There are approximately 1,236 miles of road within the Decision Area, based on the BLM's GIS roads layer. Of these, 73 miles) are BLM maintained roads, 132 miles are county roads and 15 miles are Forest Service roads (see Table 3-54 and Table 3-55 in Section C.6. Transportation and Access for more details). There are 1,250 miles of primitive roads or trails open to OHV use. Roads that parallel or cross streams are likely to have a negative effect on water quality by increasing the amount of fine sediment that reaches the stream. These roads are described as connected to streams (Furnis et al. 1999; Wemple et al. 2001). The closer roads are to streams, the more likely they are to be connected and to act as a fine sediment source, which degrades stream habitat. Primitive roads are most commonly found along streams (see Table 3-10). These roads were not built to any specifications for stability or to reduce negative environmental effects and are not maintained.

Table 3-10. Roads within 100 Feet of Streams

Road Classification	Perennial Stream (Miles)	Intermittent Stream (Miles)
Maintained	25	19
Primitive	54	88
Trail	11	26
Totals	90	133

Areas with higher road densities are more likely to have these road/stream connections, which leads to higher rates of erosion and subsequent elevated levels of fine sediment transported into streams.

Road densities in the Decision Area are shown by subbasin in Table 3-11. Of the subbasins with larger acreages within the Decision Area, the Burnt River and Powder River subbasins have road densities of 2.4 and 2.5 miles per square mile, respectively. The number of requests for rights-of-way (ROWs) is increasing over time. Consequently, without changes in management, road densities would be expected to go up over time.

Table 3-11. Road Density in the Decision Area by Subbasin

Subbasin Name	Decision Area Sq. miles	–Total Roads Miles	% Primitive Roads	Road Density	Trails (Miles)	Density including trails
Brownlee Reservoir	133	147.3	68.7	1.1	46.1	1.5
Burnt	238	478.1	87.1	2.0	87.3	2.4
Imnaha	1	0.7	100.0	0.8	0.0	0.8
Lower John Day	0.1	15.4	31.5	0.4	17.3	0.8
Lower Grande Ronde	40	0.2	100.0	3.5	0.0	3.5
Lower Snake-Asotin	7	2.2	0.0	0.3	6.3	1.2
Middle Columbia-Lake Wallula	5	11.8	77.4	2.3	1.5	2.6
North Fork John Day	4	17.2	93.2	4.9	0.0	4.9
Powder	206	458.3	87.3	2.2	52.4	2.5
Umatilla	7	18.3	88.6	2.8	13.4	4.8
Upper Grande Ronde	7	27.8	91.8	4.1	0.8	4.2
Walla Walla	4	2.6	81.1	0.6	3.4	1.4
Wallowa	4	5.1	100.0	1.2	3.4	2.1
Willow (Snake)	14	49.4	80.7	3.5	3.3	3.8
Willow (Morrow Co)	0.1	0.2	100.0	2.1	0.0	2.1
*Includes all known roads that cross public land, based on BLM GIS data						

The use of OHVs can also negatively affect water quality by disturbing soil and removing vegetative cover (Stokowski and LaPointe 2000; Webb et al. 1978). At this time, the majority of the Decision Area is open for OHV use. As use of these vehicles continues to expand, increased effects to water quality would subsequently occur (Stokowski and LaPointe 2000).

b. Trends

Effect of Climate Change

Climates vary depending on location and the timeframe examined. Paleoclimatic evidence and historical weather records show that the Columbia Basin region, including the Planning Area, has undergone significant fluctuations in temperature and precipitation as different air masses alternate dominance over the basin (Ferguson 1999). In this region, precipitation trends over the last 50 to 100 years indicate a general decrease in winter precipitation and increase in summer precipitation (Ferguson 1999), while temperature trends indicate a slight increase in winter temperatures and slight decrease in summer temperatures. Warmer temperatures have lead to earlier peak flows and lower summer base flows. Rainstorms are showing a trend towards being fewer in number, but being higher intensity, which leads to a flashier flow regime, especially in the summer.

Runoff from watersheds in the Planning Area is largely dominated by snowmelt between March and June, with the earlier runoff from low-elevation watersheds and somewhat later runoff from high-elevation watersheds. In lower elevation watersheds, most peak-flow events occur with winter rain-on-snow events between December and February. Trends for an increase in winter temperatures could potentially increase the chances of rain-on-snow events due to the slight

warming of temperatures, which would, in turn, lead to higher peak flows. The increased winter temperature could also lead to less snow pack and, therefore, a longer period with low flows in the summer. The slight decrease in summer temperature and slight increase in summer precipitation could increase summer flows slightly. Given the natural variation in climate over time, predicting effects of climate change on the Planning Area over the next 20 years is subject to variable interpretation among researchers.

Water Quantity

Over the last century or more, the trend has been for ever-increasing water use in the western United States. In eastern Oregon, including the Planning Area, streams have been over-allocated for many years, with demand for use greater than water available for such use. Reservoirs store water that would ordinarily run off in the spring in order to make it available for use during dry summer months. Despite this, many streams do not flow, or have substantially reduced flows, during the driest and hottest time of the year due to water withdrawals. The BLM has little control over water quantity as most of the water removed from surface flow is used for irrigating privately owned lands.

Water Quality

Temperature data have not been collected for enough years to identify a trend in stream temperature. Temperatures along many streams would be likely to improve if vegetation along stream banks and in riparian areas increased, thereby providing thermal cover for the streams. As riparian areas improve, streams that have widened due to cattle trampling and other management issues will have the opportunity to become narrower and deeper, which will also help modulate temperature. For wide, shallow streams, such as the John Day and Grande Ronde rivers, water withdrawals potentially have as large an impact as stream shading on stream temperature.

In the Powder River Subbasin, an abandoned mine restoration project has been underway since 2005 to remove and treat heavy metals in tailings from an abandoned mine within the Balm Creek area, and to prevent the hazardous materials from contact with riparian areas and entering Balm Creek. Concentrations of copper and zinc have killed fish, including sensitive fish species, in the stream. Continued construction activity in 2006 has revealed an additional contaminated site that requires sediment removal. Approximately 20 acres have been disturbed/rehabilitated and work on an additional 20 acres waits further funding. In addition to improvements in water quality, long-term rehabilitation of the riparian area is expected after project completion. All rehabilitated sites will be fenced to exclude livestock and will be planted and/or reseeded with native species.

The USFS and BLM have implemented changes in management direction on public lands that include stream protection buffers, improved grazing management and monitoring, road closures and decommissioning, improved logging techniques and equipment, and silvicultural

prescriptions designed to restore ecosystem health. The combination of these efforts has led to improved riparian conditions, which leads to improved water quality.

Riparian Function and Stream Stability

The trend is generally stable or upward for riparian areas. This is especially true in subbasins with anadromous fish[1] where restoration has been emphasized. The Burnt River and Powder River subbasins, which are no longer anadromous subbasins due to dams on the Snake River, have the most miles of stream showing a downward or static trend.

Riparian function and stream stability are slowly improving due to implementation of best management practices (BMPs), stream buffers, and the other management directions discussed above under water quality. Rangeland Standards and Guides are in place to assess conditions of riparian areas and to make changes in grazing management when NEPA associated with grazing permit renewal occurs in order to meet rangeland health standards. A reduction in number of animal unit months (AUMs) and/or site-specific optimizing timing of grazing at the site-specific level can lead to improved stream bank stability and vegetation growth (Elmor and Beschta 1987; Leonard et al. 1997; Wyman et al. 2006).

Mining in the Decision Area, especially in the Powder River and Burnt River subbasins, has led to localized areas of degraded riparian conditions, primarily from historic mining. Increases in OHV use has caused localized problems where use occurs near water or where OHV trails direct sediment into streams.

The Wallowa and Grande Ronde Rivers Management Plan (BLM et al. 1993) and the BLM's subsequent efforts have significantly improved the resource conditions for which the Grande Ronde River was designated as an Area of Critical Environmental Concern (ACEC) and a WSR. As recommended in the Baker RMP (BLM 1989), the BLM has acquired 7,321 acres along the Grande Ronde River, which has allowed for the expansion of riparian restoration efforts along the river.

The Lower Grande Ronde River has been the site of a restoration project since 1995. Work focused on planting willows and other shrubs along gravel bars and low terraces, and ponderosa pine on higher terraces. Sedges were also planted along gravel bars, but have subsequently been washed out. Monitoring showed good results in some areas but mixed results in others due to ungulate browsing and some flooding. Weed treatments and reseeding the treated areas has also occurred.

[1] Anadromous fish are those that return from the sea to spawn in freshwater streams where they were born, such as Pacific salmon species.

4. SOIL RESOURCES

Soils are created through the interaction of many variables, such as climate, parent material (rock type), topography, and soil biota. Through time, the interaction of these variables develops specific soil types. Formation of soils is a slow process, particularly where moisture levels are low. Disruption of soils can lead to long-term changes in soil productivity and changes in ecological conditions for the site.

a. Current Condition

Influences on Soil Types

Climate

Soils are classified into moisture and temperature regimes. There are two soil moisture regimes within the Planning Area, xeric (moist) and aridic (dry), and two soil temperature regimes, mesic (warm) and frigid (cool). Generally, areas over 13 inches of average annual precipitation will have a xeric soil moisture regime, while areas less than or equal to 13 inches average annual precipitation will have an aridic soil moisture regime. Given the lower elevation of most public land within the Planning Area and the lower precipitation found at these elevations, the majority of the soils in the Decision Area are dry. These same areas tend to have warm temperature regimes, although this varies depending on aspect, slope, and elevation.

Weathering forces such as heat, rain, ice, snow, wind, sunshine, and other environmental forces break down parent material and affect how fast or slow soil formation occurs.

Parent Material

Parent materials are an important factor in the formation of soils that may differ widely both in mineral composition and hardness, affecting soil texture and the rate of mineral breakdown. Most of the volcanic, sedimentary, and metasedimentary-derived soils in the Planning Area have fine to medium textures. Silty loams are a common soil texture found within the Planning Area. Map 3-1 (on CD) shows the geology of the Planning Area, which indicates parent material.

The majority of the soils in the Planning Area are volcanic in origin. Columbia River basalts are common, as are ash flow tuffs (i.e., pyroclastic rock formed from hot volcanic ash). Soils formed from Columbia River basalts generally have high infiltration rates and moderate permeability. Soils influenced by the deposition of silty volcanic ash from the eruption of Mount Mazama, which formed Crater Lake 6,700 years ago, are generally highly productive when they have good vegetative cover, but erosive if soil cover is removed. These ashy soils can be found in the upper Powder River area. Sedimentary rocks such as lacustrine (lakebed) deposits can also be highly erosive, as are loess soils. Knowing the location of highly erosive soils is important for management purposes as protective actions, such as control of invasive plants and restricting cattle grazing, can be directed towards these areas to protect soil function.

The Planning Area also contains granitic rocks, sedimentary rocks, and metamorphic rocks (both metasedimentary and metavolcanic). Granitic rocks tend to be highly erosive (Nowak 2004a), and water infiltration is generally high with moderate percolation. Soils derived from metamorphic rocks are not as erosive as granite soils, are very low in clay, and have high infiltration and percolation rates.

Topography

Topography is influential in the formation of many soil characteristics, such as soil depth. Deeper soils can occur in alluvial valleys. Shallow soils occur on steeper slopes and on the top of flat basalt plateaus.

Slopes that are steeper than 35 percent are generally more prone to movement. These soils are typically formed in diorite, rhyolite, schist, and argillite; tend to be sandy or loamy with little soil development; and are high in rock fragments, often with volcanic ash in the surface layer (Laird 1997).

More stable slopes of metamorphosed diorite and basalt can form even where slopes range from 35-70 percent (though generally less than 50 percent). They tend to be loamy or clayey, have a high number of rock fragments, and show moderate to strong development.

Soils with a greater degree of development are formed on basalt and volcanic tuffaceous rocks, along slopes that range from flat to 35 percent, but are generally less than 20 percent. Soils in these areas are clayey and have few rock fragments (Laird 1997).

Soils in the valley bottoms are formed primarily in alluvial and lacustrine deposits on floodplains, river terraces, and alluvial fans.

Soil Biota

Soil biota includes vegetation growing on the soil and all organisms living in or on the soil. On the soil surface, the remains of dead plants and animals are broken down by macro- and microorganisms, and eventually become organic matter incorporated into the soil. Soils in the Decision Area form under two major types of plant cover: shrub-steppe and conifer forests. The majority of the Decision Area is in shrub-steppe, which is dominant in the warmer and drier areas at lower elevations, and conifer forests, which are dominant in the cooler and moister areas at higher elevations. Biotic crusts are common between plants in the shrub-steppe.

Junipers are expanding into the shrub-steppe, leading to less ground cover and impairment of hydrologic function of soils. Crested wheatgrass is a non-native grass that has been planted as a monoculture in many areas in the Powder River Subbasin and affects hydrologic function of soils. See the Section A-6, Vegetative Communities, for more information on vegetative cover and juniper expansion.

Invasive plants are increasing in the Decision Area and can affect soils in many ways. They can cause changes in soil properties such as pH, nutrient cycling, and composition or activity of soil microbes. A reduction in soil nutrient levels makes it difficult for native plants to compete with the invasive plants, and probably affects the soil biotic community. Weed-infested soil has been shown to be more susceptible to erosion than soil occupied by native grass species (Lacey et al. 1989). In a simulated rainfall test, soil erosion more than doubled in rangeland areas dominated by spotted knapweed when compared to natural bunchgrass/forb grasslands. This is primarily due to significantly lower infiltration rates and higher levels of bare ground on the knapweed-dominated site in comparison to un-infested areas (Lacey et al. 1989). See Section B-6, Invasive Species, for more details on the expected spread of invasive plants in the Planning Area.

Soils of Concern

Highly Erosive Soils

Soils data was used to map soil sensitivity to disturbance using methods from Ypsilantis (2009). An average of 39 percent of the Decision Area is considered as being sensitive to water erosion. Soils are most vulnerable to water erosion on steep slopes and with surface soil textures that are more easily detached and moved by water (see Map 3-2 [on CD]). Fifty-six percent of soils on public lands in Brownlee Reservoir Subbasin are vulnerable to water erosion, primarily due to steeper slopes (see Table 3-12). In contrast, 15 percent of soils in the Powder River Subbasin are vulnerable to water erosion, primarily due to gentler slopes. Overall, 39 percent of the Decision Area has soils vulnerable to water erosion. The low precipitation in much of the Decision Area generally leaves soils vulnerable to management actions, even those soils on less steep slopes. Soils are most sensitive to wind erosion along the Columbia Gorge (see Map 3-3 [on CD]), with a little over 1 percent of the Decision Area being vulnerable to wind erosion.

Table 3-12. Vulnerability to Water Erosion.

Subbasins	Low (acres)	Moderate (acres)	High (acres)	Total (acres)	% high erosion
Brownlee Reservoir	11,460	22,539	43,789	77,788	56
Burnt	29,213	61,560	60,309	151,082	40
Imnaha	70	67	296	433	68
Lower Grande Ronde	843	2,215	22,110	25,168	88
Lower John Day	12	22	6	40	15
Lower Snake-Asotin	187	440	3,854	4,481	86
Middle Columbia-Lake Wallula	1541	773	697	3012	23
North Fork John Day	660	784	801	2244	36
Powder	61,666	48,337	20,011	130,014	15
Umatilla	2306	1,016	693	4,016	17
Upper Grande Ronde	898	1,352	1,335	3,586	37
Walla Walla	112	169	2,493	2,774	90
Wallowa	104	466	2,034	2,604	78
Willow (	213	528	130	871	15
Willow (Morrow Co)	14	24	14	53	27
Totals	109,300	140,294	158,573	408,167	39

Unique Soils

Unique soils include hydric (wet) soils (which make up less than 1 percent of the Decision Area) and prime farmland. Hydric soils form under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil (NRCS 2009). The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of riparian vegetation. Hydric soils occur near streams, springs, and wetlands and are important for the stability of these features. Wildlife and livestock use these riparian and wetland areas preferentially, as do humans for recreation. Where the riparian areas are thin stringers or small areas around streams, hydric soils may not be noted but are included in the upland soil categories.

Approximately half of the Decision Area (215,870 acres) consists of prime farmland, which is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. If treated and managed according to acceptable farming methods, this land has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner. In general, prime farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, an acceptable level of acidity or alkalinity, an acceptable content of salt or sodium, and few or no rocks. Its soils are permeable to water and air. Prime farmland is not excessively eroded or saturated with water for long periods of time, and it either does not flood frequently during the growing season or is protected from flooding (NRCS 2010). While no farming occurs in the Decision Area, it is important to protect this resource for potential future use.

Biological Crusts

Biological Crusts are the community of organisms living at the surface of dry soils. They consist of cyanobacteria, green algae, microfungi, mosses, liverworts, and lichens. In the Columbian Basin, tall mosses and green algae are the most common components. Shallow, dry, or saline and sodic soils with lower vascular plant cover often support a wide variety of cyanobacteria, mosses, and lichens (Belnap et al. 2001). Biological soil crusts are effective in reducing wind and water erosion of soil surfaces. This is especially important in Wyoming big sagebrush communities where there is generally a lower amount of vegetative groundcover compared to grasslands or forested areas.

In addition to reducing erosion and stabilizing soils, biological crusts add nitrogen to the soil that is readily taken up by surrounding plants (Belnap et al. 2001). Unfortunately, biological crusts are relatively fragile and heavily impacted from disturbances such as trampling and OHV use. Because such soils are composed of many types of organisms, the assemblage can change due to disturbance. In addition, pH is an important factor for nutrient availability. The higher pH soils, combined with lower moisture, found associated with the eastside shrub and grassland tend to support higher numbers of bacteria within the biological crusts compared to the fungi dominated soils of western Oregon, which have a lower pH. There are 35,202 acres in sagebrush not

meeting Rangeland Standards and Guides that have a pH between 6.5 and 7.2, and which are suitable to support biological crusts. Biological crusts are important in these areas as grasses tend to be sparse between the shrubs and well-developed biological crust communities add to soil stability in these areas.

b. Trends

Grazing levels affect soil compaction, erosion, and the health of biological crusts. Through NRCS programs, many farmers and ranchers have applied conservation practices to reduce the effects of erosion by water on private lands. As a result, erosion rates on private cropland and pastureland in the Powder River Subbasin fell 55 percent, from 0.9 ton/acre/year to 0.4 ton/acre/year from 1982 to 1997 (NRCS 2006a).

Implementation of Rangeland Standards and Guidelines (BLM 1997; see Section B-3, Livestock Grazing) has reduced soil erosion in some areas due to changes in grazing practices that lead to higher soil cover.

Past logging practices have lead to increased compaction and soil disturbance compared to natural conditions. This trend has slowed with implementation of BMPs and a lowered number of acres logged per year.

Roads and ROWs remove land from productivity and can increase erosion. There are many roads within the Decision Area, with the majority being primitive roads not built to present design standards. Table 3-11 in the Water Resource section shows the mile of roads per square mile for Decision Area in the different subbasins as well as the miles of road and percentage of primitive road. For Brownlee Reservoir, Burnt River, and Powder River subbasin, which encompass the majority of the Decision Area, there are between 1.5 and 2.5 miles of road per square mile. The number of requests for ROWs is increasing over time and would tend to lead to greater soil disturbance and higher road densities.

At the present, most OHV use is limited to the Virtual Flat OHV Play Area. Use of OHVs can lead to erosion, compaction, loss of soil cover, and damage to biological crusts. The popularity of OHVs has increased over the last 10 years and, as it continues to increase, it is expected that use would also expand to new areas. See Section C.5, Recreation, for more details on current and future OHV use.

Mining within the Decision Area often occurs along riparian areas where hydric soils occur. Hydric soils are formed under conditions developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. The intensity of the mining pressure varies depending on the price of the mineral mined and the quantity of recoverable minerals.

Invasive plants continue to spread within the Decision Area. The change from native vegetation to non-natives such as cheatgrass, medusahead, and crested wheatgrass changes the functioning of soils. In areas in the Powder River Subbasin that were planted with crested wheatgrass, but

were formerly Wyoming big sagebrush communities, a strong sagebrush component is reemerging; however, native grasses are still lacking in these areas. While crested wheatgrass is no longer planted in the Decision Area, and treatment occurs in some areas for a variety of invasive and noxious species, it is difficult to convert the vegetation back to historic native plant communities.

Juniper is a native plant that continues to spread into grassland, shrub, and forested areas due to suppression of fire. Juniper-dominated areas have higher erosion and less soil moisture and nutrients available to other plants (Bedell et al. 1993). Juniper expansion will likely persist with continued fire suppression activities.

Wildfires in the Decision Area have lead to changes in soil properties and movement of sediment. A recent example is the Foster Gulch Fire, which burned 53,000 acres in 2006, a significant portion of which was within the Decision Area. To aid in recovery after the fire, grazing was restricted from the area for 2 to 5 years. During the following year (2007), severe summer rainstorms caused extreme rilling, erosion, and mudflows onto the BLM campgrounds and the road along Hells Canyon Reservoir. While the road still has erosion problems, the riparian areas are recovering and have a thick growth of riparian vegetation.

5. VEGETATIVE COMMUNITIES

a. Current Condition

This section examines the causal factors leading to the current conditions of vegetative communities in the Decision Area. The BLM used the NRCS soil survey and current vegetation mapping to determine how vegetation communities have changed within the Decision Area. The BLM assumed that the NRCS potential vegetation, which is based on soil surveys, adequately describes the landscape dynamics of historic vegetation communities (i.e., average size, total acreage, and landscape distribution) within the Decision Area (see Table 3-13). Past and current land management has altered these dynamics. The largest changes have occurred within the Wyoming and mountain big sagebrush communities through conversion to non-native grass or expansion of juniper forests. In general, historic livestock grazing (prior to Tyler Grazing Act of 1934) and wildfire has caused more than 32,700 acres of native Wyoming big sagebrush to convert to non-native annual grass dominated stands (see Table 3-13). In addition, fire suppression in Wyoming big sagebrush stands has reduced the native grass production below what the NRCS identifies as being within the natural range in variability, which is negatively affecting rangeland health. While some researchers question the adverse effects of fire suppression on the Wyoming big sagebrush community (Vale 1975; Baker 2006), others clearly attribute wildfire suppression to increasing juniper dominance in historic mountain big sagebrush stands, which is having adverse effects on more than 44,000 acres (see Table 3-13). In addition, increasing CO_2 levels have also been attributed to accelerate the expansion of juniper (Johnson et al. 1990; Miller and Wigand 1994), which can further fragment sagebrush communities.

Table 3-13. Site-Potential and Current Plant Communities in the Decision Area

Plant Community	Potential Acres	Current Acres	% change
Wyoming big sagebrush steppe (*Artemisia tridentata* ssp. *wyomingensis*)	123,702	90,994	-26
Mountain big sagebrush steppe (*Artemisia tridta* ssp. *vaseyana*)	136,539	83,562	-39
Basin big sagebrush steppe (*Artemisia tridentata* Ssp. *tridentata*)	5,892	4,851	-18
Threetip sagebrush steppe (*Artemisia tripartita*)	2,069	2,069	0
Rigid Sagebrush Steppe (*Artemisiarigida*)	20,479	17,392	-15
Mixed Grasslands	80,537	71,270	-12
Mixed Grasslands and Juniper	4,076	48,105	+1108
Non-Native Annual Grass	N/A	13,406	N/A
Non-Native Seeded Grass	N/A	40,633	N/A
Dry forest	27,985	31,355	+11
Moist forest	7,741	5,383	-30
Riparian Areas/Wetlands	3,062	3,062	0
Rock outcrops	5,210	5,210	0
Water	566	566	0
No Site-Potential Plant Community Survey Data	10,567	10,567	0
Total	428,425	428,425	NA

Source: The BLM used GIS data layers to determine potential and current acres of the 12 vegetation communities, water and rock outcrops.

Vegetation Condition Assessments

Rangeland health assessment was the primary assessment tool used to determine if a grazing pasture was meeting resource objectives. Rangeland health assessments use five standards: (1) watershed function/uplands, (2) watershed function/riparian, (3) ecological processes, (4) water quality and (5) native, threatened and endangered, and locally important species. This section discusses only the first three. The latter two are discussed in Section B.3, Water Resources, and Section B.8, Wildlife, of this chapter. As of the writing of this Draft RMP/EIS, rangeland health assessments have not been conducted for the entire Decision Area.

Currently, rangeland health final determinations have been completed for 189,128 acres, or 44 percent, of the Decision Area. Changes were made to livestock grazing systems in the 42,623 acres where livestock grazing was identified as a causal factor for not meeting watershed function and ecological processes rangeland health standards. For analytical purposes only, the 42,623 acres where changes to livestock management were made will be considered to be making progress towards meeting rangeland health guidelines.

Final determinations for rangeland health have not been completed for 56 percent of the resource area, approximately 18 percent of which have final determinations in the process of being completed. In addition, the BLM has not conducted rangeland health assessments for approximately 38 percent, or 162,800 acres, within the Decision Area. However, a comparison between rangeland health assessments and the Ecosite Inventory (BLM 1980) was conducted by the BLM, which determined that a strong relationship exists. This indicates that the Ecosite

Inventory can be used as a surrogate for upland rangeland health standards for analytical purposes at large scales (watershed or Decision Area). The BLM found that ecological process and Ecosite Inventory were in agreement within 81 percent of the allotments where both surveys were conducted. The results and methods used in this study can be found in Appendix 3.2. It should be noted that a relationship between rangeland health assessment and the Ecosite Inventory (BLM 1980) only exist for watershed function/uplands and ecological processes. It is suspected that livestock grazing is a potential factor in 65,176 acres, or 15 percent, of the Decision Area. However, the exact acreage where current livestock grazing is a causal factor cannot be enumerated until final determinations are made. Therefore, the 65,176 acres are for purpose of analysis only.

Watershed Function/Uplands and Ecological Processes

When comparing rangeland health standards for watershed function/uplands and ecological processes, the BLM determined there was a high similarity between these two standards. This relationship was expected since watershed function/uplands and ecological processes have nine elements in common with each other (Pyke et al. 2002). Therefore, from this point on, watershed function/uplands and ecological processes are referred to as upland rangeland health standards. Improper livestock grazing, fire suppression, and presence of noxious weeds and undesirable invasive plants are the main contributing factors for a pasture to fail upland rangeland health standards. As Table 3-14 illustrates, there are currently 73,964 acres that have the potential to be improved by changing land management, such as the levels or timing of livestock grazing, prescribed fire, mechanical treatment of juniper or sagebrush, or seeding. On the other hand, there are 10,406 acres of low site potential, non-native annual grass stands where management changes are expected to have a low probability of improving upland rangeland health standards to a level where resource objectives would be met.

Table 3-14. Upland Rangeland Health Standards

Meeting or Suspected of Making Progress Towards Meeting Upland Rangeland Health Standards		**Suspected of Not Meeting Upland Rangeland Health Standards**								Not Surveyed for Rangeland Health (excludes dry and moist forest types)	
		Native Vegetation Community				Non-Native Annual Grass Community		Non-Native Perennial Grass Community			
		Sagebrush		Juniper							
Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
296,426	76	23,824	6	30,874	8	13,406	3	5,860	2	18,235	5

Some elements used to determine upland rangeland health are controversial and some researchers question their applicability in determining vegetation condition or rangeland health. Specifically, elements that use the NRCS similarity index for plant production and composition are at the center of the controversy. When the NRCS developed the similarity index, the common belief was that the fire rotation interval (i.e., the time required to burn once through a sagebrush landscape) for Wyoming big sagebrush was a maximum of 100 years (Wright and Bailey 1982). In contrast, another belief is that fire rotation interval is between 100- 240 years for Wyoming big sagebrush (Baker 2006). The ramifications of using a shorter fire rotation is

that Wyoming big sagebrush stands that have not burned within the last 100 years could be classified as not meeting upland rangeland health standards when, in fact, the area(s) may be within the historical range in variability. Because this would thus result in an overestimation of acres not meeting upland rangeland health standards, the 54,698 acres of native sagebrush and sagebrush/juniper identified as not meeting upland standards (Table 3-14) should be viewed as a maximum.

Watershed Function/ Riparian

Rangeland health assessments for watershed function/riparian have not been completed for the entire Decision Area. As Table 3-15 illustrates, the BLM has surveyed 462 miles of creeks, 148 miles of which do not meet the minimum standard for watershed function/riparian. Livestock grazing is the main cause for not meeting minimum standard, followed by roads, mining, and wildlife (elk) use, respectively. Specifically, livestock grazing is suspected as either causing or contributing to undesirable conditions within 76 miles of creek; however the total mileage will not be known until final rangeland health standards and guidelines are completed. Therefore, the 76 miles of riparian area is to be used for analytical purposes only. It is suspected that, 85 percent of the creek miles affected by livestock grazing are also affected by at least one other factor (e.g., roads, mining, or wildlife), but the exact percentage will not be known until rangeland health final determinations are made. Past and present land management focused on changing livestock grazing to improve riparian condition while placing little emphasis on restoring historic mining sites, improving roads, or mitigating the impacts from wildlife use (e.g., elk and deer). The BLM expects that future riparian management will need to address adverse impacts caused by past mining, roads, and wildlife, along with livestock grazing, to achieve riparian objectives at the landscape scale.

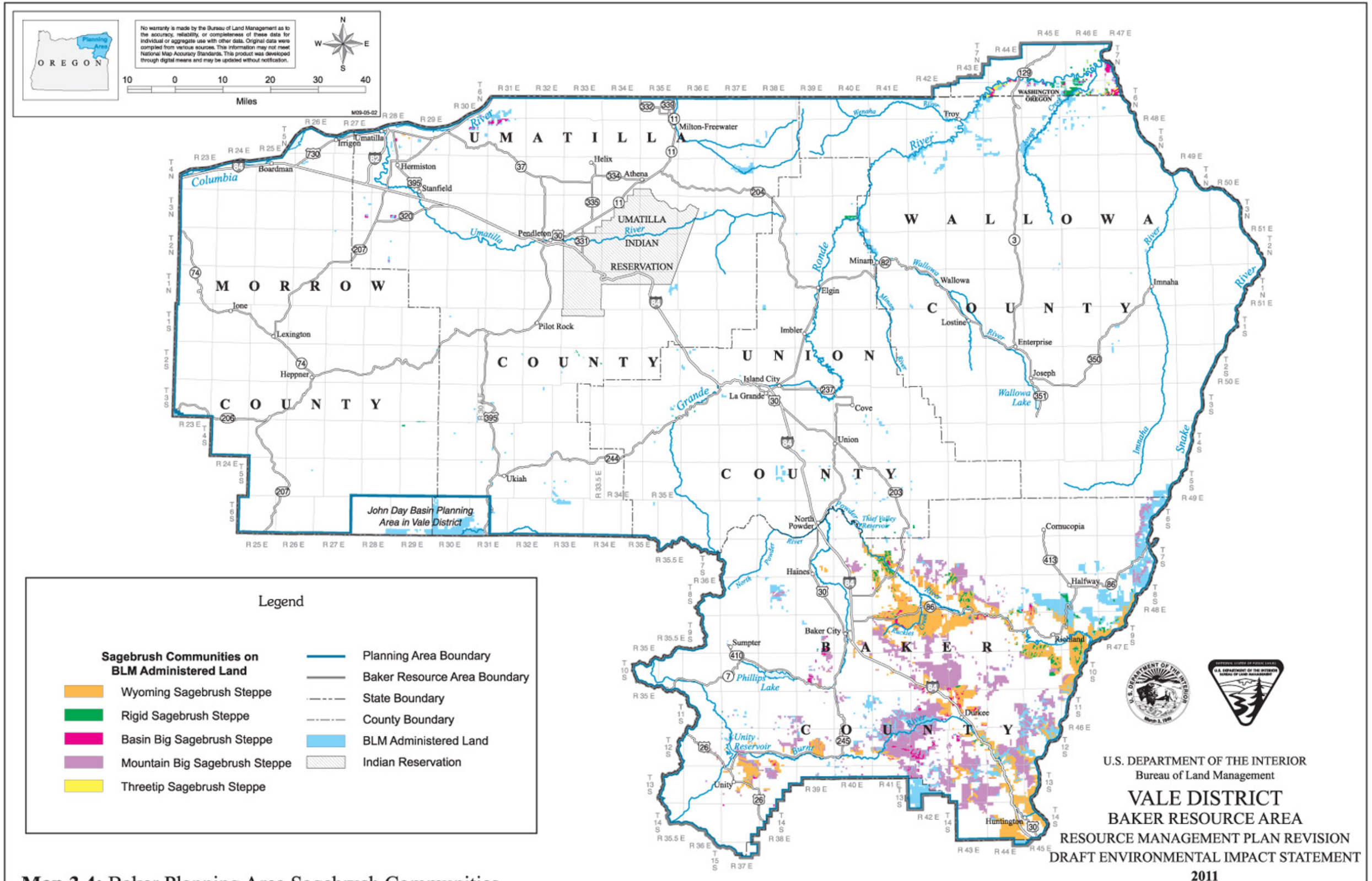
Table 3-15. PFC Assessment (2002 to 2009)

Meeting Rangeland Health Standard for Watershed function/riparian (miles)	Not Meeting Rangeland Health Standard for Watershed function/ riparian (miles)
316	148

Native Communities

Wyoming Big Sagebrush

Wyoming big sagebrush communities are found on arid and generally lower productive sites than any other big sagebrush (Bunting et al. 1987). Within the Decision Area, potential Wyoming big sagebrush communities occur at between 500 and 4,900 feet in elevation and account for 29 percent (123,702 acres) of the land base (see Map 3-4). The dominant potential natural community (PNC) consists of bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), arrowleaf, balsamroot, and Wyoming big sagebrush. Wyoming big sagebrush is highly susceptible to conversion into a non-native annual grass community (Bunting et al. 1987). In fact, BLM analysis using PNC data and current vegetation map suggests that 26



Map 3.4: Baker Planning Area Sagebrush Communities

percent (32,708 acres) of the historical Wyoming big sagebrush has been converted within the Decision Area (Table 12).

During the latter part of the 1800s, cheatgrass and medusahead, both non-native annual grasses, were spreading across the Pacific Northwest. These annual grasses out-competed the native species, primarily along roadsides, in areas burned by wildfire, and livestock grazing occurred during the critical growth stage of palatable forage species. Typically, the critical growth stage for later seral grass species in the Wyoming big sagebrush community occurs from mid-spring to midsummer. Vegetation management by the BLM has focused on suppressing wildfires, developing specialized livestock grazing systems, and using herbicidal and biological treatments in order to slow the rate of spread of these non-native annual grasses (Brewer et al. 2007; Sherly and Petroff 1999). These methods were effective in reducing the spread of non-native annual grasses within the Decision Area.

Based on the historic climax plant community descriptions developed by the NRCS, the Decision Area had 123,702 acres of potential Wyoming big sagebrush habitat (see Table 3-13). By using current vegetation mapping, the BLM determined that 32,708 acres were converted to a non-native annual grass community, of which, 25,325 acres were subsequently seeded to a desirable non-native perennial grass community that improved soil stability, wildlife habitat, and livestock forage. As a result, there remain 90,994 acres of native Wyoming big sagebrush habitat within the Decision Area (see Table 3-13). Current rangeland health assessments suggests that approximately 31 percent of the native Wyoming big sagebrush community is not meeting upland rangeland health standards due to either past fire suppression, which has resulted in high sagebrush canopy cover and low grass production, or livestock management that favors early succession grass species. In order to improve these conditions, the BLM would be required to carry out prescribed fire, mechanical shrub removal, or changes to livestock grazing systems that favor later succession species (West et al. 1984; Courtois et al. 2004). While the BLM does not currently possess adequate information to determine how many acres within the Decision Area would requires changes to livestock grazing or sagebrush reduction to improve rangeland health, such information will become available once final rangeland health determinations are completed. On the other hand, some researchers disagree with fire rotation interval used, in part, to determine upland rangeland health standards. They contend that the fire return interval should be between 100-240 years and that current conditions within a portion of the Wyoming big sagebrush not meeting upland rangeland health standards should be within the natural range in variability (Vale 1975; Baker 2006).

The presence of non-native annual grass and the susceptibility of Wyoming big sagebrush communities converting to non-native annual grass communities limit the amount of fire that can be re-introduced. In order to maintain a vigorous native plant community, fires severities need to be lower than historical levels, which can be accomplished by reducing fine fuel loads (i.e., dry grass). Research by Bates et al. (2009) has shown that livestock grazing is an effective tool for reducing fire severities. Specifically, light to moderate forage utilization by domestic livestock

reduces the accumulation of dry grass litter in the crowns of bunchgrasses, resulting in less smoldering combustion and, hence, less mortality when plots are burned.

The BLM can also use chemical and mechanical treatments to improve upland rangeland health by reducing sagebrush cover and increasing grass production. The use of chemical or mechanical treatments does not require reducing fine fuel loads prior to treatment; however, an injunction exists that limits chemical use to noxious weeds in Oregon. It is expected that the injunction will be lifted once the Vegetation Treatments Using Herbicides in Oregon EIS (2010) is approved, which should lead to authorization on the control of noxious weeds, invasive plants, and, to a limited extent, juniper and sagebrush.

Ground-disturbing projects (e.g., roads, power lines, developments, mining, OHV use, and wind and solar energy) are likely to convert native adjacent Wyoming big sagebrush communities into non-native annual grass communities (Bunting et al 1987). Within the Decision Area, non-native grasses are typically contained to within 50 feet from the edge of the disturbance, which is supported by Hafal et al. (2008). Therefore, it is likely that any ground disturbing projects or activities within Wyoming big sagebrush communities have a high probability of converting small, localized areas into non-native annual grass communities. Wyoming big sagebrush community is more susceptible to invasion of non-native grasses than other big sagebrush communities is due to precipitation, as Wyoming big sagebrush grows in dryer areas than any other big sagebrush species (Bunting et al. 1987; Ypsilantis 2003).

Historically, the native Wyoming big sagebrush community was a large component of the lower elevation areas within the Decision Area, but due to historic livestock grazing and wildlife use, it has become highly fragmented, especially in the Powder River subbasin. There are currently three large continuous stands of Wyoming big sagebrush on public lands greater than 3,000 acres in the subbasin. The largest stand, located near Virtue Flats, is approximately 9,000 acres and surrounded by non-native grass communities, mountain big sagebrush communities, and agricultural lands. Agricultural lands and mountain big sagebrush communities surround the other two large Wyoming big sagebrush stands in the same subbasin. All other stands of native Wyoming big sagebrush communities are small remnant stands of less than 500 acres. These are typically adjacent to non-native annual grass communities, which increases the risk of conversion, particularly if livestock-grazing management is not designed to reduce fine fuels in the adjoining non-native annual grass stands. Currently, the non-native grass communities are not managed in this fashion, with some non-native grass stands being grazed under a rest rotation system and others during times when non-native grasses are not palatable to livestock.

Mountain Big Sagebrush

Mountain big sagebrush communities generally occur on the highest elevation ranges of the three subspecies of big sagebrush, and on the more mesic sites, which are characterized by being moderately moist. Within the Decision Area, potential mountain big sagebrush habitat is found between 2,100 and 8,200 feet in elevation and accounts for 31 percent (136,539 acres) of the land base (see Table 3-13). The herbaceous component of the mountain big sagebrush series is

among the most productive of all the sagebrush communities and has the potential to be rich in total number of both grass and forb species (NRCS 2008). Mountain big sagebrush is also more resistant to the invasion of non-native annual grasses than Wyoming, three tip, and basin big sagebrush community types (Bunting et al. 1987; Ypsilantis 2003).

Approximately 5 percent (6,800 acres) of the potential mountain big sagebrush habitat in the Decision Area has been converted to a non-native grass community. Such non-native grass communities have a native shrub component and a varying degree of native grasses in the understory. Most of the converted stands occur in the Powder River subbasin and are in areas of high historic livestock use, which often occurred during the critical growth stage for palatable native perennial grasses. In most instances, the converted mountain big sagebrush stand is adjacent to converted Wyoming big sagebrush stands. In addition to the 5 percent converted to a non-native grass community, approximately 34 percent (44,000 acres) of the higher-elevation mountain big sagebrush communities in the Decision Area have been converted to a Phase I, II, or III juniper community (see discussion below on Juniper Woodlands). The remaining 61 percent (85,700 acres) of potential mountain big sagebrush is considered intact (see Table 13).

Basin Big Sagebrush

There is a limited amount of in the Decision Area because most of this highly productive community type was converted into farmland. Currently, there are less than 6,000 acres of potential basin big sagebrush remaining in the Decision Area. In addition, this remainder is highly fragmented and found primarily near riparian areas, swales, and field edges (Bunting et al. 1987). Livestock and wildlife prefer it to other sagebrush because of the close proximity to water and vegetation that stays green longer than in the adjoining Wyoming or mountain big sagebrush communities. As a result, forage utilization is often greater within basin big sagebrush areas than the surrounding vegetative communities, which can reduce its ecological condition due to increased grazing pressure. If forage utilization within this community exceeds the recommendations of Brewer et al. (2007), there is a high likelihood that the site will convert to a non-native annual grass community or become dominated by early seral grass species. Approximately 1,000 acres of basin big sagebrush habitat have converted to non-native annual grass in the Decision Area (see Table 3-13).

Threetip Sagebrush

Threetip sagebrush accounts for less than 1 percent (2,000 acres) of the land base within the Decision Area, where it typically occurs with big sagebrush subspecies (Passey and Hugie 1962; Thatcher 1959), particularly Wyoming big sagebrush and mountain big sagebrush. Unlike big sagebrush types, threetip sagebrush has the ability to sprout after fire (Passey and Hugie 1962). If the fire return interval were shorter than the historic range of variability, such fires would eliminate the non-sprouting big sagebrush from the site, resulting in a pure stand of threetip sagebrush (Passey and Hugie 1962). Since all of the threetip sagebrush sites on the Decision Area consist of a mixture of threetip sagebrush and big sagebrush, the fire return interval has

been long enough to maintain a diversity of sagebrush. In addition, the threetip stands are considered native due to having less than 5 percent non-native annual grass cover.

Rigid Sagebrush

Rigid sagebrush accounts for 4 percent (20,479 acres) of the land base within the Decision Area, where it occupies stony or extremely shallow soils over bedrock and is associated with Sandberg bluegrass (*Poa secunda*) (Cox and Hunt 1990). Within the Decision Area, 15 percent (3,087 acres) of the rigid sagebrush communities have converted to a non-native annual grass community, mostly in areas that had high historic livestock use during the critical growth stage of native grasses. Due to the extremely shallow soils and low site potential, restoring these sites would be unfeasible with current technology.

Mixed Grasslands

Mixed grassland accounts for 19 percent (80,537 acres) of land base within the Decision Area. Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass dominate the mixed grasslands. The potential native vegetation of these communities consists generally of 80 to 90 percent composition by weight of grass and 10 to 20 percent forbs and shrubs. The dominant shrubs in the mixed grassland include bitterbrush and snowberry. Both Idaho fescue and bluebunch wheatgrass decrease when light to extreme forage utilization (21-100 percent) occurs year after year during the boot to soft dough growth stage, which leads to low to moderate similarity to PNC (Brewer et al. 2007). On the other hand, Sandberg bluegrass may increase with this type of livestock management (Anderson and Frank 2003; Stoddart and Smith 1955). However, most of the bluebunch wheatgrass and Idaho fescue grasslands in the Decision Area occur on relatively steep slopes that receive little to no livestock use. Therefore, livestock grazing is not typically a contributor to changes in ecological condition or trend on a landscape-level scale.

Fire suppression within the native perennial grasslands has resulted in increased amount of shrub and/or juniper composition, which is above the listed PNC levels (West 1984; Miller et al 2000). Most sites have a moderate to high similarity (50-75) to PNC. Additionally, observations by the Baker FO range staff indicate that there is no or only a trace of non-native annuals within these vegetation communities. Therefore, the use of low severity prescribed fire would have a high probability of reducing the shrub and juniper component and increasing the native grass component, while maintaining the native grass species (i.e., there is a low conversion potential to non-native grasses).

Riparian Areas/Wetlands

There are 3,196 acres classified as riparian areas/wetlands within the Decision Area. Vegetation within these areas includes wet and mesic meadows dominated by herbaceous vegetation and reaches dominated by willows or aspen. The BLM has already evaluated the majority of riparian areas and wetlands in the Decision Area for PFC and will eventually evaluate all of them. Field biologists monitored approximately 463 miles of riparian areas from 2002 to 2006, of which the

BLM suspects that 148 miles do not meet rangeland heath standard for watershed, function/riparian. However, the exact number of miles will not be known until rangeland health final determinations are completed. Based on PFC monitoring conducted by the BLM, the largest impact to watershed function/riparian was historic and present livestock grazing, followed by roads and mining. This monitoring suggests that a maximum of 76 miles of riparian areas could improve by modifying current livestock management. The remaining miles would require improvements to roads, decommissioning roads, and/or restoration of mining sites.

Juniper Woodlands

Historically, juniper (*Juniperus occidentalis*) woodlands were located in rocky areas that were refugia from fire. Reduced fire frequencies, changing climate, and past grazing practices promoted the expansion of juniper out of these refugia. Without fire or mechanical treatment projects, juniper will continue to expand into dry forests, hardwood and mountain shrub stands, riparian communities, Wyoming and mountain big sagebrush communities, and native grasslands (Miller et al. 2000).

Current forest inventory estimates of juniper woodland coverage in the Decision Area are at approximately 48,105 acres, which is believed to be as much as a 600 percent increase over the acreage that historically occurred (Miller et al. 2008). These estimates include 9,078 acres of Phase I, 32,346 acres of Phase II and 6,680 acres of Phase III juniper stands, which range from sparse to dense canopy coverage. These totals are indicative of their respective Fire Regime Condition Class (FRCC) of FRCC 1, 2, and 3 (refer to Table 3-37).

In Phase I juniper communities, trees are present, but shrubs and herbs are the dominant vegetation that influence ecological processes on the site. In Phase II communities, trees are co-dominant with shrubs and herbs and all three vegetation layers influence ecological processes on the site. Finally, in Phase III communities, trees are the dominant vegetation and the primary plant layer influencing ecological processes on the site (Johnson and Miller 2006). Regardless of the developmental phase, encroaching juniper is undesirable because it alters and/or displaces the historic vegetation community that is adapted to the site. Many juniper stands are reaching a state where juniper dominance is beginning to alter understory conditions. As the juniper canopy closes in, grass and shrub cover declines, with negative consequences to wildlife habitat and forage production (Miller and Tausch 2001). If untreated, understory vegetation cover and production would decline, increasing bare ground and leading to increases in soil erosion to damaging levels. In addition, water use by juniper may reduce summer stream flows and otherwise impair hydrological function (Aldrich et al 2005; Pierson et al. 2007). The BLM suspects that no Phase III juniper stands would meet upland rangeland heath, and that Phase II stands either would not meet or would be moving towards not meeting rangeland health standards. The improvement of rangeland health in these stands would require juniper removal.

Hardwoods and Mountain Shrubs

This category consists of deciduous trees or hardwoods such as quaking aspen (*Populus tremuloides*) and black cottonwood (*Populus trichocarpa*), and mountain shrubs such as Rocky Mountain maple (*Acer glabrum*), cherry (*Prunus spp.*), ceanothus (*Ceanothus spp.*), curlleaf mountain-mahogany (*Cercocarpus ledifolius*), ribes (*Ribes spp.*), and numerous other species.

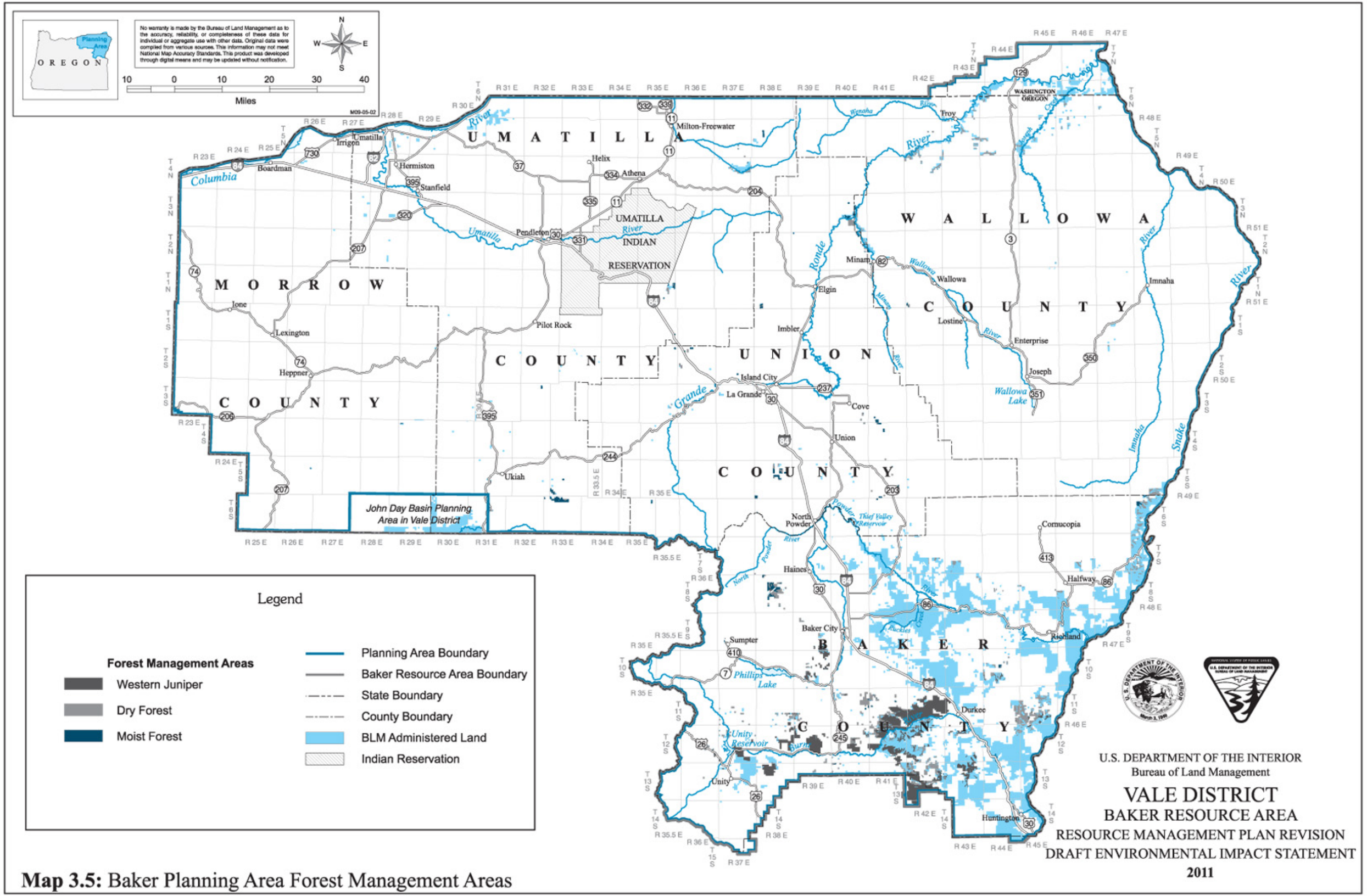
There is consensus among land managers that the current extent of quaking aspen coverage is considerably less than historic levels. While the actual amount of decline is unknown, the magnitude can be inferred from field observations of dead aspen groves with no survivors (Swanson et al. 2010), or by comparing historic aerial photos with more recent photos. This current condition prevails in both forested and rangeland settings. The primary reasons for the decline in quaking aspen are believed to be from reduced fire frequency, encroachment by juniper and other conifers, and herbivory by domestic livestock, elk, and deer (Swanson et al. 2010). While the extent of black cottonwood is likely less than historic levels, the decline of this species is not as dramatic as that of quaking aspen.

Mountain shrubs exist as a forest understory component and as shrub stands that can range from mixed to pure composition. When existing as a shrub stand, they are generally in an early seral stage on developing forest sites, although there are locations where they are the community best adapted to a harsh site unlikely to support trees (e.g., mountain mahogany on high elevation sites). Regardless of stand composition, mountain shrubs are in decline throughout the Decision Area. Similar to the current condition of quaking aspen, land managers believe reduced fire frequency, conifer encroachment, and herbivory has caused the decline (Swanson et al. 2010).

The Lookout Mountain area is unique to the Decision Area because it exists as an island of forest vegetation amongst a sea of desert vegetation. This area hosts the largest concentration of quaking aspen and mountain shrub communities, intermixed with the largest pure stands of Douglas-fir, in the Decision Area. These Douglas-fir stands continue to expand their range and are encroaching and out-competing the hardwoods and mountain shrubs.

Dry Forest

The majority of the forested land (not including juniper or hardwoods) in the Decision Area (approximately 31,355 acres, or 85 percent) is classified within the dry forest vegetation group (i.e., receives 12 to 17 inches of precipitation annually). See Map 3-5 for the location of these forests. Throughout much of their range, dry forests were historically open-grown "park-like" stands, with an overstory of large, widely spaced ponderosa pine (*Pinus ponderosa*) in the lower to mid elevations with increasing amounts of Douglas-fir (*Pseudotsuga menziesii*) and western larch (*Larix occidentalis*) cohorts on higher elevations and more mesic sites. In some instances, Douglas-fir occurs as the dominant species, including occurring in pure stands, with a similar structure as ponderosa pine or mixed conifer stands. Typically, the understory would consist of primarily grass and forb species with little underbrush, sporadic conifer regeneration, and occasional clumps of smaller trees.



Map 3.5: Baker Planning Area Forest Management Areas

The primary agents of disturbance in the dry forest types are insects, disease, and fire (Gast et al. 1991). In healthy stands, insects, diseases, and/or parasites (primarily bark beetles, root rots, rusts, and dwarf mistletoe) typically create small canopy openings and promote a multi-layered stand structure with some agents targeting overstory trees and others thinning understory trees. The canopy openings or gaps created are typically less than five acres in size.

The dry forest types are generally within Fire Regime I (refer to Table 3-36), which has a mean fire interval range of 0 to 35 years. These fires typically occur as low intensity, low severity understory fires, which keep the understory relatively free of ladder fuels and large accumulations of ground fuels. Overstory mortality in this type of fire is uncommon and usually occurs as isolated individuals or clumps (Schmidt et al. 2002).

The current condition for most of the dry forest in the Decision Area is a distinct departure from the description given above. Current BLM forest inventories and field observations by BLM staff indicate that very few stands are open-grown and most have overstocked general canopy layers of ponderosa pine, Douglas-fir, western larch, and grand fir. The understory below the general canopy is also overstocked, often with a great deal of grand fir and a reduction of grasses, forbs, and underbrush. The existing overstocked condition leaves these stands susceptible to severe fires (Schmidt et al. 2002). The decreased tree vigor in these stands due to overstocking leaves them vulnerable to epidemic attacks of insects and diseases (Schmitt and Scott 1993).

Moist Forest (Mixed Conifer, Grand Fir, and Lodgepole Pine/Sub-alpine Fir)

Compared to dry forests, the moist forest group is not as prevalent in the Decision Area and occupies approximately 5,383 acres or 15 percent of the forested land. These forests typically occur at higher elevations, or in moist micro-sites such as stream bottoms or select northern aspects. Most stands have a mixed species composition, but there are occasionally pure to nearly pure stands, primarily of lodgepole pine (*Pinus contorta*). While these stands will often have a component of drier-site species such as ponderosa pine and Douglas-fir, they are characterized by an abundance of grand fir (*Abies grandis*) and perhaps Engelmann spruce (*Picea engelmannii*), lodgepole pine, and, at the higher elevations, sub-alpine fir (*Abies lasiocarpa*) and whitebark pine (*Pinus albicaulis*). With the exception of the high elevation forests, which have a shorter growing season than forests at lower elevations, these stands receive more moisture, which gives them a greater carrying capacity than dry forests and, as a result, enabling them sustain a greater density of trees per acre and remain in a healthy condition. In addition, species in these stands are generally more shade-tolerant, allowing them to grow in partial or filtered sunlight conditions, which also contribute to increased stand densities (Burns and Honkala 1990). In fully stocked, moist forest stands, understory vegetation, including conifer regeneration, is typically less dense compared to the drier forest stands because of the reduced amount of light coming through the dense canopy (Burns and Honkala 1990). In stands with reduced stocking or those having canopy gaps, the increased sunlight coupled with the favorable, moist growing conditions allows for abundant understory species and conifer regeneration

(Burns and Honkala 1990). Understory grass, forb, and shrub species are depauperate or absent in very dense, closed canopy stand conditions.

Similar to the dry forest group, the primary agents of disturbance in the moist forest types are insects, disease, parasites, and fire. However, unlike drier forests, these stands are more likely to have one or more diseases or insects at work at any given time. This is due to several factors, including a greater competition for water and light when dense stand conditions prevail, a greater species-specific susceptibility to infection or infestation, and a greater likelihood of mechanical injury (breakage of bark, central bole, and limbs) resulting from inter-tree contact. The greater susceptibility to insect and disease and greater likelihood of injury are both due, at least in part, to shade tolerant trees having thinner bark (Burns and Honkala 1990).

The majority of moist forest stands within the Decision Area are within Fire Regime III, which has an average fire interval range of 35 to 200 years. Fires within this interval are of mixed severity and generally cause mortality in both the understory and the overstory, but typically do not result in a stand-replacing event (Schmidt et al. 2002). In a typical fire, less than 75 percent of the stand would experience high severity fire (Schmidt et al. 2002). Larger, fire hardy individuals and clumps of trees may have survived more than one fire interval and will form a multilayered "old-growth" structural component. Wetter sites generally burn less frequently than drier sites and it is common for these stands to be the oldest in the forest.

Pure stands of lodgepole pine, which are a rare occurrence within the Decision Area, fall into the Fire Regime IV classification, which is characterized by a 35-200 year fire return interval, but unlike Fire Regime III, these fires are typically stand replacing. Interestingly, lodgepole pine is a unique "disturbance obligate" species, which means it generally cannot reproduce without a severe stand replacement event (Sibold et al. 2007). This is due to its serotinous cones that cannot open and disseminate seed without very high temperatures (i.e., fire). In general, lodgepole pine is a pioneer species and, thus, is seral (the first species to occupy a site following a disturbance) to other tree species; however, in the course of its normal disturbance cycle, it can maintain itself as a pure stand. During this cycle, which involves a short life of 80 to 120 years, mountain pine beetle generally ravage the stand, killing 70 to 90 percent of the trees, which is followed by the standing dead trees burning in a stand-replacing fire (Amman and Schmitz 1988). This causes the serotinous cones to release their seed, which propagates the new lodgepole stand.

Old-Growth Forest

There is consensus amongst land managers, scholars, and the public that in both the dry and moist forest types, there is an underrepresentation of old-growth forest stands. While there is no comprehensive inventory available of old-growth forest, field observations by BLM staff suggest that the largest concentration likely occurs on Lookout Mountain, and that these stands are at risk due to an epidemic level of dwarf mistletoe (Gast et al. 1991). In addition, Sheep Mountain Wilderness Study Area (WSA) and other similarly inaccessible areas are other places where somewhat smaller concentrations of old growth exist. Otherwise, field observations by BLM

staff suggests that old growth occurs sporadically in forested blocks as small, fragmented stands. Many of these stands contain some late seral components, but lack some of the structural components required for classification as old growth (see USFS 1993). This current condition is the result of past logging practices, a lack of interim forest health treatments, and reduced fire frequency.

Non-Native Communities

Non-native Annual Grass

Historically, cheatgrass was the primary non-native annual grass that invaded low seral Wyoming big sagebrush stands. Since 1903, medusahead has been displacing cheatgrass in the annual grass communities throughout eastern Oregon, including the Decision Area (Young and Evans 1970). The greatest amount of medusahead is currently located in the Powder River Subbasin.

The Wyoming big sagebrush communities in the Powder River subbasin have experienced the greatest conversion to annual grassland within the Decision Area, with half of the Wyoming big sagebrush communities having been converted. From the 1950s to 1990s, 67 percent of the converted annual grass communities within the Powder River subbasin were seeded with non-native perennial grasses (e.g., crested wheatgrass, intermediate wheatgrass, or Russian wild rye). Most of the seedings have a Wyoming big sagebrush overstory that ranges from 5 percent to more than 25 percent canopy cover.

Less than 10 percent of the Wyoming big sagebrush communities within the Burnt River and Brownlee Reservoir subbasins have converted to a non-native annual grass community or were seeded to become a non-native perennial grass community. These Wyoming big sagebrush communities are naturally fragmented due to the elevation, topography, and soils. Most of these stands are currently meeting rangeland health standards associated with the uplands.

Before the Ironside Ecosite Inventory was completed in 1977, specialized livestock grazing systems were implemented to promote a mid- to late-seral species. These changes included eliminating growing season-long grazing, setting upland utilization targets, and implementing deferred or rest grazing systems throughout the Decision Area. The success of changing the grazing systems can be tracked through vegetation trend monitoring. Vegetation trend monitoring shows that non-native annual grass expansion is not occurring on a landscape-level scale.

Non-native Perennial Grass

Species composition within the non-native seeded communities typically consists of Wyoming big sagebrush and non-native perennial grass; Wyoming big sagebrush, non-native perennial grass, and non-native annual grass; Wyoming big sagebrush, non-native perennial grass, non-native annual grass, and native plants (associated within bluebunch wheatgrass and Idaho fescue plant communities); or a monoculture of the seeded grass. Most of the non-native seedings were

drill seeded, which are more productive than seedings that were broadcast seeded; however, broadcast-seeded pastures have higher species diversity than drill-seeded pastures (Haferkamp et al. 1987).

Livestock grazing systems have an effect on the longevity of seedings. Pastures that are repeatedly grazed during the boot to soft dough stage with light to severe (21-100 percent) grazing intensity will increase shrub cover and reduce the production of the seeded grass faster than a pasture where grazing is deferred during the boot to soft dough stage (Angell 1997). Most of the seeded allotments (34,773 acres) within the Decision Area receive periodic deferment from grazing during the boot to soft dough growth stage. The pastures that do not experience such a deferment typically have a higher composition of non-native annuals and Wyoming big sagebrush and are not meeting upland rangeland health standards.

b. Trends

Native Communities

Sagebrush and Grasslands

The BLM's primary quantitative method of determining vegetative trend is through range trend plots, which are read periodically as part of the rangeland-monitoring program. Currently, measurements of plant frequency and ground cover are used to determine trend, supplemented by photographs and professional judgment. Trend determinations are scheduled on a 5-year cycle for Improve (I) category allotments and 10 years for Maintain (M) category allotments (see Section B.3, Livestock Grazing, for definitions of I, M, and Custodial (C) category allotments.

Table 3-16 presents the apparent rangeland trends that were tabulated in the Proposed Baker RMP (BLM 1986).

Table 3-16. Rangeland trends as of March 1986 (in acres)

Upward	Static	Downward
142,720	184,482	41,985

Table 3-17 indicates the current trend status as of March 2008. This information was created by updating Table 3-16 using primarily current trend data (quantitative) and, to a lesser degree, rangeland health assessments. Rangeland health assessments were used in substitution of trend in C- category allotments. There are 214 C-category allotments in the Decision Area consisting of 62,055 acres, which accounts for approximately 17 percent of the trend determinations identified in Table 3-16.

Table 3-17. Rangeland trends as of March 2008 (in acres)

Upward	Static	Downward
153,645	178,933	34,717

Based on Table 3-16 and Table 3-17, at a lands cape level, the trend measured in 1986 is relatively similar to that measured in 2008. There is, however, a slight increase in upward trend and a slight reduction in downward trend. Approximately 9,500 acres of upward trend can be attributed to changes in livestock management within the Wyoming big sagebrush communities that were converted to non-native annual grassland in the Snake River Subbasin, specifically, within Dry Gulch and Immigrate Gulch allotments. Management changes include specialized grazing systems that defer livestock use during the critical season for bluebunch wheatgrass and Idaho fescue.

Wyoming and Basin Big Sagebrush

Current livestock grazing management has a low probability of converting intact native Wyoming and basin big sagebrush communities into non-native annual grass communities (Davies et al. 2009). This is primarily due to the use of specialized grazing systems implemented since the 1970s that defer the critical season of use (boot to soft dough growth stage). In addition, forage utilization levels are sufficient to reduce fire severities to a level that native grasses can tolerate. Current research indicates that grazing systems that use any given pasture for one or two out of every three years during the critical season are likely to remain in a moderate to high similarity to PNC and are likely to have a stable or positive ecological trend (Brewer et al. 2007).

Wildfire can also convert intact native Wyoming or basin big sagebrush communities to non-native annual community (Bunting et al. 1987 and Davies et al. 2009). The conversion would be dependent on proximity and strength of the non-native annual grass seed sources and grazing management (Davies et al. 2009). While the BLM is currently observing localized expansion of non-native grasses following wildfires in the Snake River and Burnt River subbasins, the BLM believes that this expansion is less than 1,000 acres over the last 20 years.

Mountain Big Sagebrush

Seventy-four percent (101,200 acres) of mountain big sagebrush communities within the Decision Area are located in areas that receive no to slight (0 to 20 percent) forage utilization due to steep slopes (40 percent or more). In addition, such communities are generally greater than one mile to suitable livestock watering sites. As distance to water increases, livestock utilization decreases (Holechek 1988; Alder et al. 2001; Valentine 1947), with livestock primarily grazing areas less than one mile from water. Most livestock use occurs within the first quarter of a mile (Valentine 1947). As a result, BLM trend and rangeland health monitoring sites are not located in areas greater than 1 mile from water or on slopes greater than 40 percent. While the BLM has not conducted any formal trend or rangeland health monitoring in areas having slopes of more than 40 percent or located more than 1 mile from water, BLM range staff believes that these sites are in a stable state and have a moderate to high similarity to PNC.

Mountain big sagebrush communities that have or continue to be grazed have a higher amount of shrub composition than PNC, which was caused by past livestock management and fire

suppression activities that reduced fire frequency within the vegetative community (West 1984). Currently, rangeland health assessment leads the BLM to suspect that the cumulative effect of livestock management and fire suppression within the mountain big sagebrush community has adversely affected rangeland health condition of approximately 30,000 acres. It is expected that the ecological trend within these areas will be either static or downward, depending on the amount of increase in sagebrush cover. Obtaining upward ecological trend within these areas would require management that reduces the sagebrush composition (e.g., prescribed fire, herbicide treatment, or brush beating) and/or modify livestock grazing to be consistent with the recommendations of Brewer et al (2007).

Threetip Sagebrush

Under current land use management, threetip sagebrush sites should maintain a mixture of threetip sagebrush and big sagebrush species; however, most of the threetip acreage within the Decision Area has a non-native annual grass seed source. Drastic reductions in the fire return interval from the current level could convert these sites to pure stands of threetip with an understory of non-native annuals (Ypsilantis 2003). Such conversion is not likely under current management directed towards suppressing wildfires, including within the threetip sagebrush community.

Current livestock grazing management should not convert intact native threetip sagebrush communities into non-native annual grasslands/shrublands. This is primarily due to the use of specialized grazing systems implemented since the 1970s that defer the critical season of use (boot to soft dough growth stage) and forage utilization levels that are sufficient in reducing fire severities to a level where native grasses can survive (Bates et al 2009). Grazing systems that use any given pasture for one or two out of every three years during the critical season are likely to remain in a moderate to high similarity to PNC and are likely to have a stable or positive ecological trend (Brewer et al. 2007). Therefore, the trend within the threetip sagebrush community should be stable under current fire and livestock management.

Rigid Sagebrush

The trend for the rigid sagebrush community is stable. Specifically, stands of rigid sagebrush that have been converted to non-native annual grass are not expected to be restored back to a native community due to rigid sagebrush growing in soils that are not conducive to reseeding. Conversely, stands of native rigid sagebrush should remain in a native state as these stands are in areas where livestock-grazing utilization is between 0-5 percent and there are not enough fine fuels (dry grass) to carry fire, which would lead to high native grass vigor.

Riparian Areas/Wetlands

The major causal factors that the BLM suspects in not meeting the rangeland health for watershed function/riparian standard are, in order of intensity of effect, livestock grazing, roads, mining, and wildlife use. Past land management focused on adjusting livestock management

and, to a much lesser degree, road improvements and mining reclamation. Livestock adjustments included restricting hot season grazing and fencing riparian areas. Excluding livestock grazing through fencing has been effective in improving watershed function/riparian by insuring stubble height do not exceed the recommendations of Clary and Leininger (2000). In fact, every riparian area that has been fenced is currently meeting riparian rangeland health standards. In comparison, restricting the season (summer) of use was not, in many instances, sufficient to improve an area sufficiently to meet the watershed function/riparian standard, with 76 miles of creek currently not meeting standards where livestock grazing is suspected as being a contributing factor. Current riparian stubble height is being set as part of the final rangeland health determinations. This process has been slow with only 25 of the 96 I and M allotments identified in the Baker RMP (1989) having riparian stubble height targets set. Since setting stubble height or utilization targets has been shown to improve watershed function/riparian (Clary and Leininger 2000), significant progress towards meeting riparian rangeland health should occur in allotments where riparian stubble heights or utilization has been set. In addition, the BLM is planning to set riparian stubble height or utilization targets for every I and M allotment within the Decision Area, but has only been setting riparian standards at a rate of one Geographic Unit (GU) every two years. Currently, there are four GUs (Powder River, Keating, Baker Miscellaneous, and Pedro Mountain) where stubble height targets have not been set. The BLM expects riparian standards would be set for all allotments in the Decision Area over the next 5-10 years.

Although historic mining reclamation and road improvements designed to improve watershed function/riparian has not been a priority within the Decision Area, the BLM anticipates that the priority level will increase in the future. In the limited area where mining reclamation and road improvement has occurred, watershed function/riparian standard is showing signs of improvement. As a result, the trend for these limited (2-5 miles) areas involves movement towards a desirable condition.

Juniper Woodlands

Without fire or mechanical treatments, juniper would continue to expand into dry forests, hardwood and mountain shrub stands, riparian communities, Wyoming and mountain big sagebrush communities, and native grasslands (Miller et al. 2000). Stands dominated by juniper will continue to alter understory conditions. As juniper continues to encroach on neighboring communities and canopies become more closed, native grass and shrub cover will continue to decline, with negative consequences to wildlife habitat and forage production (Miller and Tausch 2001). As grass and shrub cover declines, the amount of bare ground will increase and further impair hydrological function (Pierson et al. 2007).

Juniper encroachment into forest and mountain shrub stands will continue to compete with the site-appropriate species for limiting factors such as water and light, which will predispose these species to mortality from stress-related agents such as insects and diseases, limit regeneration, and eventually displace these communities (Miller et al. 2008). Continued encroachment of

juniper into riparian communities will similarly displace appropriate species, contributing to bank erosion and impairment of hydrological function (Miller et al. 2008).

Hardwoods and Mountain Shrubs

Without some combination of fire, mechanical treatment, and control of herbivory, the trend for hardwoods and mountain shrubs will be one of continued decline (Swanson et al. 2010). Without the disturbance agents of fire and/or mechanical treatment, these communities would continue to be encroached by juniper and other conifers. Not controlling herbivory would continue to preclude regeneration as root suckers or new plants are continuously browsed before having the chance to reach maturity (Swanson et al. 2010). Many aspen clones that existed on the landscape have already expired and many more are on the verge of expiring (Swanson et al. 2010). While it is unlikely that these communities would ever become extirpated (i.e., locally extinct) from the landscape, in the absence of some sort of disturbance to promote establishment and without relief from browse, their range will continue to be drastically reduced. This scenario is less likely for mountain shrub communities. Even when it appears that these plants have disappeared from the forest understory, there is usually seed banked (i.e., stored) in the soil that remains viable for decades and will sprout when the canopy is opened.

Dry Forest

Schmitt and Scott (1993) recognized that a variety of insects and diseases, compounded by protracted drought, overstocking, and inappropriate past management have severely damaged many-mixed conifer stands in the Blue Mountains. They also saw that large areas in the ponderosa pine forests are drastically overstocked and in imminent danger of a bark beetle population buildup and resultant epidemic. Insect populations throughout the Planning Area are spreading each year, with nearly two decades of passive forest management leaving insect disturbances unchecked (Western Forestry Leadership Coalition 2007). As a result, many forest stands are losing trees, including the larger trees left for seed sources during past management treatments (Spiegel 2008). While western pine beetles are known for selecting these larger trees (Gast et al. 1991), mountain pine beetles also seem to be selecting some of these larger trees during outbreaks (Spiegel 2008). Furthermore, the natural resistance of trees and stands to attack by mountain pine beetles decreases as age and competition increase (Gast et al. 1991). As a result, "[w]hen bark beetle mortality reduces stand density in unthinned stands, some of the best trees are lost, and the mortality often occurs in clumps, resulting in uneven distribution of growing space among remaining trees" (Cochran and Barrett 1999) .

While there is not currently a bark beetle epidemic within the Decision Area, field observations by BLM and USFS personnel suggest an increase in mountain pine beetle, western pine beetle, and fir engraver beetle activity. While most pine beetle activity is within stands and clumps of trees in the 12-inch and smaller class, which is the preferred size class of tree for mountain pine beetle attacks (Larsson et al. 1983), there are increasing random occurrences of larger pine mortality from both western pine beetle and mountain pine beetle (Spiegel 2008). Grand fir mortality in all size classes caused by fir engraver beetle is prevalent enough that it has become

obvious to the casual observer. Similar neighboring areas of the Blue Mountains have recently suffered widespread mortality by beetles in their large, older pines (Spiegel 2008). It is believed that all such mortality is a result of overstocking and drought.

Throughout the Decision Area, there are varying levels of disease infestation. The primary agents appear to be dwarf mistletoe (primarily in Douglas-fir, ponderosa pine, and western larch), comandra blister rust (primarily in ponderosa pine), and various wood-rotting fungi. These agents occur in varying degrees of infection from endemic to epidemic, in which all trees within a stand are infected. Amongst these agents, the primary concern is with Douglas-fir infected with dwarf mistletoe, which has one of the highest rates of infection (estimated to be as high as 42 percent for the east-side region) of any tree species within the Decision Area (Gast et al. 1991). Infection levels are rated from low to severe, in which a low rating stunts the growth of the infected host, while severe indicates that mortality is imminent (Gast et al. 1991). While western larch has a slightly higher regional infection rate (estimated as high as 47 percent) than Douglas-fir (Gast et al. 1991), and infected hosts respond similarly, the effects of this infestation are less than in Douglas-fir simply because there is much less larch than there is Douglas-fir on the landscape. The infestation rate in ponderosa pine is much lower (estimated at 26 percent), and the effects are less severe because infections occurring in ponderosa pine are less likely to result in mortality (Gast et al. 1991).

If left unchecked, the trend for dry forests should be one of continually declining forest health conditions due to persistent overstocking. This would result in trees existing in a constant stressed condition, which predisposes them to infestation by insects and/or diseases. When infestations reach epidemic levels, the result is dead and dying trees on a scale that can range from a forest stand to an entire watershed, leading to the increased risk of landscape level, stand-replacing wildfire.

Moist Forest (Mixed Conifer, Grand Fir, and Lodgepole Pine/Sub-alpine Fir)

As mentioned above for dry forest, Schmitt and Scott (1993) recognized that a variety of insects and diseases, compounded by protracted drought, overstocking, and inappropriate past management, have severely damaged many mixed conifer stands in the Blue Mountains. A reduction in trees per acre and accumulated fuels through naturally occurring events or prescribed activities would improve the vigor of remaining trees and reduce the likelihood of epidemic insect and/or disease infestation and stand-replacing wildfire (Fettig et al. 2006). Absent of any such disturbance, the trend for moist forests is likely very similar to that described for dry forests.

Old-growth Forest

The trend for old-growth forest under current management approaches should be one of increasing range. Such approaches are being used by both the BLM and USFS and focus on retaining existing old-growth canopy components, while removing competing understory vegetation, and thinning younger, second-growth stands in order to improve forest health and

expedite the growth of large trees, which is a primary component of old-growth forests. The implementation of silvicultural treatments typically involves retaining large trees and removing smaller, younger trees to improve the vigor of their remaining cohorts.

The trend for old growth under the "hands off" or "let nature take its course" approach to managing existing old growth is harder to predict. While some stands may fare well under this approach, it is likely that some stands will succumb to insects, disease, and fire due to their dense, overstocked condition. Thus, while management actions are being employed in younger stands to create future old growth, it is likely that some of the existing old-growth stands may suffer heavy losses in the near future. Ultimately, this would result in a future net gain of old-growth forest 100 plus years in the future, but it would likely result in a loss of some of the existing stands over the life of this RMP.

Non-native Communities

Non-native Annual Grass Communities

Without intensive restoration, non-native annual grass stands will not improve to a point where upland rangeland health standards will be met. In addition, applying current technologies and knowledge could potentially restore only 22 percent of the non-native annual grass stands. Nonetheless, changing the season of livestock use to spring or, possibly, fall can result in slight improvements to vegetation trend (Mosley 1996; Mosen and Kitchen 1994). Specifically, within the Snake River Subbasin, changing grazing systems from mid-season grazing to early spring grazing (before the native plant boot growth stage) within a converted non-native annual pasture has caused an upward trend, but not to the degree that changed the upland rangeland health rating. This trend will likely continue. Although high to moderate grazing intensity in the early spring or fall can improve ecological trend in a site dominated by non-native annuals (e.g., cheatgrass: Klemmedson and Smith 1938), most non-native annual grass stands within the Decision Area are grazed on a rest-rotation system or during seasons when non-native annual grasses are not palatable to livestock. Therefore, the future trend within non-native annual grass communities should remain the same or decline.

Non-native Perennial Grass communities

Non-native perennial grass communities follow a relatively predictable trend over time, which results in higher shrub cover and reduced crested wheatgrass cover (Frischnecht 1963). In addition, yearly heavy to extreme livestock grazing during the boot growth stage can reduce crested wheatgrass vigor and allow non-native annual species to invade or cause sagebrush cover to increase at a faster rate than realized under specialized grazing systems that reduce the intensity of grazing during the boot growth stage (Richards and Caldwell 1984; Angell 1997). Currently, most of the crested wheatgrass pastures have a higher cover of sagebrush and lower crested wheatgrass production than when first established. This trend should continue in the future unless a disturbance reduces the sagebrush cover.

6. INVASIVE SPECIES

a. Current Conditions

Invasive Plants and Noxious Weeds

Due to the diversity of vegetation types and conditions within the Decision Area, the BLM faces a wide array of invasive plant species and noxious weeds. While noxious weeds and undesirable invasive plants are able to invade any habitat that exists within the Decision Area, making them especially hard to locate and monitor, they mainly occur along natural and constructed waterways, roads, pipelines, ROWs, livestock/wildlife paths and congregation areas, previously burned areas, and in recreation sites. Noxious weeds and other invasive plants are excellent pioneering species, are often the first species to establish after ground disturbing activities or fires, and are able to invade previously undisturbed habitats (Larson et al. 1997). Ground disturbing activities can provide a favorable bed for weeds to grow in and expand without competition from other plants as soils are exposed. The movement of people, animals, and equipment can spread existing weeds. Furthermore, the movement of people and animals can introduce new weeds from outside the Decision Area or from an infested part of the Decision Area into an uninfested part. Once established, noxious weeds are often more effective than many native plants at obtaining the required nutrients, water, and sunlight necessary for growth and survival.

Past management actions that have contributed to the introduction, establishment, and spread of invasive plants and noxious weeds across the Decision Area include prescribed fire, road and facilities construction and maintenance, livestock grazing, mining, noxious weed treatments, development, restoration projects, and recreation pursuits. Natural events and processes, such as wildfire, flooding, landslides, and wind and water movement, have also created disturbances and contributed to the introduction and spread of weeds. Some of these actions and events have altered the historic range of native species composition, structure, and distribution across the landscape, which has allowed weeds to invade and establish themselves. Under current management, the BLM estimates that noxious weeds on public lands in Oregon are spreading at an annual rate of 12 percent (BLM 2010a).

The invasion of noxious weeds and undesirable invasive plants pose a significant threat to multiple-use management on public lands. The presence of these plants contributes to the loss of rangeland productivity, increased soil erosion, reduced specie and structural diversity, and loss of wildlife habitat. In some instances, weed infestations are hazardous to human health and welfare, as has been emphasized in the “Federal Noxious Weed Act” (PL 93-629). In Oregon, as well as in other western states, noxious weeds are so thoroughly established and are spreading so rapidly that they have been declared a menace to public welfare (Oregon Revised Statutes 570.505). The Carlson-Foley Act (Public Law 90-583) makes the federal government responsible for control of weeds on federal lands and provides direction for their control. The Baker FO practices integrated weed management using mechanical, biological, cultural, and chemical treatment methods subject to site-specific determination of appropriate techniques and

timing. The Baker FO implements the weed program under the protocols set forth in the following documents:

- Vegetation Treatments Using Herbicides on BLM Lands in Oregon EIS (BLM 2010)
- Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS (BLM 2007c)
- Northwest Area Noxious Weed Control Program EIS (BLM 1985) and Supplement (BLM 1987)
- Baker Resource Area RMP Record of Decision (ROD) (BLM 1989)
- Vale District Weed Control Plan EA OR-030-89-19 (BLM 1989, and as extended 1994, 1999, 2006, 2009)
- Integrated Vegetation Management Manual (BLM 2008c)
- Chemical Pest Control Handbook 9011 (BLM 2006a)
- Use of Biological Control Agents of Pests on Public Lands, Handbook 9014 (BLM 2006b)
- Integrated Weed Management, Handbook 9015 (BLM 2006c)

A district-wide environmental assessment (EA) for vegetation treatments using herbicides will be prepared to tier to the Oregon EIS. Until the District EA is final or site specific analysis is conducted for individual projects, herbicide use on public lands will remain under the restrictions of the 1987 court injunction and the guidance set forth in the Northwest Area Noxious Weed Control Program EIS (BLM 1985) and Supplement (BLM 1987). The court injunction limited herbicide use to four chemicals (Glyphosate, Dicamba, Picloram, 2, 4-D) and restricts the use of these chemicals to treating only legally-designated noxious weeds.

Weeds invade environments where they did not evolve and/or are not wanted. An invasive weed attains a "noxious" status by legislation only, where a federal, state, or county government designates it as undesirable and injurious to public health, agriculture, recreation, wildlife, or property (Sheley and Petroff 1999). This designation usually places the burden on land managers to control, contain, or inhibit reproduction of a listed species occurring on any given parcel of land. Oregon Department of Agriculture (ODA) divides their list of noxious weeds into three distinct categories:

"A" Designated Weed: A weed of known economic importance which occurs in the state in small enough infestations to make eradication or containment possible; or is not known to occur, but its presence in neighboring states make future occurrence in Oregon seem imminent. Infestations, when and where found, are subject to eradication or intensive control.

"B" Designated Weed: A weed of economic importance that is regionally abundant, but which may have limited distribution in some counties. Infestations are subject to intensive control at the state, county, or regional level as determined on a site-specific, case-by-case basis. Where

implementation of a fully integrated statewide management plan is not feasible, biological control (when available) shall be the primary control method.

"T" Designated Weed: A priority noxious weed designated by the Oregon State Weed Board as a target for which the ODA will develop and implement a statewide management plan. "T" designated noxious weeds are species that have been selected from either the "A" or "B" list.

Numerous invasive plant species occur within the Planning Area and many additional invasive plant species are likely to occur, but have not yet been detected. Table 3-18 presents noxious weed species that the ODA has legally designated (ODA 2010) and shows which plants are designated as noxious by the individual counties in the Planning Area. All plants listed in the table under the various counties require landowners to control them under local county weed ordinances. Individual counties can designate noxious weeds as locally important even if they do not appear on the state list. While the Planning Area includes a wide diversity of potential habitats for noxious weeds, it is unlikely that all plants in the table occur in the Decision Area. For example, one would not expect to find cordgrass, as it is confined to marine environments, but one would be on the lookout for garlic mustard, which has the potential to invade some habitats in the Decision Area.

Table 3-18. Invasive Plants Designated Noxious According to the ODA and Counties in the Planning Area.

Common Name	Scientific Name	ODA	County						
			Asotin	Baker	Malheur	Morrow	Umatilla	Union	Wallowa
Absinth wormwood	*Artemisia absinthium*	---	✓	--	---	---	---	---	✓
African rue	*Peganum harmala*	A, T	---	---	---	---	---	---	---
Armenian (Himalayan) blackberry	*Rubus armeniacus (R. procerus, R. discolor)*	B	✓	---	---	---	---	---	✓
Austrian fieldcress	*Rorippa austriaca*	---	✓	---	---	---	--	---	---
Babysbreath	*Gypsophila paniculata*	---	✓	---	---	---	---	---	---
Bachelor button	*Centauria cyanus*	---	---	---	---	---	---	---	✓
Biddy-biddy	*Acaena novae-zelandiae*	B	---	---	---	---	---	---	---
Blackgrass	*Alopecurus myosuroides*	---	✓	---	---	---	---	---	---
Black henbane	*Hyoscyamus niger*	---	✓	✓	---	---	---	---	---
Brazilian elodea	*Egeria densa*	---	✓	---	---	---	---	---	---
Broom									
French	*Genista monspessulana*	B	---	---	---	---	---	---	---
Portuguese	*Cytisus striatus*	B, T	---	---	---	---	---	---	---
Scotch	*Cytisis scoparius*	B	✓	---	---	---	---	✓	✓
Spanish	*Spartium junceum*	B	✓	---	---	---	---	---	---
Bugloss									
Annual	*Anchusa arvensis*	---	✓	---	---	---	---	---	✓
Common	*Anchusa officinalis*	B, T	✓	---	---	---	---	✓	✓
Viper's	*Echium vulgare*	---	✓	---	---	---	✓	---	---
Buffalobur	*Solanum rostratum*	B	✓	✓	✓	---	---	---	---
Buttercup									

Table 3-18. Invasive Plants Designated Noxious According to the ODA and Counties in the Planning Area.

Common Name	Scientific Name	ODA	County						
			Asotin	Baker	Malheur	Morrow	Umatilla	Union	Wallowa
Bur	*Ranunculus testiculatus*	---	---	✓	---	---	---	---	✓
Tall	*Ranunculus acris*	---	---	---	---	---	---	---	✓
Butterfly bush	*Buddleja davidii (B. variabilis)*	B	✓	---	---	---	---	---	---
Camelthorn	*Alhagi pseudalhagi*	A	✓	---	✓	---	✓	---	---
Cereal rye	*Secale cereale*	---	✓	---	---	✓	✓	---	---
Cheatgrass	*Bromus tectorum*	---	---	---	✓	---	---	---	---
Chicory	*Cichorium intybus*	---	---	✓	---	---	---	---	✓
Clary sage	*Salvia sclarea*	---	✓	---	---	---	---	---	---
Coltsfoot	*Tussilago farfara*	A	---	---	---	---	---	---	---
Common burdock	*Arctium minus*	---	---	---	---	---	---	---	✓
Common crupina*	*Crupina vulgaris*	B	✓	---	✓	✓	---	---	✓
Common fennel	*Foeniculum vulgare*	---	✓	---	---	---	---	---	---
Common groundsel	*Senecio vulgaris*	---	✓	---	---	---	---	---	---
Common reed	*Phragmites australis*	A	✓	---	---	---	---	---	---
Common tansy	*Tanacetum vulgare*	---	✓	✓	---	---	---	---	---
Cordgrass									
Common	*Spartina anglica*	A, T	✓	---	---	---	---	---	---
Dense-flowered	*Spartina densiflora*	A, T	✓	---	---	---	---	---	---
Saltmeadow	*Spartina patens*	A, T	✓	---	---	---	---	---	---
Smooth	*Spartina alterniflora*	A, T	✓	---	---	---	---	---	---
Creeping yellow cress	*Rorippa sylvestris*	B	---	---	---	---	✓	---	---
Curly-leaf pondweed	*Potamogeton crispus*	---	✓	---	---	---	---	---	---
Cutleaf teasel	*Dipsacus laciniatus*	B	---	---	---	---	---	---	---
Dodder	*Cuscuta spp.*	B	---	---	✓	✓	---	---	---
Fiveangled dodder	*Cuscuta pentagona (C. campestris)*	---	---	✓	---	---	✓	---	---
Japanese*	*Cuscuta japonica*	A	---	---	---	---	---	---	---
Smoothseed alfalpha dodder	*Cuscuta approximata*	---	✓	---	---	---	---	---	---
Dyers Woad	*Isatis tinctoria*	B	✓	---	✓	---	---	---	✓
English ivy	*Hedera helix (H. hibernica)*	B	---	---	---	---	---	---	---
Evergreen blackberry	*Rubus laciniatus*	---	✓	---	---	---	---	---	---
Eurasion watermilfoil	*Myriophyllum spicatum*	B	✓	---	---	---	---	---	---
European water chestnut	*Trapa natans*	A	---	---	---	---	---	---	---
False brome	*Brachypodium sylvaticum*	B, T	✓	---	---	---	---	---	---
Fanwort	*Cabomba caroliniana*	---	✓	---	---	---	---	---	---
Field bindweed	*Convolvulus arvensis*	B	✓	✓	✓	✓	---	---	✓
Floating primrose-willow	*Ludwigia peploides*	---	✓	---	---	---	---	---	---
Flowering rush	*Butomus umbellatus*	A	✓	---	---	---	---	---	---
Fragrant water lily	*Nymphaea odorata*	---	✓	---	---	---	---	---	---
Fuller's teasel	*Dipsacus fullonum*	---	---	✓	---	---	---	---	✓
Garlic mustard	*Alliaria petiolata*	B, T	✓	---	---	---	---	---	---
Geranium									

Table 3-18. Invasive Plants Designated Noxious According to the ODA and Counties in the Planning Area.

Common Name	Scientific Name	ODA	County						
			Asotin	Baker	Malheur	Morrow	Umatilla	Union	Wallowa
Herb Robert	*Geranium robertianum*	B	✓	---	---	---	---	---	---
Shiny leaf	*Geranium lucidum*	B	✓	---	---	---	---	---	---
Giant hogweed*	*Heracleum mantegazzianum*	A, T	✓	---	---	---	---	---	---
Goatgrass									
Barbed	*Aegilops triuncialis*	A, T	---	---	---	---	---	---	---
Jointed	*Aegilops cylindrica*	B	✓	✓	✓	✓	✓	✓	✓
Ovate	*Aegilops ovata*	A	---	---	---	---	---	---	---
Goatsrue*	*Galega officininalis*	A	✓	---	---	---	---	---	---
Gorse	*Ulex europaeus*	B, T	✓	---	---	---	---	---	---
Grass-leaved arrowhead	*Sagittaria graminea*	---	✓	---	---	---	---	---	---
Hairy cat's ear	*Hypochaeris radicata*	---	✓	---	---	---	---	---	✓
Hairy willow-herb	*Epilobium hirsutum*	---	✓	---	---	---	---	---	---
Halogeton	*Halogeton glomeratus*	B	---	---	✓	---	---	---	---
Hawkweed									
Common	*Hieracium lachenalii*	---	✓	---	---	---	---	---	---
European	*Hieracium sabaudum*	---	✓	---	---	---	---	---	---
King-devil	*Hieracium piloselloides*	A	---	---	---	---	---	✓	---
Meadow	*Hieracium pratense*	A, T	---	---	---	---	---	✓	✓
Mouse-ear	*Hieracium pilosella*	A	✓	---	---	---	---	✓	---
Orange	*Hieracium aurantiacum*	A, T	✓	---	---	---	---	✓	✓
Polar	*Hieracium atratum*	---	✓	---	---	---	---	---	---
Queen-devil	*Hieracium glomeratum*	---	✓	---	---	---	---	---	---
Smooth	*Hieracium laevigatum*	---	✓	---	---	---	---	---	---
Yellow	*Hieracium floribundum (H. caespitosum)*	A, T	✓	---	---	---	---	✓	---
Hawkweed oxtongue	*Picris hieracioides*	---	✓	---	---	---	---	---	---
Hoary alyssum	*Berteroa incana*	---	✓	---	---	---	---	---	✓
Horsetail									
Field	*Equisetum arvense*	---	---	---	✓	---	---	---	---
Giant	*Equisetum telmateia*	B	---	---	---	---	---	---	---
Horseweed	*Conyza canadensis*	---	---	---	---	---	---	✓	---
Houndstongue	*Cynoglossum officinale*	B	✓	---	✓	✓	---	---	✓
Hydrilla*	*Hydrilla verticillata*	A	✓	---	✓	---	---	---	---
Indigobush	*Amorpha fruticosa*	---	✓	---	---	---	---	---	---
Jimsonweed	*Datura stramonium*	---	---	---	✓	---	---	---	---
Johnsongrass	*Sorghum halepense*	B	✓	---	✓	✓	✓	---	---
Jubata grass	*Cortaderia jubata*	B	---	---	---	---	---	---	---
Knapweed									
Bighead	*Centaurea macrocephala*	---	✓	---	✓	---	---	---	---
Black	*Centaurea nigra*	---	✓	---	---	---	---	---	---
Brown	*Centaurea jacea*	---	✓	---	---	---	---	---	---
Diffuse	*Centaurea diffusa*	B	✓	---	✓	---	---	---	---
Featherheaded	*Centaurea trichocephala*	---	---	✓	✓	✓	✓	✓	✓
Meadow	*Centaurea pratensis*	B	✓	---	✓	---	---	---	---
			✓	---	✓	---	✓	✓	✓

Table 3-18. Invasive Plants Designated Noxious According to the ODA and Counties in the Planning Area.

Common Name	Scientific Name	ODA	County						
			Asotin	Baker	Malheur	Morrow	Umatilla	Union	Wallowa
Russian	*Acroptilon repens*	B	---	✓	✓	✓	✓	✓	✓
Squarrose	*Centaurea virgata*	A, T	✓	---	✓	---	---	---	---
Spotted	*Centaurea stoebe (C. maculosa)*	B, T	✓	✓	✓	✓	✓	✓	✓
Tyrol	*Centaurea nigrescens*	---		---		---	---	---	---
Knotweed	*Polygonum bohemicum*								
Bohemian	*Fallopia sachalinensis*	---	✓	---	---	---	---	✓	✓
Giant	*(Polygonun)*	B, T	✓	---	---	---	---	✓	✓
Himalayan	*Polygonum polystachyum*	B	✓	---	---	---	---	✓	---
Japanese	*Fallopia japonica (Polygonum cuspidatum)*	B, T	✓	✓	---	---	---	✓	✓
Kochia	*Kochia scoparia*	B	✓	✓	✓	✓	✓	✓	✓
Kudza	*Pueraria lobata*	A, T	✓	---	---	---	---	---	---
Lawnweed	*Soliva sessilis*	---	✓	---	---	---	---	---	---
Lepyrodicilis	*Lepyrodiclis holosteoides*	---	✓	---	---	---	---	---	---
Lesser celandine	*Ranunculus ficaria*	B	---	---	---	---	---	---	---
Longspine sandbur	*Cenchrus longispinus*	---	✓	---	---	---	---	---	✓
Loosestrife									
Garden	*Lysimachia vulgaris*	---	✓	---	---	---	---	---	---
Purple	*Lythrum salicaria*	B	✓	✓	✓	✓	✓	✓	✓
Wand	*Lythrum virgatum*	---	✓	---	---	---	---	---	---
Marijuana	*Cannabis sativa*	---	---	---	---	---	✓	---	---
Matgrass	*Nardus stricta*	A, T	---	---	---	---	---	---	---
Meadow clary	*Salvia pratensis*	---	✓	---	---	---	---	---	---
Mediterranean sage	*Salvia aethiopis*	B	✓	---	✓	✓	---	---	✓
Medusahead rye	*Taeniatherum caput-medusae*	B	---	✓	✓	✓	---	---	✓
Mullein									
Common	*Verbascum thapsis*	---	---	✓	---	---	---	---	✓
Moth	*Verbascum blatteria*	---	---	✓	---	---	---	---	---
Nutsedge									
Purple	*Cyperus rotundus*	A	---	---	✓	---	---	---	---
Yellow	*Cyperus esculentus*	B	✓	---	✓	---	---	---	---
Old man's beard	*Clematis vitalba*	B	✓	---	---	---	---	---	---
Oregano	*Origanum vulgare*	---	---	---	---	---	---	---	✓
Oxeye Daisy	*Chrysanthemum leucanthemum*	---	✓	---	---	---	---	---	✓
Paterson's curse	*Echium plantagineum*	A, T	---	---	---	---	---	---	---
Parrot's feather	*Myriophyllum aquaticum*	B	✓	---	---	---	---	---	---
Perennial peavine	*Lathyrus latifolius*	B	---	---	---	---	---	---	---
Perennial pepperweed	*Lepidium latifolium*	B	✓	✓	✓	---	✓	✓	✓
Perennial sowthistle	*Sonchus arevensis ssp. Arvensis*	---	✓	---	---	✓	---	---	---
Poison hemlock	*Conium maculatum*	B	✓	✓	✓	✓	---	✓	✓
Policeman's helmet	*Impatiens glandulifera*	B	✓	---	---	---	---	---	---

Table 3-18. Invasive Plants Designated Noxious According to the ODA and Counties in the Planning Area.

Common Name	Scientific Name	ODA	County						
			Asotin	Baker	Malheur	Morrow	Umatilla	Union	Wallowa
Puncturevine	*Tribulus terrestris*	B	✓	✓	✓	✓	✓	✓	✓
Quackgrass	*Agropyron repens*	B	---	---	✓	---	✓	✓	---
Ragweed	*Ambrosia artemisiifolia*	B	---	---	✓	---	✓	---	---
Reed canarygrass	*Phalaris arundinacea*	---	✓	---	---	----	---	---	✓
Reed sweetgrass	*Glyceria maxima*	---	✓	---	---	---	---	---	---
Ricefield bulrush	*Schoenoplectus mucronatus*	---	✓	---	---	---	---	---	---
Rose campion	*Lychnis coronaria*	---	---	---	---	---	---	---	✓
Rush skeletonweed	*Chondrilla juncea*	B, T	✓	✓	✓	✓	✓	✓	✓
Saltcedar (Tamarisk)	*Tamarix ramosissima*	B, T	✓	✓	✓	---	---	---	---
Scentless mayweed	*Matricaria perforate*	---	✓	---	---	---	---	---	---
Silverleaf nightshade	*Solanum elaeagnifolium*	A	✓	---	✓	---	---	---	---
Skeletonleaf bursage	*Ambrosia tomentosa*	A	---	---	✓	---	---	---	---
Small broomrape*	*Orabanche minor*	B	---	---	---	---	---	---	---
South American waterweed	*Egeria densa (Elodea)*	B	---	---	---	---	---	---	---
Spanish heath	*Erica lusitanica*	A	---	---	---	---	---	---	---
Spikeweed	*Hemizonia pungens*	B	✓	---	---	✓	---	---	---
Spiny cocklebur	*Xanthium spinosum*	B	✓	---	✓	---	---	---	---
Spurge flax	*Thymelaea passerina*	---	✓	---	---	---	---	---	---
Spurge laurel	*Daphne laureola*	B	✓	---	---	---	---	---	---
Spurge									
Leafy	*Euphorbia esula*	B, T	✓	✓	✓	✓	✓	✓	✓
Myrtle	*Euphorbia myrsinites*	B	✓	✓	---	---	---	---	✓
Oblong	*Euphorbia oblongata*	A	✓	---	---	---	---	---	---
Starthistle									
Iberian	*Centaurea iberica*	A, T	---	---	✓	---	---	---	---
Purple	*Centaurea calcitrapa*	A, T	✓	---	✓	---	✓	---	---
Yellow	*Centaurea solstitialis*	B, T	✓	✓	✓	✓	✓	✓	✓
Stickywilly (bedstraw)	*Galium aparine*	---	---	---	---	---	---	✓	---
St. Johnswort	*Hypericum perforatum*	B	✓	✓	✓	✓	✓	---	✓
Sulfur cinquefoil	*Potentilla recta*	B	✓	✓	✓	---	---	✓	✓
Summer pheasant's eye	*Adonis aestivalis*	---	---	---	---	---	---	---	✓
Swainsonpea	*Sphaerophysa salsula*	B	✓	---	✓	---	✓	---	---
Sweetbriar rose	*Rosa eglanteria*	---	---	---	---	---	---	---	✓
Syrian bean-caper	*Zygophyllum fabago*	A	✓	---	---	---	--	---	---
Tansy Ragwort	*Senecio jacobaea*	B, T	✓	✓	✓	✓	✓	✓	✓
Texas blueweed	*Helianthus ciliaris*	A	✓	----	---	---	---	---	---
Thistle									
Bull	*Cirsium vulgare*	B	✓	---	✓	---	---	---	---
Canada	*Cirsium arvense*	B	✓	✓	✓	✓	✓	✓	✓
Italian	*Carduus pycnocephalus*	B	✓	---	✓	---	---	---	✓
Milk	*Silybum marianum*	B	✓	---	✓	---	---	---	---
Musk	*Carduus nutans*	B	✓	---	✓	✓	✓	---	✓
Plumeless	*Carduus acanthoides*	A, T	✓	---	---	---	---	---	---

Table 3-18. Invasive Plants Designated Noxious According to the ODA and Counties in the Planning Area.

Common Name	Scientific Name	ODA	County						
			Asotin	Baker	Malheur	Morrow	Umatilla	Union	Wallowa
Prickly Russian	*Salsola iberica*	---	---	✓	---	---	---	✓	---
Scotch	*Onopordum acanthium*	B	✓	✓	✓	✓	✓	✓	✓
Slender-flowered	*Carduus tenuiflorus*	B	✓	---	✓	---	---	---	---
	Carthamus baeticus	A	---	---	✓	---	---	---	---
Smooth distaff	*Onopordum tauricum*	A, T	---	---	---	---	---	---	---
Taurian Wooly Distaff	*Carthamus lanatus*	A, T	---	---	✓	---	---	---	---
Toadflax									
Dalmation	*Linaria dalmatica*	B, T	✓	✓	✓	✓	✓	✓	✓
Yellow	*Linaria vulgaris*	B	✓	✓	✓	✓	---	---	✓
Variable-leaf milfoil	*Myriophyllum heterophyllum*	---	✓	---	---	---	---	---	---
Venice mallow	*Hibiscus trionum*	---	---	✓	---	---	---	---	---
Velvetleaf	*Abutilon theophrasti*	B	✓	---	---	---	---	---	---
Ventenata	*Ventenata dubia*	---	---	---	---	---	---	---	✓
Water primrose	*Ludwiga hexapetala*	---	✓	---	---	---	---	---	---
Western water hemlock	*Cicuta douglasii*	---	---	✓	---	✓	---	---	✓
White bryony	*Bryonia alba*	A	✓	---	---	---	---	---	✓
White campion	*Silene alba*	---	---	---	---	---	---	---	✓
White cockle	*Silene latifolia spp.alba*	---	✓	---	---	---	---	---	---
Whitetop									
Hairy	*Lepidium pubescens*	B	✓	---	---	---	---	---	---
Lens-podded	*Lepidium chalepensis*	B	---	---	---	---	---	---	---
Whitetop (hoary cress)	*Lepidium draba*	B	✓	✓	✓	✓	✓	✓	✓
Wild carrot	*Daucus carota*	---	✓	---	---	---	---	---	---
Wild chervil	*Anthriscus sylvestris*	---	✓	---	---	---	---	---	---
Wild four o'clock	*Mirabilis nyctaginea*	---	✓	---	---	---	---	---	---
Wild oat	*Avena fatua*	---	---	---	---	✓	---	---	---
Wild proso millet	*Panicum miliaceum*	---	---	---	✓	---	---	---	---
Yellow archangel	*Lamiastrum galeobdolon*	---	✓	---	---	---	---	---	---
Yellow flag iris	*Iris pseudacorus*	B	✓	✓	---	---	---	---	✓
Yellow floating heart	*Nymphoides peltata*	A	✓	---	---	---	---	---	---
Yellow sweetclover	*Melilotus officinalis*	---	---	---	✓	---	---	---	---
Yellowtuft sp.	*Alyssum murale*	A, T	---	---	---	---	---	---	---
	Alyssum corsicum	A, T	---	---	---	---	---	---	---

*Plants listed as federally noxious are subject to state quarantine even if they are not listed as noxious by the state.

Noxious weed management is a high priority for the Decision Area. Close coordination and cooperation occurs with other federal, state, and county agencies, as well as adjoining private landowners, and is an important part of the integrated management approach taken by the BLM. The parcels of public lands administered by the BLM are small and widely scattered. Furthermore, the BLM does not administer all of the lands in any one watershed. As a result, there are many adjacent landowners from a wide variety of jurisdictions, which makes effective

weed management on a landscape scale challenging. The USFS, ODA, county weed districts, and numerous private landowners all have weed control programs in place and work together with the BLM to manage weeds strategically under an early detection and rapid response (EDRR) framework.

Invasive Terrestrial and Aquatic Species (Excluding Plants)

In additional to plant forms, invasive species can also include insects, aquatic invertebrates, aquatic weeds, terrestrial vertebrates, and various pathogens, which have become serious public concerns since the writing of the current Baker RMP (BLM 1989). The Baker FO made no planning decisions in that document that address invasive species other than noxious weeds.

In 2000, Cornell University scientists estimated that invasive species cost Americans approximately $137 billion each year. Crop and habitat loss due to noxious weeds and invasive plants in Oregon alone approached $100 million a year. Statewide, the ODA spent $4.2 million in the 2005-2007 biennium just on insect and pest prevention and management. During this same period, ODA spent $4.3 million on noxious weeds and $1.2 million on sudden oak death in southwest Oregon. Since 2001, the ODF has also spent over $2.5 million to monitor and eradicate sudden oak death. The Oregon Marine Board spends $50,000 to $100,000 each year on public education and staff time on aquatic invasive species issues. According to ODA, if zebra and quagga mussels become established in Oregon, it would cost the state an estimated $25 million to $50 million a year.

Grasshoppers, although native invertebrates, have periodic population explosions that can cause serious damage to rangelands and nearby agricultural crops in those years that population levels reach a certain threshold. When they occur, these infestations are generally isolated to only small portions of the Planning Area at any given time.

Threats from non-native insects, such as the European ash borer, ambrosia bark beetle, and Asian longhorn beetle, are currently causing the greatest concern in Planning Area. Gypsy moths are also causing some concern as two were recently trapped in the Baker City area. These species are coming from the east in through such means as firewood carried by recreation vehicles and in pallets used in shipping. Both ODA and ODF are continually monitoring for these and other species, which are primarily woodborers that could have devastating impacts on various local tree species if they were to become established.

Vertebrate species such as starlings, nutria, bullfrogs, and feral pigs are generally not considered a threat or as serious a problem within the Planning Area, although they are currently causing some concern in other portions of the state.

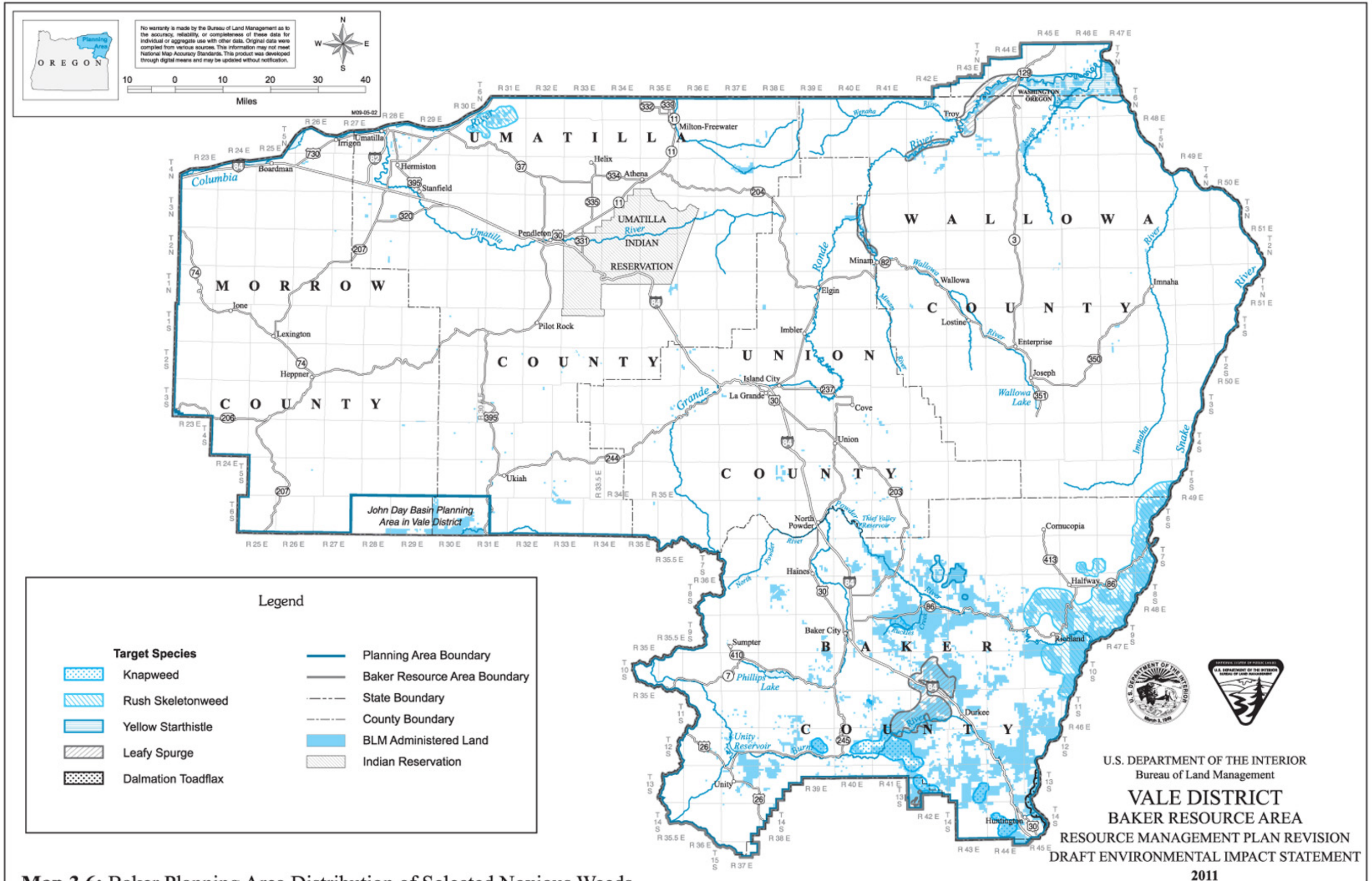
In order to address invasive species, the BLM needs to do the following:

- Establish a new program to prevent, detect, and control the establishment of new invasive species.
- Cooperate and coordinate with interested/affected groups and organizations, including federal/state agencies, counties, adjoining landowners, and other interested parties.
- Develop an integrated pest management approach that will involve all resource programs, using strategies and techniques designed to prevent resource degradation.
- Utilize appropriate multiple control methods to maximize results, reduce costs, and minimize the spread of invasive species on public lands and waters.
- Emphasize education and prevention as a primary control technique to reduce invasive species introductions.
- Coordinate inventories and surveys with other agencies regarding new potential invaders to the Decision Area.
- Utilize EDRR to reduce costs and invasive species spread.
- Use approved biological control agents if they exist for a particular species that has established on public land.
- Follow management guidance in BLM Manual 517 (BLM and USFS 2007).

b. Trends

Invasive Plants and Noxious Weeds

Noxious weeds have increased in prevalence in some areas and decreased in other locations across the Decision Area. For example, diffuse knapweed infestations along the Grande Ronde River have dramatically decreased in frequency since the mid-1980s. Meanwhile, rush skeletonweed in the Snake River Breaks has increased in prevalence during the same period (See Map 3-6.). Yellow starthistle in the Keating Valley was a serious problem during the 1980s, but is currently at a manageable level. While effective biocontrol and herbicidal treatments have reduced some of the weeds to an economically feasible threshold, other weeds have been on the upswing in recent years and the need for treatments is increasing. While techniques such as EDRR and integrated weed management have been effective in helping to eliminate new infestations and reduce existing ones, especially when combined with the improving condition of the rangelands, both the overall acreage infested by noxious weeds and the diversity of noxious weeds have increased since completion of the 1989 RMP. In addition, invasive plants are expected to increase due to increases in CO_2 levels, increases in mean minimum temperatures, and changes in the timing and patterns of precipitation. Expected increases in recreational and commercial activities, as well as ongoing natural events such as climate change and wildfires, will increase the potential for weed introduction and establishment across the Planning Area.



Map 3.6: Baker Planning Area Distribution of Selected Noxious Weeds

Invasive Terrestrial and Aquatic Species (Excluding Plants)

State and federal agencies are discovering or intercepting new invasive species in Oregon on a regular basis. Globalization of air travel, the speed of commercial shipments, and the frequency people travel around the country should sustain this trend. The potential for the inadvertent transportation of an unwanted species into the Decision Area will continue to be a management concern and priority.

7. FISHERIES (INCLUDING SPECIAL STATUS FISH SPECIES)

a. Current Conditions

Due to their similar habitat requirements and spatial distribution, special status fish species are discussed alongside with general fisheries.

The ODFW and Washington Department of Fish and Wildlife (WDFW) possess management responsibility for fish population within the Planning and Decision Areas. For fish species listed under the federal ESA, the U.S. Fish and Wildlife Service (USFWS) oversees resident fish species and the National Oceanic Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) oversees anadromous fish species. The BLM, as manager of fish habitat, interacts in a collaborative manner with the agencies with fish population responsibilities.

Fish and other aquatic species are dependent on the condition of riparian habitat and water quality for growth, reproduction, and survival. Within the Decision Area, both rangeland and forested ecosystems contribute to riparian and aquatic habitat on public lands.

Stream habitat conditions affect the ability to sustain fish populations. In the case of migratory fish such as salmon, the quality of habitats upstream or downstream from public lands may affect production on public lands. Loss of quality stream habitat and declining water quality has led to reduced or eliminated fish populations in the Planning Area compared to their historic levels. Human factors such as dam construction, livestock grazing, irrigation, road use and construction, forest practices, ranching, farming, mining, and recreational activities are the primary causes of fish habitat degradation. One of the greatest single causes for fish habitat degradation in the Planning Area is the construction of the Hells Canyon Dam Complex on the Snake River.

The ODEQ has identified many of the streams in the Planning Area as being water quality limited, which means in-stream water quality fails to meet established standards for certain parameters for all or a portion of the year. Nine water quality-limiting parameters listed by ODEQ affect fish habitat in the Planning Area. These include algae, bacteria, DO, flow modification, habitat modification, nutrients, pH, sedimentation, and temperature. Variations in temperatures can be lethal to many fish species in the Planning Area, with the cause of mortality being dependent on the actual temperature range. The modes of thermally (i.e., temperature-related) induced fish mortality are presented in Table 3-19.

Table 3-19. Modes of Thermally Induced Fish Mortality

Modes of Thermally Induced Fish Mortality	Temperature Range	Time to Death
Instantaneous Lethal Limit – Denaturing of bodily enzyme systems	> 90°F > 32°C	Instantaneous
Incipient Lethal Limit – Breakdown of physiological regulation of vital bodily processes, namely: respiration and circulation	70°F to 77°F 21°C to 25°C	Hours to Days
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
Reproduced from ODEQ 2004.		

Occupied fish habitat within the Decision Area includes mostly perennial streams and some intermittent streams, as well as channels and draws that contain flows only in response to rainfall and/or snowmelt events. Based on the Pacific Northwest Hydrography Framework dataset, there are approximately 578 miles of perennial streams, 1,252 miles of intermittent or seasonal streams, and 34 miles of ephemeral or unknown streams within the Decision Area. Many springs and ephemeral channels (i.e., those that run only during snowmelt and rainfall events) provide water to perennial and intermittent streams that support anadromous and resident fish species. Table 3-20 lists native fishes found within the Planning Area.

Table 3-20. Native Fish Species in the Planning Area

Common Name	Scientific Name	Common Name	Scientific Name
Rainbow trout/ Steelhead	*Oncorhynchus mykiss gairdneri*	Northern pikeminnow	*Ptychocheilus oregonensis*
Redband trout	*Oncorhynchus mykiss gairdneri*	Shorthead sculpin	*Cottus confuses*
Westslope cutthroat	*Oncorhynchus clarki lewisi*	Paiute sculpin	*Cottus beldingi*
Chinook salmon	*Oncorhynchus tshawytscha*	Chiselmouth	*Acrocheilus alutaceus*
Bull trout	*Salvelinus confluentus*	Peamouth	*Mylocheilus caurinus*
Pacific lamprey	*Lampetra tridentata*	Longnose dace	*Rhinichthys cataractae dulcis*
White sturgeon	*Acipenser transmontanus*	Speckled dace	*Rhinichthys osculus*
Mountain whitefish	*Prosopium williamsoni*	Redside shiner	*Richardsonius balteatus*
Mottled sculpin	*Cottus bairdi*	Largescale sucker	*Catostomus macrocheilus*
Slimy sculpin	*Cottus cognatus*	Mountain sucker	*Catostomus platyrhynchus*
Torrent sculpin	*Cottus rhotheus*	Bridgelip sucker	*Catostomus columbianus*
(Northwest Power Planning Council [NWPPC] 2004 a-c)			

Over the years, stream health, water quality, and instream fish habitat have degraded, affecting anadromous and resident fish species. Rearing and spawning areas have been reduced in size and quantity as rivers have been straightened, large wood removed, pool habitat and riparian vegetation reduced and/or eliminated, side channels and wetlands removed, beavers removed, and stream bottoms compacted by fine sediment.

The BLM has monitoring and/or inventory data for a majority of the streams within the Decision Area, consisting mostly of water quality and stream temperature baseline data. The loss of water volume during summer low flows, which is mainly due to water withdrawal for irrigation

purposes and hydropower dam operations, has directly affected stream temperature. Increasing air temperatures in summer months, compounded by the effects of climate change, can also directly affect stream temperatures, especially in areas where riparian vegetation and stream shade are currently lacking. In many areas, nearly the entirety of fish-bearing streams can be reduced to almost no flow during summer months (June - August).

The overall condition of the fisheries is linked to the condition of the riparian area and the stream channel. Channel characteristics are different in every watershed of the Planning Area as streams and riparian area conditions are dynamic. Natural events, alone or in combination with degraded habitat conditions resulting from human activities, can affect stream productivity.

Many of the streams that are within forested sections are quite stable; however, rain-on-snow events, landslides, avalanches, or storm events can quickly alter stream channels and riparian areas. Non-forested streams (e.g., high desert streams) can also have rain-on-snow events or storm events that can wipe out all riparian vegetation next to a stream. Many of the tributary streams that feed into larger rivers are on steep ground and can have high sediment yields, especially during a storm event.

Riparian habitat degradation is the most serious problem in the Decision Area for fish as it contributes to other water quality factors. Improving these riparian areas would thereby improve temperature, stream stability, sediment, other water quality factors, and instream fish habitat.

In portions of the Planning Area, especially in the watersheds upstream of Hells Canyon Dam, introduced non-native fish species have affected or eliminated native fish populations through predation and competition for food and cover. However, many of the non-native fish species are favored by anglers and are important for the Planning Area's sport and recreational fisheries. Table 3-21 lists non-native fish in the Planning Area.

Table 3-21. Non-Native Fish Species in the Planning Area

Common Name	Scientific Name	Common Name	Scientific Name
Brook trout	*Salvelinus fontinalis*	Black crappie	*Poxomis nigromaculatu*
Bluegill	*Lepomis macrochirus*	Channel catfish	*Ictalurus punctatus*
Lake trout	*Salvelinus namaycush*	White crappie	*Poxomis annularis*
Pumpkinseed	*Lepomis gibbosus*	Flathead catfish	*Pylodictis olivaris*
Warmouth	*Lepomis gulosis*	Largemouth bass	*Micropterus salmoides*
Carp	*Cyprinus carpio*	Brown bullhead	*Ameiurus nebulosus*
Yellow perch	*Perca flavescens*	Smallmouth bass	*Micropterus dolomieu*
Walleye	*Stizostedion vitreum*	Golden trout	*Oncorhynchus aguabonita*
(NWPPC 2004 a-c)			

Several habitat attributes are the main drivers of fish production and sustainability, and include riparian condition, channel stability, habitat diversity, sediment load, high flow frequency, low flow frequency, DO, temperature, and pollutants (Bjornn and Reiser 2001). Table 3-22 presents these key features necessary for healthy fish populations. The BLM can manage for all the stream characteristics listed in Table 3-22 except high and low flows, which are highly variable

and dependent upon weather and the effects of climate change, snow accumulation, irrigation withdrawal, and hydropower dam operation

Table 3-22. Key Habitat Features Necessary for Healthy Fish Populations

Habitat Attribute	Definition
Riparian Condition	Condition of streamside vegetation, landform, and subsurface water flow.
Channel Stability	Condition of the channel in regards to bed scour and artificial confinement. Measures how the channel can move laterally and vertically and to form a "normal" sequence of stream unit types.
Habitat Diversity	Diversity and complexity of the channel, including amount of large woody debris and multiple channels.
Key Habitat	The complex of habitat types formed by geomorphic processes and large woody debris within the stream (e.g. pools, riffles, glides, etc.).
Sediment Load	Amount of fine sediment within the stream, especially within spawning reaches.
High Flow	Frequency and volume of high flow events.
Low Flow	Frequency and volume of low flow events.
Oxygen	DO in water column and stream substrate.
Temperature	Duration and magnitude of high summer water temperature or low winter temperatures that can be limiting to fish survival.
Pollutants	Introduction of toxic (acute and chronic) substances into the stream.

The survival, growth, and diversity of species within a stream depend upon the amount and type of impacts that occur within that stream system. Fish require good water quality for survival. Certain water quality standards that meet basic biological needs for coldwater fish species have been developed by ODEQ, including standards for turbidity, pH, DO, stream temperature, and pollutants, which are as follows:

- Turbidity < 10 Nephelometric Turbidity Units over background
- pH = 6.5-8.5
- DO = 8.0-11.00
- Stream Temperature = 20°C or 68°F
- E. coli = 30 day log mean of 126 E. coli per 100/ml (based on five samples). No single sample is to exceed 406 E. coli per 100/ml

The Planning Area's aquatic habitats have gradually declined over the last century due to a combination of human influences, including dam construction, irrigation projects, impassable culverts, livestock grazing, roads, farming/ranching, timber removal, mining, and recreational use. Such activities have led to a loss of wetland and riparian habitats, reduced water quantity and quality, increased water temperatures, loss of instream habitat, and blocked migration routes, all of which has led to a decline in native fish populations and habitat.

Over the last 17 years, the Baker FO has been making an effort to inventory all perennial and intermittent streams within the Decision Area and noting their existing condition. With this information, the BLM has attempted to identify the activities responsible for some streams remaining relatively healthy, and those responsible for many streams declining in health or remaining in poor condition. Based on such inventories, changes have been made in livestock

grazing (e.g., changes in seasons of use, fencing construction/removal, or reductions in AUMs) and other land management activities, which have led or could lead to improvements in stream and riparian conditions. Restoration projects have been proposed for, or other protection measures added to, the management of the streams that were identified to be in poor condition. Anadromous stream habitat that the BLM manages has had additional protection measures added to existing management direction to aid in reducing impacts, especially from cattle grazing (e.g., changes in seasons of use, fencing construction/removal, reductions in AUMs).

The productivity of streams within the Decision Area will remain below potential until habitat conditions and watershed processes are improved, and other sources of salmon/steelhead mortality are reduced. Passage at dams and impacts from commercial (and to a lesser degree, recreational) fisheries are significant sources of fish mortality. Activities with the potential to impact stream habitat, such as those that cause or create sediment disturbance adjacent to streams, must be designed to minimize negative effects and restoration actions should be taken.

Many of the watersheds within the Planning Area are comprised of only a small amount of land administered by federal agencies (e.g., USFS and BLM). In fact, some of the most important watersheds that support anadromous fish species consist of less than 3 percent BLM-administered public lands (J. Quintela, BLM, unpublished data 2010). As a result, impacts to fish species due to activities within the Decision Area are minimal in comparison to activities occurring on lands not administered by the BLM. Therefore, coordination is critical among all landowners (federal, state, and private) to ensure adequate watershed conditions that support healthy and self-sustaining native fish populations.

Table 3-23 displays the key special status fish species that occur within the Decision Area. The table includes special status anadromous fish species, including Snake River and Mid-Columbia River steelhead (*Oncorhynchus mykiss gairdneri*) and Snake River Chinook salmon (*Oncorhynchus tshawytscha*). Bull trout occupy the headwaters and coldest water streams within the Planning Area, while redband trout, a federal and state special status species, inhabit most of the perennial streams within the Planning Area. The USFWS considers the Pacific lamprey as a candidate species under the ESA, but its status and distribution within the Planning Area is relatively unknown.

Table 3-23. Special Status Fish Species

Common Name	Scientific Name	Federal Status (ESA)	Washington Status[1]	Oregon Status[2]
Chinook salmon-Snake River Spring/Summer Run Evolutionarily Significant Unit (ESU)	*Oncorhynchus tshawytscha*	Threatened	C	Threatened
Chinook salmon-Snake River Fall Run ESU	*Oncorhynchus tshawytscha*	Threatened	C	Threatened
Steelhead-Snake River Basin ESU	*Oncorhynchus mykiss gairdneri*	Threatened	C	S-V
Steelhead-Mid Columbia ESU	*Oncorhynchus mykiss gairdneri*	Threatened	C	S-V
Bull trout	*Salvelinus confluentus*	Threatened	C	S-C

Table 3-23. Special Status Fish Species

Common Name	Scientific Name	Federal Status (ESA)	Washington Status[1]	Oregon Status[2]
Redband trout	*Oncorhynchus mykiss gibbsi*	Species of Concern	--	S-V
Pacific lamprey	*Lampetra tridentata*	Species of Concern	SM	S-V

1 WA Status Definitions: C = Candidate; SM= State Monitor
2 OR Status Definitions: S-US = Sensitive-Unclear Status; S-C = Sensitive-Critical; S-V = Sensitive-Vulnerable

Special status fish species are found in various subbasins throughout the Planning Area. These subbasins and the fish species present are listed in Table 3-24, along with information on which subbasins contain designated critical habitat for special status fish species. Map 3-7 (on CD) illustrates the location of special status fish species in the Planning Area, while Map 3-8 (on CD) illustrates streams with designated critical habitat for special status species.

Table 3-24. Special Status Fish Species by Subbasin

Subbasin (4th HUC)	Redband Trout	Chinook Salmon	Steelhead	Bull Trout	Designated Critical Habitat for Chinook (C), Steelhead (S), Bull Trout (BT)
Lower Snake-Asotin	X	X	X	X	X (C, S, BT)
Lower Grande Ronde River	X	X	X	X	X (C, S, BT)
Walla Walla River	X	X (Chinook present but not listed)	X	X	X (BT, S)
Middle Columbia-Lake Wallula	X	X (Chinook present but not listed)	X	--	X (S)
Upper John Day River	X	X (Chinook present but not listed)	X	X	X (BT, S)
Umatilla River	X	X	X	X	X (BT, S)
Upper Grande Ronde River	X	X	X	X	X (BT, S, C)
Wallowa River	X	X	X	X	X (BT, C, S)
Imnaha River	X	X	X	X	X (BT, C, S))
Brownlee Reservoir	X	X (below Hells Canyon Dam)	X (below Hells Canyon Dam)	X	X (BT)
Powder River	X	extirpated	extirpated	X	X (BT)
North Fork John Day River	X	X (Chinook present but not listed)	X	X	X (BT, S)
Lower John Day River	X	X (Chinook present but not listed)	X	--	X (BT, S)
Burnt River	X	extirpated	extirpated	--	None
Willow Creek	X	--	--	--	None

Special Status Fish Species Discussion

Snake River Spring/Summer Chinook: The final ruling under the ESA to list Chinook salmon as threatened became effective on May 22, 1992 (57 Code of Federal Regulations [CFR] 14653) and corrected on June 3, 1992 (57 CFR 23458) by the NMFS. The final ruling listing critical habitat for Chinook salmon became effective January 27, 1994 (58 CFR 68543). That ruling was reconfirmed for spring, summer, and fall Chinook as threatened on June 28, 2005 (70 CFR

37160) and for critical habitat for 19 evolutionarily significant units (ESUs), including Snake River spring, summer, and fall Chinook salmon, on September 2, 2005.

Most adult spring Chinook salmon enter the Columbia River and pass Bonneville Dam in April and May (Good et al. 2005). By June or July, the adults are holding at or near their natal spawning streams. Spawning usually occurs in August and September. Eggs incubate in their redds over the winter and fry emerge between March and May.

Sport harvesting of native Chinook salmon has been prohibited in the Grande Ronde River Subbasin since 1974 in Oregon and 1977 in Washington. Three hatchery initiatives are currently underway in the Grande Ronde River Subbasin: the Lower Snake River Compensation Plan, Northeast Oregon Hatchery Program, and the Grande Ronde Endemic Supplementation Program (Myers et al. 1998). Agencies involved with these initiatives include NMFS, ODFW, and several Native American tribes.

Designated critical habitat for spring/summer Chinook salmon within the Lower Grande Ronde River Subbasin includes approximately 130 miles of rearing and migration habitat. Of these 130 miles, approximately 33 miles also serve as spring/summer Chinook spawning habitat. The major spring/summer Chinook salmon producing stream in the subbasin is the Wenaha River.

Spring Chinook salmon have been extirpated from the Walla Walla River basin since the early 1920s (Nielson 1950; Van Cleave and Ting 1960), although some adults were recorded in steelhead creel surveys as late as 1955 (Thompson and Haas 1960). In 2001, the Confederated Tribes of the Umatilla Indian Reservation began reintroducing Chinook salmon by releasing more than 1,000 adult spring Chinook salmon into the Walla Walla River basin. Prior to 2001, the Confederated Tribes of the Umatilla Indian Reservation built an adult fish processing facility downstream of Harris Park along the South Fork of the Walla Walla River, where adult fish have been released in the hopes that they will return to spawn successfully in the river, in order to facilitate their reintroduction efforts.

In 2004, the first returning Chinook salmon returned to the South Fork of the Walla Walla River to spawn, with 110 fish passing through the Confederated Tribes of the Umatilla Indian Reservation Nursery Bridge Dam fish ladder. Out of a total of 225 redds counted in the Walla Walla River basin in 2004, 41 redds were found between the South Fork of the Walla Walla River fish hatchery and the BLM trailhead, and 64 redds were found between the trailhead and Bear Creek, a headwater tributary to the South Fork of the Walla Walla River. Out of 78 redds counted in the Walla Walla River basin in 2005, 8 redds were found between the fish hatchery and the trailhead and 28 redds were found between the trailhead and Bear Creek. Since 2007, the number of Chinook salmon returning to spawn in the South Fork of the Walla Walla River has increased substantially. In 2007, 1,000 Chinook salmon returned to the Walla Walla River, with approximately 300 adult fish (30 percent) expected to have spawned in the South Fork of the Walla Walla River that year.

In 2008, 500 adult Chinook salmon were expected to return to spawn in the South Fork of the Walla Walla River, along with 300 out-planted adult Chinook salmon that were direct stream released into the river from the Confederated Tribes of the Umatilla Indian Reservation fish processing facility. In the spring of 2009, 600 adult spring Chinook salmon were expected to return to spawn in the South Fork of the Walla Walla River, along with 150 jacks. According to the Confederated Tribes of the Umatilla Indian Reservation, the final count at the Nursery Bridge Dam in October 2009 was 575 adult spring Chinook and 167 jacks. An additional 45 females, 7 males, and 2 jacks were released into the South Fork of the Walla Walla by the Confederated Tribes of the Umatilla Indian Reservation in September 2009.

Snake River Fall Chinook: Snake River fall-run Chinook salmon enter the Columbia River in July and August. The Snake River component of the species migrates past the lower Snake River mainstem dams from August through November. Spawning occurs from October through early December, with juveniles emerging from the gravels in March and April of the following year. Snake River fall-run Chinook salmon exhibit an ocean-type life history pattern, with juveniles migrating downstream from their natal spawning and rearing areas from June through early fall (Good et al. 2005).

Fall-run Chinook salmon returns to the Snake River generally declined through the first half of the 20th century (Irving and Bjornn 1981). In spite of the declines, the Snake River basin remained the largest single natural production area for fall-run Chinook salmon in the Columbia River drainage into the early 1960s (Fulton 1968), until the construction of a series of Snake River mainstem dams significantly reduced spawning and rearing habitat. Historically, the primary fall-run Chinook salmon spawning areas were located on the upper mainstem Snake River. Currently, natural spawning is limited to the area from the upper end of Lower Granite Reservoir to Hells Canyon Dam; the lower reaches of the Imnaha, Grande Ronde, Clearwater, and Tucannon rivers; and small mainstem sections in the tailraces of the lower Snake River hydroelectric dams (Good et al. 2005).

The NMFS initially listed the Snake River fall Chinook ESU as threatened on April 22, 1992, and reaffirmed their threatened status on June 28, 2005 (70 CFR 37160). The ESU includes all naturally spawned populations of fall-run Chinook salmon in the mainstem Snake River below Hells Canyon Dam and in Tucannon, Grande Ronde, Imnaha, Salmon Clearwater rivers. The ESU also includes four artificial propagation programs: the Lyons Ferry Hatchery, Fall Chinook Acclimation Ponds Program, Nez Perce Tribal Hatchery, and Oxbow Hatchery fall-run Chinook hatchery programs.

Previous Chinook salmon status reviews (Waples et al. 1991; Myers et al. 1998) identified several concerns regarding Snake River fall-run Chinook salmon. Such concerns include a steady and severe decline in abundance since the early 1970s, the loss of primary spawning and rearing areas upstream of the Hells Canyon Dam complex, an increase in nonlocal hatchery contribution to adult escapement over Lower Granite Dam, and relatively high aggregate harvest impacts by ocean and in-river fisheries (Good et al. 2005).

Fall Chinook currently rear and spawn in the lower Grande Ronde River up to Wildcat Creek (River Mile [RM] 53). Identification of their spawning area is based on aerial surveys conducted annually by the USFWS and the Nez Perce Tribe.

Fall Chinook salmon are indigenous to larger streams within the Lower Grande Ronde River Subbasin. Information is limited on areas historically used by fall Chinook. Currently, there are 86.2 miles of designated critical habitat in this subbasin, which includes the only known spawning habitats in the subbasin: the Grande Ronde River below Rondowa (RM 82) and the lower 4.2 miles of Joseph Creek, where fall Chinook are believed to have historically spawned and reared.

Snake River Steelhead: The Snake River Basin steelhead ESU is distributed throughout the Snake River drainage system, including tributaries in southeast Washington, eastern Oregon, and north/central Idaho (NMFS 1996a). Snake River Basin steelhead migrate a substantial distance from the ocean (up to 1,500 km) and use high-elevation tributaries (typically 1,000–2,000 m above sea level) for spawning and juvenile rearing. Snake River steelhead occupy habitats that are considerably warmer and drier (on an annual basis) than other steelhead ESUs (NMFS 1996a). Snake River Basin steelhead are generally classified as summer run, based on their adult run-timing patterns, as they enter the Columbia River from late June to October. After holding over the winter, summer-run steelhead spawn the following spring (March to May). Managers classify upriver summer steelhead runs into two groups based primarily on ocean age (i.e., the number of years a fish spends in the ocean prior to returning to freshwater) and adult size on return to the Columbia River. This classification system includes A-run steelhead, which are predominantly age-1 ocean fish, and B-run steelhead, which are larger, predominated by age-2 ocean fish (Good et al. 2005).

With the exception of the Tucannon River and some small tributaries to the mainstem Snake River, the tributary habitat used by Snake River Basin steelhead is above Lower Granite Dam. Major groupings of populations and subpopulations can be found in the Grande Ronde River system, the Imnaha River drainage, the Clearwater River drainages; the South Fork Salmon River; the smaller mainstem tributaries before the confluence of the mainstem Snake River; the Middle Fork Salmon River, the Lemhi and Pahsimeroi rivers, and upper Salmon River tributaries (Good et al. 2007).

The NMFS initially listed the Snake River Basin steelhead as a threatened species on August 18, 1997, and reaffirmed their threatened status on January 5, 2006 (71 CFR 834). This includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in streams in the Snake River Basin of southeast Washington, northeast Oregon, and Idaho. It also includes fish from six artificial propagation programs, which include the Tucannon River program, Dworshak National Fish Hatchery, Lolo Creek program, North Fork Clearwater program, East Fork Salmon River program, and the Little Sheep Creek/Imnaha River Hatchery.

The final ruling designating critical habitat for Snake River steelhead was published on September 2, 2005.

Mid-Columbia River Steelhead: In response to a court order, the NMFS published a proposal on February 15, 1998 to list the Mid-Columbia River Basin segments of summer steelhead under the ESA. That finding was reconfirmed and critical habitat was designated for the Mid-Columbia River Basin steelhead on January 5, 2006 (71 CFR 834). The Mid-Columbia River population of summer steelhead within this Planning Area includes the Walla Walla River and its tributaries.

On September 30, 2009, NMFS announced the adoption of an ESA recovery plan for the Middle Columbia River Steelhead distinct population segment. The plan identifies limiting factors and threats, and actions to address those threats by population. Populations were stratified into major population groups, which correspond to the drainage in which they reside. The Mid-Columbia River population of summer steelhead within the Planning Area is included within the Umatilla/Walla Walla major population group (NOAA 2009). While the ESA does not require any entity to do any action identified in a recovery plan, with participation being entirely voluntary, NMFS has indicated that recovery plans will provide context for their ESA Section 7(a)(2) consultations (Joe Moreau pers. comm. 2009).

The South Fork Walla Walla River is a top producer of threatened Mid-Columbia summer steelhead and provides high quality habitat for this species as well. The Walla Walla River population of the Mid-Columbia summer steelhead ESU is classified as an intermediate-sized population, which has a mean minimum abundance threshold of 1,000 natural spawners with a sufficient intrinsic productivity (greater than 1.4 recruits per spawner at the threshold abundance level) to achieve a 5 percent or less risk of extinction over a 100-year time frame (Carmichael et al. 2006). Current production of the Walla Walla River population is concentrated in the North and South Forks of the Walla Walla River, along with Course and Mill Creeks.

Bull Trout: The USFWS published a final ruling listing bull trout in the Columbia River distinct population segment as a threatened species under the ESA (63 CFR 31647). The ruling became final on July 10, 1998. The Columbia River population of bull trout includes fish found in the Grande Ronde, Umatilla, Walla Walla, John Day, Snake, Imnaha, Wallowa, and Powder rivers, as well as several tributaries within those watersheds.

On September 30, 2010, the USFWS designated critical habitat for bull trout throughout their U.S. range. Approximately 18,795 miles of streams and 488,252 acres of lakes and reservoirs in Idaho, Oregon, Washington, Montana, and Nevada were designated as critical habitat for the wide-ranging fish. This designation was the result of an extensive review of the USFWS's previous bull trout critical habitat proposals and designation, as well as comments and new information received during the 2010 public review process (USFWS 2010).

The South Fork Walla Walla River, including slightly over 3½ miles that flow through the Decision Area, is a top producer of bull trout in the Walla Walla River Basin, as well as providing high quality habitat for this species. The river is located in the Umatilla-Walla Walla Recovery Unit of the Columbia River population, which encompasses the entire Umatilla and Walla Walla River drainages. In the Walla Walla River Basin, the South Fork Walla Walla River River accounts for 30 percent of the basin's annual runoff, but only 4 percent of the drainage area. While the main channel consists mainly of swift water over a gravel-boulder substrate, the river also contains a diversity of habitat for bull trout, including extensive side channeling, backwaters, abundant vegetation cover, and deep pools. One of the most important features of the South Fork Walla Walla River River for bull trout is that the water temperature hardly ever exceeds 59°F, except for rare occasions during the warm summer months (USFWS 2008). This is a unique characteristic for streams in the Umatilla-Walla Walla Recovery Unit of the Columbia River population, and is an important factor in the viability of this species. As such, the status of bull trout population in the South Fork Walla Walla River River is described as "low risk."

By comparison, the bull trout population in the North Fork of the Walla Walla River is at "high risk" of extinction, while the population in Mill Creek is "of special concern." The status of the Umatilla bull trout populations was also categorized as "species of special concern" in the North Fork of the Umatilla River, and at "high risk" of extirpation in the South Fork of the Umatilla River and the North Fork of Meacham Creek (Buchanan et al. 1997). The WDFW considers the status of Mill Creek bull trout as "healthy," while bull trout status is "unknown" in the Touchet River (USFWS 2004).

Redband Trout: Redband trout have been recently classified into the rainbow trout grouping *Oncorhynchus mykiss gairdneri*. Redband trout are the interior (inland) rainbow trout species, which can be differentiated from coastal rainbow trout both electrophoretically and by meristic characteristic differences, such as having very fine scales and an extra row of teeth on the tongue. Inland redband trout coloration is highly variable, but most often there is a brick-red coloring around the lateral line and dark colored parr marks (spots) along the entire body. By comparison, coastal rainbow trout have a rainbow coloring around the lateral line and light colored parr marks along the body. Redband trout spawning behavior appears to be most similar to that of rainbow and golden trout, which are all spring spawners and require gravel riffles in which the female excavates a redd (Behnke 1992). Redband trout have been listed as a sensitive species (BLM) and a species of concern (ODFW and USFWS) in Oregon because their population levels have diminished from historical levels.

Currens (1991) looked at the genetic variation within and among populations of redband trout in the Burnt and Powder rivers, which showed consistent genetic characteristics to that of inland redband trout within the Columbia and Snake rivers. Local population differences between the two populations were tested in the Burnt River, but it was concluded that the Burnt and Powder River populations are inland redband/rainbow trout.

The current distribution of redband trout within the Planning Area is relatively unknown due to the lack of definitive stream surveys that determine fish presence or absence and genetic analysis of specimens captured in the field. Based on their widespread historical distribution, redband trout are assumed present in all streams within the Planning Area, unless available information or data determines or states otherwise. Additionally, hybridization with rainbow trout makes it difficult to identify redband trout visually and requires verification of field identification through genetic analysis.

Pacific Lamprey: The abundance and distribution of Pacific lamprey has significantly declined throughout its range over the past three decades (Silver et al. 2009). Many factors have contributed to this decline, including impeded passage at dams and diversions, altered management of water flows and dewatering of stream reaches, dredging, chemical poisoning, poor ocean conditions, degraded water quality, disease, over-utilization, introduction and the establishment of non-native fishes, predation, and stream and floodplain degradation (Silver et al. 2009). Mitigation and restoration actions that focused on habitat restoration of salmonid species within tributary habitats may have also contributed to this decline as they may not have considered needs unique to lampreys.

Pacific lampreys are important for many reasons:

- They have high cultural significance to Native American tribes from California to Alaska.
- They may have served as a primary food source for aquatic, mammal, and avian predators that prey on ESA-listed salmonids and other recreational and commercially important fish species.

In July 2008, the four treaty tribes within the Columbia River Basin (Umatilla, Warm Springs, Nez Perce, and Yakama Nation) released a draft of the Tribal Pacific Lamprey Restoration Plan for the Columbia River Basin (Columbia River Intertribal Fish Commission 2008). This plan described an explicit and time-sensitive path over the next ten years for implementing conservation actions in both the mainstem Columbia and Snake Rivers and associated tributary rivers and streams. The ultimate goal of the plan is to restore Pacific lamprey populations to levels supportive of their unique cultural and ecosystem values.

The Pacific lamprey is included as a state sensitive species in Oregon and Washington, state-listed endangered species in Idaho, designated tribal trust species, and a species of concern by the USFWS. The Pacific lamprey has been designated as a USFS Sensitive Species in Regions 1 and 4, and is classified as a Type 2 species (rangewide/globally imperiled) by the BLM.

A petition in 2003 (Nawa et al. 2003) to list the Pacific lamprey under the ESA was determined to be not warranted by the USFWS. However, in their determination, the USFWS acknowledged that Pacific lamprey have declined in the Columbia River Basin and in many parts of their range. The Pacific lamprey has and continues to face a variety of threats associated with passage and entrainment at dams and water diversion structures; altered stream flows, including dewatering

of stream reaches; dredging, chemical poisoning; degraded water quality; poor ocean conditions; disease; over-utilization; introduction and establishment of non-native fishes; predation; and stream and floodplain degradation/simplification (Silver et al. 2009).

Historically, Pacific lamprey have occurred within the Grande Ronde River Subbasin. Remnant populations may persist in the subbasin, but their distribution and abundance are unknown, making assessing this species' distribution and habitat conditions difficult. Although they are presumed to be present in the lower Grande Ronde, Imnaha, and lower Snake rivers, Pacific lamprey presence has never been documented within waters managed by or adjacent to land managed by the Baker FO.

Special Status Fish Species Habitat Needs

Special status fish are dependent upon the same general habitat attributes that are considered the main "drivers" of fish production and sustainability. More specific habitat needs for special status fish species are presented below.

Snake River Spring/Summer/Fall Chinook: Habitat loss and modification are the major factors determining the status of salmon populations. Conservation and recovery of Pacific Northwest salmon depend on having diverse habitats with connections among those habitats. The salmonid lifecycle involves adults maturing in the ocean, migrating back to their natal streams and spawning, incubating as embryos, emerging as fry, growing and rearing as juveniles, and migrating to the ocean as smolts. Each life history phase may require use of and access to a diversity of habitats. Loss of any of these habitats reduces the diversity in salmon life histories, which influences the ability of these fish to adapt to natural and man-made change (Myers et al. 1998).

Chinook salmon need freshwater habitat that includes the following basic features (Myers et al. 1998):

- Cool, clean water.
- Appropriate water depth, quantity, and flow velocities.
- Healthy and abundant upland and riparian vegetation to stabilize soil, streambanks, and provide shade.
- Clean gravel for spawning and egg rearing.
- Large woody debris to provide resting and hiding places (refugia).
- Adequate food sources.
- Varied channel forms and habitat complexity.

Chinook salmon also have specific habitat requirements for spawning, rearing fry/par, smolts, and adults, the needs for which are listed below (Myers et al. 1998):

- Spawning
  - Substrate size: 2 to 3 inches is most prevalent, while gradation ranges from 1 to 4 inches. Substrate must also be stable in order to avoid shifting and causing damage to eggs.
  - Water depth: Generally less than 36 inches and more than 20 inches.
  - Stream feature: Tailouts of pools and occasionally within long runs.
  - Velocity: More than 3 ft/sec.
  - Water temperature: Optimum range is between 42°F to 51°F, while the upper limit is 60.8° F.

- Rearing Fry/Parr
  - Velocities: Slow but flowing water (edge of the main channel).
  - Water temperatures: Optimum range is from 53°F to 60°F, while the upper limit is 77°F for short time periods.
  - Food: Feed on all types of available aquatic invertebrates.
  - Predatory Considerations: Side channels and slack water areas provide optimum rearing conditions and typically provide a variety of habitat features that offer protection for juvenile fish from predators. The primary channel cover features that the fry use are voids in boulders and fallen trees along the edge of the stream.
  - Depth: Variable, but generally less than 4 feet.
  - Stream Features: During the spring and summer, juvenile fish are primarily concentrated in side channels and in the main channel along stream bank edges, where velocities are lower. During the winter, rearing fish move to deeper water in the main channel and seek refugia in the interstitial spaces of the substrate (consequently, sediment-free substrate is important). The side channels provide important places for both rearing and refuge during flood events.

- Smolts
  - Velocities: Variable.
  - Water temperatures: Same as fry.
  - Food: Feed on a variety of aquatic macro-invertebrates and other smaller aquatic insects.
  - Predatory Considerations: Travel generally at night to avoid both terrestrial and aquatic predators.
  - Depth: Variable.
  - Stream feature: Main channel free of obstructions.

- Adults
  - Velocities: Variable.
  - Water Temperature: Same as fry.
  - Feeding: No feeding occurs once the adults enter fresh water.
  - Predatory considerations: More complex habitat features offers protection from predators.

- Depth: More than 5 feet or in areas with at least 3 feet that have cover.
- Stream Features: Hold in main channels, but typically in logjams and deep holes near where they spawn.

Mid-Columbia and Snake River Steelhead: As with salmon, steelhead habitat requirements change as they go through different life phases. Adult steelhead also need access to their natal streams, which means that streams must be free of barriers that prevent migration because the majority of spawning occurs in the upper reaches of tributary streams. Adults also need access to spawning gravel in areas free of heavy sedimentation with adequate flow and cool, clear water. Steelhead utilize gravel that is between 0.5 to 6 inches in diameter, dominated by 2- to 3-inch gravel. Escape cover such as logs, undercut banks, and deep pools are also important (Bjornn and Reiser 1991).

For steelhead eggs and pre-emergent fry, the most important consideration for habitat is cool water with adequate DO. Fine sediment will smother developing embryos, so the area must not have excessive amounts of fine silt or sand. During their first summer, juvenile steelhead are typically found in relatively shallow areas with cobble and boulder substrate. Juvenile steelhead prefer areas with woody debris accumulation such as logs or tree roots. Cover structures such as boulder clusters and root wads provide both summer and winter rearing habitat. Surface turbulence (or white water) provides another source of cover during the summer months. As juvenile steelhead grow, pools become an important habitat component, especially those with abundant cover in the form of large woody debris, undercut banks, root masses, and large boulders (Good et al. 2005).

Cool, clean water is essential for the survival of steelhead during all portions of their life cycle. Elevated water temperatures (> 70°F) can greatly impair the growth rate of juvenile steelhead (Good et al. 2005). Warmer water also holds less DO and increases susceptibility to disease.

Bull Trout: Bull trout have more specific habitat requirements than most other salmonids. Habitat components that influence bull trout distribution and abundance include water temperature, cover, channel form and stability, substrate for spawning and rearing, and migratory corridors. Bull trout are found in colder streams and require colder water than most other salmonids for incubation, juvenile rearing, and spawning. Spawning and rearing areas are often associated with cold-water springs, groundwater infiltration, and/or the coldest streams in a watershed. Throughout their lives, bull trout require complex forms of cover, including large woody debris, undercut banks, boulders, and pools. Alterations in channel form and reductions in channel stability result in habitat degradation and reduced survivability of bull trout eggs and juveniles. Channel alterations may reduce the abundance and quality of side channels, stream margins, and pools, all of which are areas frequently inhabited by bull trout. For spawning and early rearing, bull trout require loose, clean gravel relatively free of fine sediment. Because bull trout have a relatively long incubation and development period within spawning gravel (greater than 200 days), transport of bedload in unstable channels may kill young bull trout. Bull trout use migratory corridors to move from spawning and rearing habitats to foraging and over-

wintering habitats, and vice versa. Diverse habitats provide bull trout with diverse resources, and unhindered access to migratory corridors allows local populations to connect, which increases the potential for gene flow and the support or re-establishment of populations (Buchanan et al. 1997).

Redband Trout: Redband trout are similar to brook trout (*Salvelinus fontinalis*) in terms of requirements for food, space, cover, and individual territories afforded by the riffles and small pools of headwater streams (Bacon et al. 1980). However, redband trout appear to tolerate higher siltation conditions and select lower water velocity situations than what is typical for most trout.

Redband trout also appear to be more tolerant of higher water temperatures than most other salmonids. Some redband trout populations in the desert basins of southeast Oregon have adapted to very high water temperatures through a unique survival mechanism and are known to inhabit intermittent, stagnant streams with temperatures as high as 83° F (Behnke 1979).

Pacific Lamprey: Pacific lamprey spawn in similar habitats to salmon, such as gravel-bottomed streams, at the upstream end of riffle habitat, and typically above suitable ammocoete (i.e., larvae) habitat. Spawning occurs between March and July, depending upon location within their range. The degree of homing is unknown, but adult lampreys cue in on ammocoete areas, which release pheromones that are thought to aid in adult migration and spawning location. Both sexes construct nests, often moving stones with their mouth. After eggs are deposited and fertilized, adults typically die between 3 to 36 days after spawning (USFWS 2008).

Embryos hatch in approximately 19 days at 59°F, after which the ammocoetes drift downstream to areas of low velocity and fine substrates where they burrow, grow, and live as filter feeders for 3 to 7 years, feeding primarily on diatoms and algae. Several generations and age classes of ammocoetes may occur in high densities. Ammocoetes move downstream as they age and during high flow events. Little is known about movement and locations of ammocoetes within stream substrates, although it is believed that they may move laterally (USFWS 2008).

b. Trends

The productivity of streams in the Planning Area will remain below potential until habitat conditions and watershed processes are improved, and other sources of salmon and steelhead mortality are reduced. Passage at dams and impacts from commercial (and to a lesser degree, recreational) fisheries are significant sources of fish mortality.

Snake River Spring/Summer Chinook: Historically, spring/summer Chinook salmon have been distributed throughout much of the Lower Grande Ronde River Subbasin. Rearing habitat for spring/summer Chinook salmon may also have occurred in other tributaries and further upstream from current habitat.

Changes in Chinook distribution in the Lower Grande Ronde River Subbasin are somewhat subtle and difficult to map. According to a former ODFW fisheries biologist, some areas historically used for Chinook spawning are now used primarily for seasonal rearing and migration due to human modification of the habitat, which has limited its use for spawning (J. Zakel, pers. comm., 2010).

Passage problems at Columbia and Snake River dams are the primary contributor to the decline in the Grande Ronde River spring Chinook salmon population (ODFW 1987). Grande Ronde River anadromous fish must pass eight dams, four on the Columbia River and four on the lower Snake River, during upstream and downstream migrations. Out-of-subbasin harvest and both in- and out-of-subbasin habitat degradation have also contributed to the population's decline (Ashe et al. 2000).

Within the Grande Ronde River Subbasin, riparian and instream habitat degradation, low stream flows, and poor water quality has severely affected spring Chinook salmon production potential. These problems are the result of water withdrawals for irrigated agriculture and human residential development, livestock overgrazing, mining, mountain pine beetle damage, channelization, recreation use (including OHV use), logging activity, and road construction/ maintenance (Myers et al. 1998). While many of these impacts have been reduced in recent years with management practices becoming more sensitive to fish and aquatic habitats, the effects of some past management activities remain.

Snake River Fall Chinook: Fall Chinook salmon may have been indigenous to larger streams within the Lower Grande Ronde River Subbasin. However, limited information is available on areas historically used by fall Chinook. There are 86.2 miles of designated critical habitat in the subbasin. This includes the only known spawning habitat in the subbasin, the Grande Ronde River below Rondowa (RM 82), and the lower 4.2 miles of Joseph Creek, where fall Chinook are believed to have historically spawned and reared.

The 1999 NMFS status review update noted increases in the Lower Granite Dam counts in the mid-1990s, and the upward trend in returns has continued. The 2001 count over Lower Granite Dam exceeded 8,700 adult fall-run Chinook salmon. The 1997 through 2001 escapements were the highest on record since the count of 1,000 in 1975. Escapement over Lower Granite Dam represents the majority of Snake River fall-run Chinook salmon returns. Small numbers of fall-run Chinook salmon redds have also been reported in tailrace areas below the mainstem Snake River dams (Dauble et al. 1999).

Snake River Steelhead: The primary concern regarding Snake River steelhead identified in the 1998 status review was a sharp decline in natural stock returns beginning in the mid-1980s. Of 13 trend indicators at that time, 9 were in decline and 4 were increasing. In addition, the Idaho Department of Fish and Game (IDFG) parr survey data indicated declines for both A-run and B-run steelhead in wild and natural stock areas. The high proportion of hatchery fish in the run was

also identified as a concern, particularly because of the lack of information on the actual contribution of hatchery fish to natural spawning (Good et al. 2005).

The review recognized that some wild spawning areas (i.e., Selway, lower Clearwater, Middle and South Fork Salmon, and Lower Salmon rivers) have relatively little hatchery spawning influence. In other areas, such as the upper Salmon River, there is likely little or no natural production of locally native steelhead. The review identified threats to genetic integrity from past and present hatchery practices as a concern. The 1998 review also highlighted concerns for widespread habitat degradation and flow impairment throughout the Snake River Basin and for substantial modification of the seaward migration corridor by hydroelectric power development on the Snake and mainstem Columbia rivers (Good et al. 2005).

Resident *O. mykiss* are believed to be present in many of the drainages used by Snake River steelhead. Very little is known about interactions between co-occurring resident and anadromous forms within this ESU. Kostow (2003) reported that field biologists noted spatial and temporal overlaps in spawning between resident and anadromous *O. mykiss* in the Grande Ronde, Imnaha, Tucannon, and upper Snake river basins. The relative abundance of resident *O. mykiss* in the Imnaha and Grande Ronde river basins has not been clearly defined, although *O. mykiss* production has been documented in both basins (Good et al. 2005). Kostow (2003) reported that although no formal surveys of resident trout abundance have been conducted in the Imnaha River basin, the results of genetics sampling in the basin support the presence of a resident form.

Resident *O. mykiss* populations are present above the Hells Canyon Dam complex, but their relationship to existing steelhead populations below the dams has not been determined (Kostow 2003). There have been relatively few specific studies of potential relationships between sympatric residents and anadromous *O. mykiss* in the Snake River Basin. Genetic analyses of resident populations in tributaries above the Hells Canyon Dam concluded that some populations are native redband trout, but others are hybridized with hatchery rainbow trout. A number of genetic studies of Snake River *O. mykiss* that are under way should provide more specific information about resident populations in the future (Good et al. 2005).

Mid-Columbia River Steelhead: Summer steelhead have been on a very steady decline over the last 40 to 50 years. Stream conditions over the years have declined, affecting the emergence and rearing of young smolts. Sediment and high stream temperatures are affecting this population and preventing population increases.

In the Walla Walla River Subbasin, summer steelhead historically spawned and reared throughout a large area of the middle and upper reaches of the mainstem Walla Walla and Touchet Rivers and their tributaries. Widespread habitat degradation resulting from irrigation, dryland farming, livestock grazing, and logging has reduced usable spawning habitat by approximately 50 percent (Mendel et al. 1999).

Adult steelhead enter the Walla Walla River Subbasin from December through March, with peak numbers entering February through March. There are no accurate numbers of historical run sizes, although annual runs are believed to have contained 4,000 to 5,000 fish. For the run years 1977/1978 through 1986/1987, an estimated 1,090 to 1,817 native summer steelhead annually returned to the subbasin (Mendel et al. 1999).

Low stream flow is the main limiting factor for summer steelhead. Naturally low stream flows in the summer months are severely compounded by extensive irrigation withdrawals. Normally, Oregon irrigators completely divert the mainstem Walla Walla River at the Oregon/Washington border (Mendel et al. 1999).

Bull Trout: Bull trout distribution, abundance, and habitat quality have declined throughout their entire historical range, and several localized extirpations have been documented since the 1950s. However, bull trout continue to occur in the Klamath, Columbia, Jarbidge, and St. Mary-Belly rivers, as well as the Coastal-Puget Sound and in the states of Idaho, Montana, Nevada, Oregon, and Washington (USFWS 2008).

Declines in bull trout distribution and abundance are the results of combined effects of habitat degradation and fragmentation, the blockage of migratory corridors, poor water quality, angler harvest and poaching, entrainment into diversion channels and dams, and introduced non-native species. Specific activities that continue to depress bull trout populations and degrade habitat include dams and other diversion structures, forest management practices, livestock grazing, agriculture, road construction and maintenance, mining, recreation use (including OHV use), and urban and rural development (USFWS 2008). Some threats to bull trout are the legacy effects of past land management activities.

Redband Trout: Redband trout once inhabited the entire upper Columbia River system and areas of British Columbia and Northern California (Behnke 1992). Behnke (1992) suggests that redband trout were originally native throughout the interior reaches of the Columbia River Basin, except where their migration was blocked by major falls.

Introductions of hatchery rainbow trout and subsequent hybridization, along with habitat loss and degradation, have largely eliminated pure redband trout populations in most of their original range (Bacon et al. 1980). The redband trout is currently found only in isolated sections of their historical range.

Pacific Lamprey: Historically, Pacific lamprey were thought to be distributed wherever salmon and steelhead occurred. However, recent data indicates that distribution of Pacific lamprey has been reduced in many river drainages. They no longer exist above many dams and other impassable barriers in west coast streams, including many larger rivers throughout Oregon and Washington and above dams in the Snake and Columbia Rivers (USFWS 2008).

Current threats to Pacific lamprey include passage at dams, dewatering and low flows, poisoning, poor water quality, dredging, stream and floodplain degradation, ocean conditions, and predation by non-native fish species (USFWS 2008).

8. WILDLIFE

Wildlife species are directly or indirectly dependent on the condition of vegetative habitat for survival. Important indicators of wildlife habitat health are directly tied to wildlife populations, plant composition, distribution, and structure. For the Decision Area, both rangeland and forested communities contribute to wildlife habitat on public lands.

Animal population management responsibility in the Planning Area has been delegated to ODFW and WDFW. For federally listed species, population management responsibility is normally delegated to the USFWS, but crafted in a collaborative manner involving state agencies, academics, and other recognized technical experts. The USFWS also regulates hunted migratory species such as waterfowl.

a. Current Condition

Wildlife and Wildlife Habitat Relationships

Wildlife typically occupies or avoids habitats in predictable ways based on life history requirements of individual species. For instance, white-headed woodpeckers (*Picoides albolavatus*) are coniferous forest dwellers that tend to be associated with large-diameter ponderosa pine trees. American pronghorn (*Antilocapra americana*) occupy habitats that provide low habitat structure such as low sagebrush communities or open grassland habitats (e.g., disturbed sagebrush steppe). Whereas pronghorn normally avoid dense shrub canopy cover, species such as greater sage-grouse (*Centrocercus urophasianus*) depend upon dense shrub canopy cover for hiding, nesting, thermal shelter, and secure travel. This predictable behavior is known as "wildlife and wildlife habitat relationships" and is often used to analyze impacts from land management practices.

In general, wildlife response to habitat condition is predictable and reasonably well understood for most species. Therefore, knowledge of wildlife and wildlife-habitat relationships based on relevant habitat indicators will allow land managers to make informed predictions about impacts caused by fires, grazing use, development, recreational use, or forest management operations.

Unless specific local data are available, the BLM generally relies upon wildlife habitat relationships to analyze impacts within the Decision Area. Some of the most useful publications on wildlife-habitat relationship[2] for the Decision Area include Maser et al. (1984), Thomas and Maser (1979), and Wisdom et al. (2000).

[2] As new information is published and becomes available, the BLM will attempt to use the most current information for impact analyses and to protect wildlife habitat values on public lands.

In addition to habitat relationships information, the BLM will also appropriately consider other federal, state, or private sector publications pertaining to wildlife management. For instance, the ODFW has published a series of management plans with state objectives for big game, cougar, and black bear. The ODFW has also recently published the Oregon Conservation Strategy (2005) that focuses on "habitat restoration and maintenance to address the needs of game and nongame species - healthy fish and wildlife populations need healthy habitats."

Factors Other Than Habitat Quality That May Limit Wildlife Populations

Factors unrelated to physical habitat qualities might influence wildlife populations. For example, wildlife disease, accidents, predation, drought, severe winter or spring weather events, natural population cycles, and other mechanisms working outside of the Decision and Planning Areas[3] may suppress wildlife populations. Population limitations may occur temporarily (e.g., for a few years) or for very long periods (e.g., decades), even where healthy habitats on public lands are present. All acceptable wildlife population levels are designated through ODFW.

Physical features or wildlife use areas with importance to common and special status wildlife species are included in Table 3-25.

Table 3-25. Key Wildlife Habitat Features for Common and Special Status Vertebrates

Features and use areas	Values provided
1. Important Landforms	
Large canyons (Snake River, Grande Ronde River, Burnt River, Joseph Creek)	Big game summer and winter use, raptor nesting and wintering, chukar partridge, nesting habitat for forest and rangeland wildlife, seclusion from human disturbances
Rock outcrops, cliffs, talus, ledges	Habitat for California and Rocky Mountain bighorn sheep, mountain goat, swallows, raptor nesting, reptiles, bald and golden eagle roosting, and various other raptor species nesting
Caves, crevices	Bat life history needs
Flat to gently sloping landforms within 12 miles or less of greater sage-grouse leks	Sage-grouse nesting habitat (provided that suitable shrub, grass, and forb cover is present)
2. Important Use Areas	
Concentrated use areas (may apply to winter, spring, summer, or fall use)	Various geographic locations that support high numbers of mule deer, bighorn sheep, elk, pronghorn, sage-grouse, raptors, or other important species
Greater sage-grouse leks	1- to 5-acre centers of annual breeding activity; low open habitat structure allowing sage-grouse good visibility
3. Soil Types	
Deep soil inclusions	Dense shrub cover patches often valuable for pygmy rabbit, big game, songbird nesting
Lithic soil types	Low habitat structure with high forb production; often used by sage-grouse for breeding display, post-winter and pre-nesting foraging

[3] Examples may include habitat loss along migration corridors or habitat loss in other states or countries where certain species winter. For example, neotropical migratory bird populations may increase or decrease because of habitat change occurring in Central and South America.

Table 3-25. Key Wildlife Habitat Features for Common and Special Status Vertebrates	
Features and use areas	**Values provided**
	(sage-grouse hens), and winter forage
4. Important Plant Community Composition and Structure	
Shrubland habitats (≥5% shrub canopy cover)	Big sagebrush canopy cover at least 10% and tall enough to be above snow cover; supports sage-grouse winter use Big sagebrush[4] canopy cover ≥ 15% is associated with successful sage-grouse nesting and early brood-rearing, land-bird nesting activity, and big game cover Big sagebrush canopy cover ≥ 25% is associated with pygmy rabbit and sagebrush steppe wildlife occupation.
Grass/forb dominated habitats (<5% shrub canopy cover)	Pronghorn spring-summer-fall, elk winter, long-billed curlew nesting, upland sandpiper nesting
Mixed mountain shrubs such as mountain mahogany, bitterbrush, serviceberry, sumac, etc.	Mid- to tall habitat structure; provides quality cover and food (including fruits) for game and non-game wildlife
Old-growth conifers	Bird nesting, bat roosting, and habitat for woodpeckers, raptors, squirrels, and marten
Post-settlement juniper	Hiding cover patches for mule deer & elk winter range, , raptor and hawk nesting
Snags	Bird and bat occupation, roosting, nesting, feeding
Dead and Down Woody Material	Bird foraging, mammalian denning activity, perching, hiding and thermal cover
Springs and streams	Free drinking water and succulent green forage yearlong
Natural or man-made open water habitat	Migratory bird resting and feeding, free drinking water, bald eagle and osprey foraging
Riparian habitat associated with natural or man-made open water habitat	Waterfowl, shorebird, and songbird nesting
Cottonwood and aspen	Raptor and songbird nesting, neotropical migratory bird stopover during spring-fall migration, big game hiding cover and food

Wildlife-Habitat Relationships

The Decision Area[5] contains the following general wildlife habitat types:

- Approximately 82 percent is sagebrush steppe rangeland. Post-settlement western juniper currently occupies an undetermined amount of rangeland.
- Approximately 13 percent is dry and moist conifer habitat.
- Approximately 4 percent is barren rock outcrop.
- Slightly less than 1 percent is riparian habitat comprised of free-flowing streams, wetlands, or meadows.

[4] Includes Wyoming, basin, and mountain big sagebrush varieties
[5] Figures are derived from information shown under Chapter 2, Section A-6, Vegetative Communities.

Because plant, soil, climate, and landform characteristics are highly variable in the Decision Area, wide varieties of wildlife species are able to meet their life history requirements. Blue Mountain forest habitats alone may support up to 378 species for breeding or migratory uses (Thomas and Maser 1979) and rangelands likely support over 200 more species for breeding or migratory uses (Maser et al. 1984). For this planning document, the BLM is only able to estimate the total number of wildlife species present within the Decision Area based on publications and relevant recorded observations. It is not possible to provide a detailed and accurate profile of all wildlife on public lands because of limited wildlife survey data, wildlife movement, uncertainties associated with scattered land ownership, and limited staff resources.

Existing habitat conditions have been and will continue to be influenced by (1) site potential as determined by soil, climate, and landform, (2) insects, wildfire, and plant disease, and (3) ongoing resource uses and activities such as livestock grazing, mineral extraction, recreational use, or forest management.

Habitat connectivity and the level of fragmentation within the Planning Area have helped shape whether a particular wildlife species could inhabit a particular area. While BLM management actions have helped to protect and minimize fragmentation, subsequently helping to retain habitat connectivity, public lands within the Decision Area are largely fragmented because of land ownership patterns. As a result, the current level of conservation and protection may not be enough for some wildlife species, depending on their habitat needs. For example, the invertebrate habitats needs are on a smaller scale when compared to the big game herd needs, making it potentially easier to protect invertebrates and their habitats compared to wide-ranging wildlife, such as deer or elk.

Human development (public and private land ownership) has threatened many wildlife species by converting much of the natural landscape to agriculture and/or developments (including roads and facilities), which fragments native habitats and limits movements by species. Habitat loss and fragmentation is a rising concern with many conservation agencies (e.g., BLM, USFWS, USFS, ODFW, and WDFW) and urban expansion into wildland areas is expected to continue to affect historic trends. Increasing human populations are resulting in greater resource development pressures and land use intensification. One outcome is the reduction and conversion of natural habitats, which is a pattern widely discussed under landscape fragmentation.

Wildlife population establishment and persistence is lower in fragmented habitats than in well-connected habitats, resulting in more susceptibility to extinction (Wilcox and Murphy 1985; Temple and Cary 1988; Fahrig 2002). In addition to this demographic extinction pressure, wildlife populations are vulnerable to environmental stresses (e.g., fire, extreme weather events, and disease) that have varying magnitudes of spatial covariance (i.e., can inhabit varying habitat landscape classes; Temple and Cary 1988; Fahrig 2002; Conner et al. 2000).

Research has shown that strategically conserving and restoring essential connections between these remaining habitat areas is an effective (and cost-effective) counter-measure to these adverse effects of habitat loss and fragmentation (Connor et al. 2000; Opdam et al. 2002; Lindenmayer and Nix 1993; Simberloff et al. 1992). This process requires identifying and prioritizing those connections that are most essential to maintaining healthy habitat and populations for wildlife species. Habitat connectivity planning can help prevent additional species from being listed, stabilize existing populations, and prevent costly long-term recovery efforts.

General Wildlife Habitat Values

Sagebrush Steppe Rangeland Habitats

General sagebrush steppe rangeland conditions are described Section B.5. Vegetation. This section examines relevant wildlife habitat considerations for such habitats.

The proportion and arrangement of sagebrush shrubland habitat (≥ 5 percent shrub canopy cover) and grassland habitat (< 5 percent shrub canopy cover) is one important index of sagebrush habitat health for wildlife. Of the total rangeland habitat present in the Decision Area, 30 percent (about 103,400 acres) currently exist as grassland and steppe communities, while the remaining 70 percent (or about 243,000 acres) currently exist as shrubland communities. Virtually all existing grassland communities in the Decision Area are actually shrub steppe rangelands that have been altered by disturbance (e.g., wildfire, prescribed fire, or mechanical treatment such as mowing and the seeding of native rangelands). There are no true grasslands per NRCS rangesite definitions in the Decision Area, although Hells Canyon has areas large enough to be classified as grassland.

While healthy rangeland conditions for wildlife include native grassland habitats, most rangelands should exist as complex shrubland communities that support shrubs, grasses, and forbs in order to meet broadly based wildlife habitat needs at landscape scales. Wildlife occupation in sagebrush steppe is typically tied directly to sagebrush canopy cover, which makes having a variety of canopy cover classes for sagebrush cover important (ranging from <5 percent to >35 percent) for a variety of species that utilize this community type. For instance, at about 10 percent shrub canopy cover, non-native seedings have been shown to support a diverse community of grass-dependent and shrub-dependent wildlife species (McAdoo et al. 1989). Successful greater sage-grouse nesting efforts are associated with herbaceous understory cover and about 15 percent or more shrub canopy cover (Connelly et al. 2000).

Sagebrush dependent (or near-dependent) wildlife within the Planning Area include:

- **Birds** – greater sage-grouse, sage sparrow (*Amphispiza belli*), brewer's sparrow (*Spizella breweri*), vesper sparrow (*Pooecetes gramineus*), black-throated sparrow (*Amphispiza bilineata*), lark sparrow (*Chondestes grammacus*), loggerhead shrike (*Lanius*

ludovicianus), green-tailed towhee (*Pipilo chlorurus*), and sage thrasher (*Oreoscoptes montanus*).

- **Mammals** - sagebrush vole[6] (*Lemmiscus curtatus*), pygmy rabbit (*Brachylagus idahoensis*), Townsend's ground squirrel (*Spermophilus townsendii*), pallid bat (*Antrozous pallidus*), and American pronghorn.

Another important shrub species for wildlife habitat is antelope bitterbrush. Bitterbrush is located in localized areas throughout the wintering range for big game within the Decision Area. This shrub provides an excellent and important source of protein for wildlife species.

The sagebrush steppe ecological web of plants and animals is quite complex and, therefore, proper management involves consideration of more than true sagebrush-dependent species. Focusing management attention exclusively upon true sagebrush-dependent wildlife tends to underestimate the relative importance of sagebrush to other wildlife communities. About 100 to 190 species of rangeland wildlife either breed or feed within big sagebrush habitats, depending upon shrub structural character (Maser et al. 1984). Black-tailed jackrabbits (*Lepus californicus*), which are not considered sagebrush obligates, are most often associated with sagebrush shrubland cover and are an important prey species for raptors or other predators. Sagebrush steppe species (other than sage-grouse) were addressed in the Oregon Greater Sage-Grouse Conservation Strategy as follows:

> Several articles have been published that provide descriptions of species associated with shrub steppe communities (Paige and Ritter 1999; Wisdom et al. 2000; Vander Haegen et al. 2001; Rowland et al. 2000; Dobkin and Sauder 2004). These references provided the major source of information for this section, and their lists of species differ because of differing objectives and geographic emphasis. For example, Dobkin and Sauder (2004) list 37 and 24 species of birds and mammals, respectively that are closely associated with shrub steppe communities in the Intermountain West. Wisdom et al. (2000) list 16 species of birds, 10 mammals, and 5 reptiles that are associated with shrub steppe in the Interior Columbia Basin. More specific to this effort, Vander Haegen et al. (2001) identified 103 species of birds, mammals, reptiles, and amphibians that are generally associated with shrub-steppe communities and 49 species that are closely associated with sagebrush communities in Oregon and Washington (Table 21). In addition, they identified 41 species that depend on shrubs, primarily sagebrush, as key elements in their life history where shrubs are used either for nesting, foraging, or key winter habitat (i.e., sagebrush obligates). Therefore, removal of shrub habitats due to fire, mechanical conversion, or invasion of exotic species may result in reduced population sustainability of these species, and can cause dramatic changes in the wildlife community (Hagen 2005).

[6] Sagebrush voles have a strong affinity for sagebrush but may occur in areas lacking sagebrush overstory if grass understories are dense and well developed.

Because sagebrush shrub steppe is an important ecosystem within the Decision Area, conservation of this specific habitat is critical in maintaining healthy wildlife population levels, as defined by the state.

Western Juniper Woodland

Most juniper woodland habitats in the Planning Area are "post-settlement" stands that began to expand in Oregon roughly 130 years ago. In contrast, "old-growth" juniper, which is much older and structurally different from post-settlement juniper, is typically located in isolated rocky areas that have escaped wildfire. Old-growth trees, which may be over 1,000 years old, occupy only a small fraction of the current total juniper distribution.

Post-settlement juniper grows on land that naturally supports sagebrush steppe rangeland. Consequently, the overwhelming majority of juniper within the Decision Area is technically an invasive woody plant growing outside of its normal distribution, and has important implications for wildlife habitat health. Within the Decision Area, south of Durkee and west of Unity are the areas that have the highest densities of western juniper.

Based on Biology, Ecology, and Management of Western Juniper (Miller et al. 2005), post-settlement juniper expansion into rangeland will temporarily increase both wildlife habitat diversity and animal diversity. For instance, juniper may support raptor nesting or big game winter use, and may provide habitat for a variety of common birds not usually found in rangeland such as the chipping sparrow (*Spizella passerina*), northern flicker (*Colaptes auratus*), dark-eyed junco (*Junco hyemalis*), mountain chickadee (*Poecile gambeli*), and Cassin's finch (*Carpodacus cassinii*). Important sagebrush steppe species such as the greater sage-grouse will also use lightly stocked (Stage I) juniper habitat. However, gradually over time (50 to 100 years or more), this beneficial short-term effect actually begins to pose a long-term threat for wildlife. In time, juniper will crowd out sagebrush and other important shrubby plant species, eventually diminishing the structure, extent, and health of rangeland habitat for wildlife. Although grasses and forbs may remain within certain post-settlement juniper locations where soils are deep and productive, shrubs will eventually die out due to juniper competition.

Juniper encroachment has the potential to lead to habitat loss for greater sage-grouse. In addition to the direct loss of habitat over time, juniper can provide elevated hunting perches for raptors, thereby increasing sage-grouse predation. This increased possibility of mortality has been a factor in influencing the decisions of several Oregon BLM districts to reduce juniper on low sagebrush, Wyoming big sagebrush, and mountain big sagebrush habitats near sage-grouse leks.

Dry Conifer and Moist Conifer Habitats

Dry forest types are generally comprised of ponderosa pine in the lower to mid elevations with an increase of Douglas-fir and western larch components in mid to upper elevations. Moist conifer habitats often have a component of drier site species such as ponderosa pine and Douglas-fir. Moist forest habitat within the Decision Area includes grand fir and limited

quantities Engelmann spruce, lodgepole pine, and/or sub-alpine fir. Within the Decision Area, these types of forests are scattered an mostly limited to mountain tops such as Hunt Mountain, Dooley Mountain, Lookout Mountain, and the Grande Ronde Valley.

Proactive fire suppression, improper grazing use, past timber management practices, and certain types of disease and insect attacks have adversely affected dry and moist forest habitat health for wildlife. Although the BLM has made annual efforts to reverse current overstocked forest conditions, funding and workforce constraints can be expected to limit wildlife habitat improvement for species typically associated with open park-like conditions and large diameter trees well into the foreseeable future. Forest habitat management for the benefit of wildlife may not always involve promotion of open park-like conditions. The BLM will also consider other equally important but different values, including conservation of thermal cover, escape cover, and hiding cover.

Riparian Areas (Streams, Wetlands, and Meadows)

Riparian habitats comprise a very small proportion of the Planning Area, but support a disproportionately large number of wildlife habitat requirements. Of the 378 terrestrial species known to occur in the Blue Mountains, 285 are either directly dependent upon riparian zones or utilize them more than other habitats (Thomas and Maser 1979). Of more than 360 terrestrial species known to occur in eastern Oregon's rangelands as a whole, over 280 species are either directly dependent on riparian habitat or utilize it more than other habitats (Thomas and Maser 1979). Riparian areas are scattered throughout the entirety of the Decision Area.

Riparian habitats within the Decision Area are very diverse in terms of plant composition and structure. Some areas almost exclusively support grasses, sedges, and rushes, whereas others may grow a variety of forbs, shrubs, conifers, as well as deciduous trees such as aspen and willow. The latter are normally some of the most valuable habitats because they support a large number of species. In addition to having a diverse plant composition and structure, riparian areas are used as important travel corridors for wildlife. These travel corridors connect one type of desired community to another.

Riparian habitat quality is highly influenced by a number of resource uses and activities, including mining, livestock grazing, forest management, and recreational use. Overall, livestock grazing is the most influential authorized activity on public lands due to its repetitiveness. Properly managed livestock grazing, where timing, intensity, and duration of grazing are controlled, can be compatible with wildlife habitat needs. Repeated late season or yearlong grazing use is not consistent with meeting wildlife habitat needs. Although riparian habitats within the Decision Area are improving, opportunities remain to promote proper functioning riparian areas. As stated under the fisheries section, BLM opportunities will be hampered in some situations where public land ownership is mingled with private in-holdings.

Canyons

The Decision Area supports several spectacular canyon environments with a high degree of landform and plant cover variation, portions of which occur within the Decision Area. These include the Snake, South Fork Walla Walla, Grande Ronde, and Burnt river drainages and Joseph Canyon. Species often associated with these dominating landforms include: California bighorn (*Ovis canadensis californiana*), mountain goat (*Oreamnos americanus*), Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*), Rocky Mountain elk (*Cervus elephus*), mule deer (*Odecoileus hemionus*), blue grouse (*Dendragapus obscurus*), chukar partridge *(Alectoris chukar*), and a host of non-game species (e.g., bat species). In general, the same climate and disturbance factors previously described under rangeland and forest wildlife habitats influence forest and rangeland communities within canyon environments.

Common Wildlife Species

This section provides a series of general species and habitat accounts for relatively common wildlife in the Planning and Decision areas. Refer to Section B.10 for similar treatment of special status wildlife species.

Common Mammal Species

Big Game Animals (mule deer, American pronghorn, Rocky Mountain goat, elk, moose): Table 3-26 provides information on the amount, description, and location of suitable habitat that is available for big game animals, cougar, and black bear in the Decision Area.

Table 3-26. Amount of Big Game Animal, Cougar, and Black Bear Acers and Habitat

Species	BLM Acres	Habitat
Mule deer/white tail Deer	110,870	Most winter concentration areas occur at lower elevations in milder, relatively snow-free locations. Steep topographic relief and deep snowfall in surrounding mountain areas normally forces mule deer and other big game into highly restricted areas.
Pronghorn	121,736	Throughout much of Baker County in valleys, desert foothill habitats, and mountaintops.
Mountain goat	88,544	Optimal mountain goat habitats are located at Hunt Mountain or habitats that contain steep and generally rocky slopes.
Elk	264,184	Area-wide, primarily associated with forested areas and early seral/conifer habitats. Canyon grasslands and breaklands are used for winter/spring range and transitional late fall/winter range.
Moose	N/A	Forest habitats supporting perennial streams and well developed woody riparian habitat.
Bighorn	13,645	Optimal habitat is visually open and contains steep and generally rocky slopes.
Cougar	N/A	Area-wide, associated with big game ungulate seasonal use areas (canyon shrub lands to forested habitats).
Black Bear	N/A	Primarily associated with forested areas. Will utilize canyon breaklands (patterned shrub lands and forested areas) and riparian habitats.

Mule deer are widespread throughout the Planning Area and occur in a variety of habitats. ODFW has designated several "critical" winter ranges in association with the Snake River area and extending to Huntington and Keating Valleys (See Map 3-9). Most winter concentration areas occur at lower elevations in milder, relatively snow-free locations. Steep topographic relief and deep snowfall in surrounding mountain areas normally forces mule deer and other big game into highly restricted areas.

White-tailed deer (*Odocoileus virginianus*), not to be confused with Columbian white-tailed deer (*Odocoileus virginianus leucurus*), are now found from Pendleton to the Grande Ronde River drainage and into the Snake River country. Although white-tailed deer are considered a separate deer species, they are known to interbreed with mule deer, which is a rising concern for maintaining habitat and genetic diversity for mule deer populations.

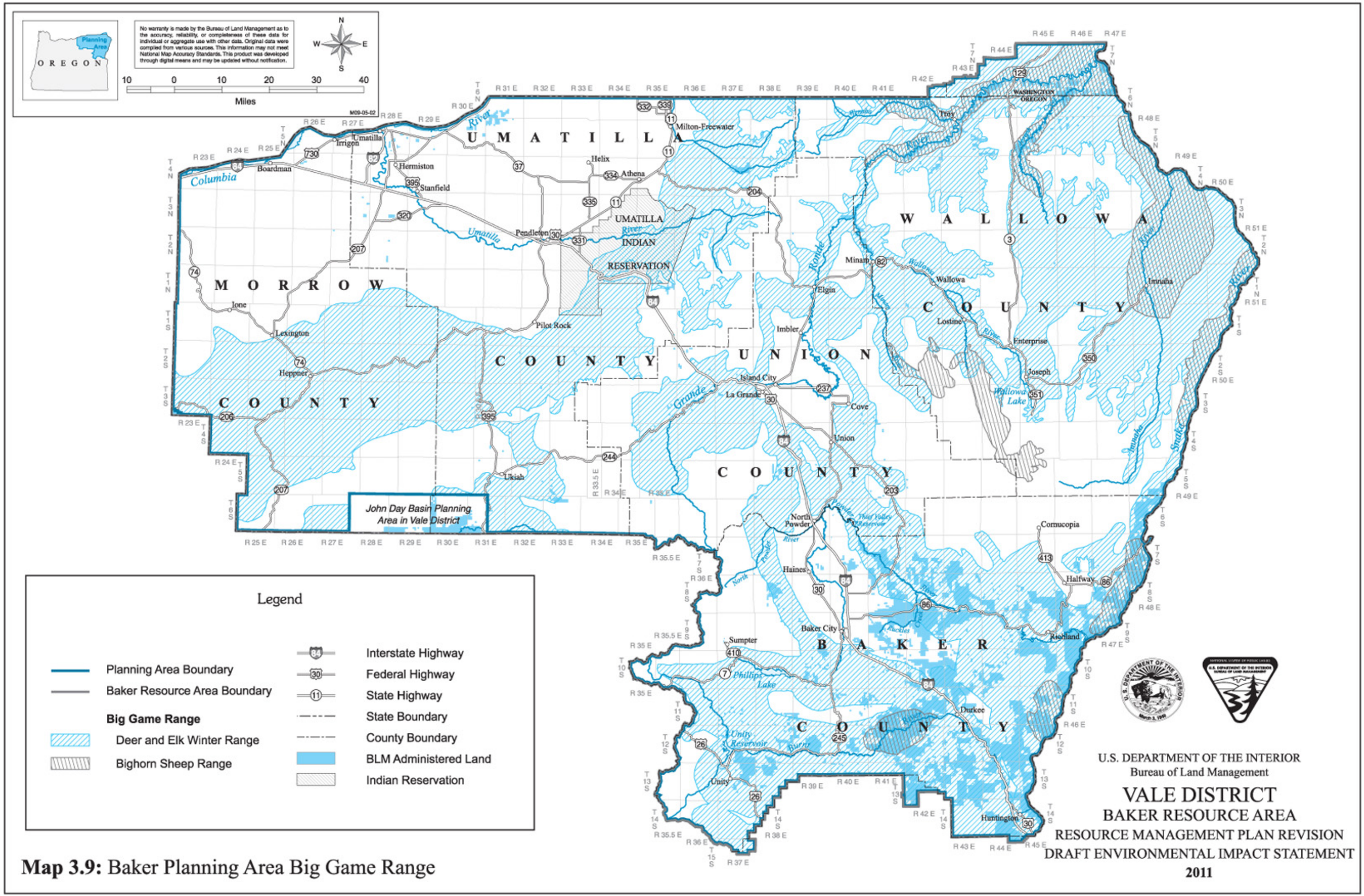
American pronghorn are widely distributed throughout much of Baker County in valleys, desert foothill habitats, and mountaintops.

Rocky Mountain goats are found in high elevations of the Elkhorn Mountains and Hells Canyon of the Snake River drainage, and are currently extending into the Grande Ronde River within the Decision Area. Although mountain goats normally prefer higher elevation habitats, they have extended their range within the Planning Area into marginally suitable locations.

Rocky Mountain elk are yearlong residents, with the largest concentrations occurring at Lookout Mountain, Pedro Mountain, Keating Valley, Hunt Mountain, Sumpter Valley, and Durkee/ Pleasant Valley. Elk are extremely popular big game animals. There are extensive elk populations and big game management units (BGMUs) located throughout the Planning Area where ODFW monitors and manages elk populations for harvesting by hunters. Within the Planning and Decision Areas, Columbia Basin, Northside, Beulah, Sumpter, Starkey, Lookout Mountain, Keating, Pine Creek, Snake River, Imnaha, Minam, Sled Springs, Wenaha, Walla Walla, Mt. Emily, Chesnimnus, and Ukiah are all hunting areas or BGMUs for elk populations.

Moose (*Alces alces*) are recent pioneers in the Planning Area. The entire Eastern Oregon population currently consists of a little more than 30 animals. The Oregon Division of Fish and Wildlife has collared several of these animals and is tracking their movements and breeding success, but limited population and distribution data are available. Areas likely to support moose occupation include forest habitats supporting perennial streams and well developed woody riparian habitat in the Elkhorn Mountains, Blue Mountain Range, Wallowa Mountains, and Grande Ronde River system. Because moose are new to the Planning Area, ODFW has not identified specific management direction for their habitats or populations.

In much of the west, seasonal rangeland provides important foraging opportunities for wild and domestic ungulates during times when forage is limited (Sheehy and Vavra 1996). Food and cover are usually interrelated. In fact, for some wildlife species, the same plant species often provide both food and cover. Healthy and varied vegetative communities are the foundation for big game habitat because they serve as a basis for their caloric needs and act as hiding cover, which can also help determine the location of certain big game animals. Both sagebrush and forest communities meet basic needs for big game.



Map 3.9: Baker Planning Area Big Game Range

Mule deer, elk, and pronghorn browse on substantial amounts of sagebrush. One study showed that deer and elk preferred mountain big sagebrush, followed by Wyoming and basin big sagebrush, with Wyoming big sagebrush constituting 52 percent of mule deer seasonal diet (Wambolt 1996). In the spring, mountain big sagebrush comprises 76 percent of pronghorn diet in the mountain big sagebrush plant community and Wyoming big sagebrush comprises 91 percent of their diet in the Wyoming big sagebrush plant community (Ngugi et al. 1992).

Big game also utilize sagebrush for hiding cover. Optimum security cover for mule deer on shrublands has been defined as vegetation over 24 inches tall and capable of hiding 90 percent of a bedded deer from view at 150 feet or less (Stevens 2004). Vegetation in a mid- to late-seral shrub class potentially provides higher canopy cover for birthing big game species (Ngugi et al. 1992).

California bighorn

While both Rocky Mountain and California bighorns are present within the Decision Area, this section focuses on the latter, although general habitat preferences are applicable to both subspecies. Existing population of California bighorns in the Decision Area are the result of relocations (ODFW 2003) and currently occur within Burnt River canyon.

Optimal bighorn sheep habitat is visually open and contains steep and generally rocky slopes. Two adaptations of bighorn sheep substantially define their basic habitat requirements: (1) their agility on precipitous rocky slopes, which is their primary means of evading predators and (2) their keen eyesight, which detects predators. While their relatively short legs and stocky build allow for agility on rocks, they preclude the speed necessary to outrun predators in less rocky terrain. Consequently, bighorn sheep select open habitats that allow detection of predators at sufficient distances to allow them to reach safety if approached.

While bighorn generally inhabit open areas of rocky slopes, ridges, rim rocks, cliffs, and canyon walls (i.e., their “escape” terrain; Payer and Coblentz 1997), they also inhabit adjacent grasslands or meadows that have few trees (Verts and Carraway 1998). Bighorns avoid habitats such as dense forest communities that can obstruct their vision (Payer and Coblentz 1997). Their primary diet consists of perennial grasses such as bunchgrass, but also includes forbs and shrubs (Wikeem and Pitt 1999; Peek et al. 1979; Demachri 1968).

The distribution of escape terrain regulates the extent to which other habitat components are used. Most bighorn sheep use forage areas within half of a mile of escape terrain and are generally not found further than one mile from such terrain (Verts and Carraway 1998).

Cougar and Black Bear

Cougars (*Puma concolor*) and black bears (*Ursus americanus*) are present throughout the Planning Area in low population densities.

Common Bird Species

Upland Game Bird Species[7]
Chukar partridge are commonly associated with rocky canyons in mountainous terrain. They normally persist as breeding populations given sufficient free water and cheatgrass. Hungarian partridge (*Perdix perdix*), also known as the gray partridge, prefer a habitat of open, grassy areas in a cool, dry climate. Because the Hungarian partridge prefers agricultural lands, this partridge is found in seedings. California quail (*Callipepla californica*) are commonly associated with riparian areas and are moderately abundant on public lands. Mourning doves *(Zenaidura macroura)* are widespread and occupy a wide variety of habitats.

Raptors (predatory birds such as hawks, eagles, owls, and falcons)
Relatively common raptors are found in suitable rangeland, riparian, and forest habitats specific to their needs throughout most of the Planning Area. Common breeding species include red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), golden eagle (*Aquila chrysaetos*), northern harrier (*Circus cyaneus*), great horned owl (*Bubo virginianus*), and long-eared owl *(Asio otus)*. The rough-legged hawk (*Buteo lagopus*) is a relatively common winter resident.

Other less common resident breeders found locally include the northern goshawk (*Accipiter gentiis*), western burrowing owl (*Athene cunicularia*), and ferruginous hawk (*Buteo regalis*). The latter two are briefly described in Section B.10. Special Status Species (Wildlife).

Waterfowl, Wading Birds
Approximately 70 species of birds use wetland or open-water habitats in the Planning Area during breeding and migration if surface water is present. Less than 1 percent of the Decision Area contains water, so habitat for these species is limited on public lands. Consequently, BLM management actions have little impact on overall local populations. Representative breeding species include Canada goose *(Branta canadensis),* cinnamon teal *(Anas crecca),* mallard *(Anas platyrhynchos),* gadwall *(Anas strepera),* and American avocet *(Recurvirostra americana*).

Neotropical Migratory Birds
Neotropical migratory birds are species that breed in North America and winter in Central and South America. For many species, breeding habitat and the string of sanctuaries along their migratory routes are rapidly disappearing due to development, fragmentation, and other factors. Recognizing the importance of conserving migratory birds, Congress passed the Neotropical Migratory Bird Conservation Act (16 USC 703-711) in 2001. The USFWS, with assistance from an international advisory group, manages a grant program to implement the terms of this legislation.

President Bill Clinton signed Executive Order (EO) 13186 in 2001, which directed executive departments and agencies to "take certain actions to further implement the [Migratory Bird

[7] Greater sage-grouse and mountain quail are discussed under Section A-12, Special Status Species (Wildlife).

Treaty] Act," and to "support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions." Furthermore, the BLM also has a memorandum of understanding (MOU) Instruction Memorandum (IM) No. 2008-050 with the USFWS that provides interim guidance to enhance coordination and communication toward meeting the bureau's responsibilities under the Migratory Bird Treaty Act and the EO 13186. This interim management guidance establishes a consistent approach for addressing migratory bird populations and habitats when adopting, revising, or amending land use plans and when making project level implementation decisions. In April of 2010, the BLM and USFWS agreed upon MOU No. WO-230-2010-04, which states that the MOU does not alter either parties' legal obligations under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act and does not authorize the taking of migratory birds.

The purpose of the MOU is to strengthen migratory bird conservation by identifying and implementing strategies that promote conservation and avoid or minimize adverse impacts on migratory birds through enhanced collaboration between the Parties, in coordination with state, tribal, and local governments. The MOU identifies specific activities where cooperation between the Parties will contribute to the conservation of migratory birds and their habitat. BLM agrees with USFWS that migratory birds are important components of biological diversity. Their conservation and management will help sustain ecological integrity, insect control, pollination of wild and cultivated flora, and natural seed dispersal. Migratory Bird conservation will help to meet the growing public demand for conservation education and outdoor recreation, such as wildlife viewing and hunting opportunities. Migratory birds also are important economically and activities focused on birds provide financial benefits to local communities and businesses. Further, the Parties agree that it is important to 1) focus on bird populations, as opposed to individuals or the species, in their entirety; 2) focus on habitat restoration and enhancement where actions can benefit specific ecosystems and migratory birds dependent upon them; and 3) recognize that actions that may provide long-term benefits to migratory bird populations as a whole may also have negative impacts on individual birds.

Neotropical migratory birds are comprised of a wide variety of species, including waterfowl, raptors, songbirds, shorebirds, and other bird groups. Table 3-27 provides a list of neotropical migratory bird species likely to occur within the Decision Area.

Table 3-27. Neotropical Migratory Bird Species Likely To Occur Within The Decision Area

Taxonomic Order	Common and Scientific Names
Gruiformes	Western Grebe (*Aechmophorus occidentalis*)
Ciconiiformes	Great Blue Heron (*Ardea herodias*), Great Egret (*Ardea alba*), Snowy Egret (*Egretta thula*), Cattle Egret (*Bubulcus ibis*), Black-crowned Night-Heron (*Nycticorax nycticorax*), Turkey Vulture (*Cathartes aura*)
Anseriformes	*Mallard* (*Anas platyrhynchos*), *Blue-winged Teal* (*Anas discors*), *Cinnamon Teal* (*Anas cyanoptera*), Northern Shoveler (*Anas clypeata*), Northern Pintail (*Anas acuta}*, Green-winged Teal (*Anas crecca*)

Table 3-27. Neotropical Migratory Bird Species Likely To Occur Within The Decision Area

Taxonomic Order	Common and Scientific Names
Falconiformes	Osprey (*Pandion haliaetus*), Sharp-shinned Hawk (*Accipiter striatus*), Cooper's Hawk (*Accipiter cooperii*), Swainson's Hawk (*Buteo swainsoni*), Red-tailed Hawk (*Buteo jamaicensis*), Ferruginous Hawk (*Buteo regalis*), American Kestrel (*Falco sparverius*), American Prairie Falcon (*Falco mexicanus*), Peregrine Falcon (*Falcoperegrinus anatum*)
Gruiformes	*American Coot* (*Fulica americana*)
Charadriiformes	Killdeer (*Charadrius vociferus*), Mountain Plover (*Charadrius montanus*), American Avocet (*Recurvirostra americana*), Spotted Sandpiper (*Actitis macularia*), Upland Sandpiper (*Bartramia longicauda*), Long-billed Curlew (*Numenius americanus*), Common Snipe (*Gallinago gallinago*), Wilson's Phalarope (*Phalaropus tricolor*)
Columbiformes	Mourning Dove (*Zenaida macroura*)
Cuculiformes	Yellow-billed Cuckoo (*Coccyzus americanus*)
Strigiformes	Burrowing Owl (*Athene cunicularia*), Short-eared Owl (*Asio flammeus*)
Caprimulgiformes	Common Nighthawk (*Chordeiles minor*), Common Poorwill (*Phalaenoptilus nuttallii*)
Apodiformes	Chimney Swift (*Chaetura pelagica*), Vaux's Swift (*Chaetura vauxi*), Rufous Hummingbird (*Selasphorus rufus*)
Coraciiformes	Belted Kingfisher (*Ceryle alcyon*)
Piciformes	Yellow-bellied Sapsucker (*Sphyrapicus varius*), Red-breasted Sapsucker (*Sphyrapicus ruber*)
Passeriformes	Olive-sided Flycatcher (*Contopus cooperi*), Western Wood-Pewee (*Contopus sordidulus*), Gray Flycatcher (*Empidonax wrightii*), Dusky Flycatcher (*Empidonax oberholseri*), Say's Phoebe (*Sayornis saya*), Western Kingbird (*Tyrannus verticalis*), Eastern Kingbird (*Tyrannus tyrannus*) Loggerhead Shrike (*Lanius ludovicianus*), Warbling Vireo (*Vireo gilvus*), Tree Swallow (*Tachycineta bicolor*), Violet-green Swallow (*Tachycineta thalassina*), Northern Rough-winged Swallow (*Stelgidopteryx serripennis*), Bank Swallow (*Riparia riparia*), Cliff Swallow (*Petrochelidon pyrrhonota*), Barn Swallow (*Hirundo rustica*), House Wren (*Troglodytes aedon*), Marsh Wren (*Cistothorus palustris*)
	Mountain Bluebird (*Sialia currucoides*), Townsend's Solitaire (*Myadestes townsendi*), Swainson's American Robin (*Turdus migratorius*), Sage Thrasher (*Oreoscoptes montanus*), Cedar Waxwing (*Bombycilla cedrorum*)
	Yellow Warbler (*Dendroica petechia*), MacGillivray's Warbler (*Oporornis tolmiei*), Common Yellowthroat (*Geothlypis trichas*), Yellow-breasted Chat (*Icteria virens*), Western Tanager (*Piranga ludoviciana*)
	Green-tailed Towhee (*Pipilo chlorurus*), Spotted Towhee (*Pipilo maculatus*), Chipping Sparrow (*Spizella passerina*), Brewer's Sparrow (*Spizella breweri*), Vesper Sparrow (*Pooecetes gramineus*], Lark Sparrow (*Chondestes grammacus*], Savannah Sparrow (*Passerculus sandwichensis*), Lincoln's Sparrow (*Melospiza lincolnii*], White-crowned Sparrow (*Zonotrichia leucophrys*), Black-headed Grosbeak (*Pheucticus melanocephalus*), Grasshopper Sparrow (*Ammodramus savannarum*)
	Red-winged Blackbird (*Agelaius phoeniceus*), Western Meadowlark (*Sturnella neglecta*), *Yellow-headed Blackbird* (*Xanthocephalus xanthocephalus*), Brewer's Blackbird (*Euphagus cyanocephalus*), Brown-headed Cowbird (*Molothrus ater*), Bullock's Oriole (*Icterus bullockii*), American Goldfinch (*Carduelis tristis*), bobolink (*Dolichonyx* oryzivorus)

Invertebrates

The BLM has collected only limited information on the invertebrates located within the Decision Area. However, the invertebrate that has the most notoriety within the Decision Area is the Hells Canyon Mountain Snail, which is discussed separately below. In order to describe other

invertebrate species, the following paragraphs have been excerpted from Interior Columbia Basin Ecosystem Management Project (ICBEMP) science documents (USFS and BLM 1997; 2000; 2003).

Some of common groups of invertebrates in the Planning Area are arthropods, mollusks, earthworms, protozoa, and nematodes. According to species estimates, approximately 15 percent of potential invertebrate species in the Planning Area have been identified (USFS and BLM 2000), with only a few of these having been studied, quantified, or had their ranges mapped. Of the known species, many were introduced accidentally or intentionally. The small size and mobility of invertebrates make them easy to introduce by vehicles, cargo, animals, wind, and other means. Exotic invertebrate species pose an increasing threat to native invertebrates through competition, displacement, and interbreeding, as well as posing a threat to the plants and wildlife that they may attack.

Invertebrates perform key ecological functions in the environment by decomposing wood and litter material that return nutrients to the energy cycle, and by serving as food for other groups of animals. Other key ecological functions of invertebrates include turning over soil and increasing its productivity, pollinating flowers, and dispersing seed. The habitat requirements for invertebrates are generally at a scale so fine that it is difficult to predict how management activities will modify them.

Hells Canyon Mountain Snail

The Hells Canyon mountain snail (*Oreohelix sp*.) is a land snail species that has been documented within the Decision Area (Bjork January 20, 2010, personal communication). Habitat for Hells Canyon mountain snail is found along the Grande Ronde near Lime Hill. The snail is tolerant of dry sage scrub habitat, and is typically found at lower elevations in major stream valleys. Snail colonies are small and tend to occur on north-facing talus slopes or rock piles, especially limestone. Vegetative associations include *Artemisia*, *Balsamorrhiza*, *Celtis*, *Rhus*, *Optunia*, and grasses.

b. Trends

Habitat

Table 3-28 summarizes general wildlife habitat trends and their primary causal agents. Notions about past resource conditions (e.g., since the 1800s) and how they may have changed were summarized with ICBEMP (USFS and BLM 2000) for this document.

Table 3-28. Wildlife Habitat Trends and Reasons for the Expected Trends

Habitat type	Existing trends compared to the past	Primary reasons for trend	Principle wildlife affected
Sagebrush steppe rangeland	Slight to moderate decrease in availability of quality habitat	The cumulative effects of wildfire, prescribed fire, western juniper expansion, invasive annual plant expansion, localized improper grazing use, and rangeland development (to facilitate livestock grazing use) have generally degraded some habitats locally over time. Recreational use activities mainly along major river systems and in suitable rangeland habitats have likely resulted in lowered habitat quality. Increased public use reasonably translates into increased adverse impacts to wildlife habitat.	Elk, mule deer, greater sage-grouse, sagebrush steppe wildlife
Dry conifer and moist conifer	Slightly upward trend for open park and conditions with large diameter conifers.	Overstocked forest stands because of fire control activities, improper grazing use, and insect or plant disease disturbance will slowly diminish over time as a result of BLM healthy forest initiatives.	Species dependent upon mature trees in open park environments will benefit over time (Lewis woodpecker, white-headed woodpecker).
Riparian	Slightly upward	Livestock grazing on public lands and uncontrollable adverse effects from adjoining private lands has reduced riparian habitat quality. Over time, the BLM has been able to modify livestock grazing permit terms and conditions that has improved riparian habitat. This improving trend can be expected to continue at a gradual pace.	Elk, mule deer, songbirds, greater sage-grouse.

Sagebrush Steppe, Forested, and Riparian Habitat

Sagebrush, forested, and riparian habitat values important to wildlife are at risk within the Decision Area due to a variety of factors, including: (1) increased wildfire frequency and intensity, (2) certain fire fuel treatments, (3) juniper encroachment into sagebrush steppe, (4) improper localized grazing management practices, and (5) an ever-expanding presence of invasive annual plants (USFS and BLM 2000). In fact, most sagebrush steppe wildlife species threatened by habitat loss and conversion are dependent upon sagebrush shrub canopy cover for their survival. In contrast, grassland habitats throughout much of the western United States are becoming abundant, mainly due to of fire disturbances. The geographic extent of grassland habitat is increasing annually and fires that encompass hundreds of thousands of acres are not uncommon.

The Decision Area is comprised mainly of sagebrush steppe rangeland and there is no true grassland habitat. Consequently, the loss of grassland habitat as identified by ICBEMP (USFS and BLM 2000) is not relevant to the Decision Area.

According to Oregon conservation strategy for sage-grouse (2005), Baker County is comprised of approximately 82 percent sagebrush and 18 percent disturbed habitats. A variety of canopy

cover classes for sagebrush cover is important (ranging from <5 percent to >35 percent) for a variety of species that utilize this community type.

In the reasonably foreseeable future, current wildlife habitat trends may or may not change substantially relative to mining activity, recreational use, energy development, and other uses. It is very difficult to predict how mining activity may change in response to commodity price changes. Similarly, OHV activity impacts may not be easy to predict, and could conceivably decline over time as energy costs continue to escalate. On the other hand, OHV enthusiasts may use nearby public land areas, such as Virtue Flat, more intensely due to their proximity to Baker City. Under the more intensive use scenario, OHV activities may increase physical habitat losses and diminish wildlife habitat security.

Depending upon the types of mitigation measures that emerge for wind and other energy development, impacts to wildlife habitat may or may not increase substantially. Placement of wind energy development sites and the resulting loss and/or fragmentation of shrub-steppe habitat could adversely affect a number of sage-steppe dependent species.

Healthy forest management initiatives will continue to make progress towards attaining open ponderosa pine park-like forest habitat conditions that are favorable to certain wildlife (Healthy Forest Restoration Act 2003). Historically, open park-like ponderosa pine forests have supported wildlife such as the white-headed woodpecker, Lewis woodpecker, pine grosbeak, and flammulated owl. Progress on this front will probably continue at a slow pace due to of limited staff and funding capabilities.

The combined impacts of wildfires, land uses, and project developments in sagebrush steppe habitats are likely to continue, but the extent to which this is the case is unknown. Global warming and increased atmospheric CO_2 (i.e., climate change), which tends to favor invasive annual species (e.g., cheatgrass), may result in more fire-related impacts to wildlife habitat, regardless of BLM actions.

Common Wildlife Species

The BLM has not speculated about species population trends where the data available are insufficient or inconclusive, which is the case for most species considered. Normally, upward and downward population fluctuations occur over time for most species. Currently, the BLM is not aware of any highly controversial or significant local population trends associated with most common species. Where national or regional population concerns have been raised, they are discussed by species or habitats. This section provides available trend information for the relatively common wildlife in the Planning and Decision areas.

Common Mammal Species

Big Game Animals (mule deer, American pronghorn, Rocky Mountain goat, elk, moose): Mule deer populations have generally remained stable over the long term, although some increases in numbers have occurred over the short term. This trend is based on quantitative information from ODFW, USFWS, and other assorted surveys and data sources. At current population levels, deer populations are below state management objectives (N. Myatt, pers. comm., 2008). Factors such as severe winters, drought, and loss of winter habitat due to wildfire suppression contribute to this trend. The ODFW continuously regulates "harvest" numbers and monitors the deer population to meet management objectives, with the overall goal of increasing herd capacity on public lands.

According to ODFW, the American pronghorn population is currently stable (N. Myatt, pers. comm., 2008). Statewide, pronghorn numbers have been increasing throughout their natural range, which can be attributed to factors such as low hunting pressure, fire impacts, and specifications for proper fence construction that allow freedom of movement.

Rocky Mountain goat populations are reportedly stable or increasing, and have begun to disperse throughout suitable habitats in northeastern Oregon (N. Myatt, pers. comm., 2008).

Elk populations in most BGMUs are reportedly stable or increasing, although some units are below state population management objectives (N. Myatt, pers. comm., 2008). Currently, the BLM works with ODFW in elk population maintenance by providing a location for an elk feeding station(s), located partially on public lands, and by providing input for rangeland projects to enhance elk habitat.

Limited population and distribution data are available for Moose, which makes describing trends difficult.

California bighorn:
Western colonization had a significant influence on bighorn habitat because there were no wildlife protections and/or management for bighorns. While terrain preferred by bighorns during the warm months are not suitable for cattle grazing because of slope steepness (Valentine 1947; Ganskopp and Vavra 1987), the species inhabit less-steep slopes in the winter, including areas consisting of Wyoming big and mountain big sagebrush communities, which are suitable for livestock use. As a result, domestic livestock such as goats and sheep have historically grazed in close proximity to bighorn herds, which spread diseases such as pneumonia, pusreurellosis, lungworm, scabies, and soremouth to residential bighorn herds. This, in turn, led to the California bighorn having been extirpated from Oregon by the mid 1940's (ODFW 2003).

In addition to bighorn extirpation in the 1940's, California bighorn populations are currently limited because of inadequate suitable habitat within the Decision Area. Forage competition due to cattle grazing may at times be a local concern, although bighorns and cattle generally use different landform terrains. On the other hand, new livestock water developments or other

actions that attract additional livestock use within currently occupied bighorn habitat could be an issue.

California bighorn sheep populations have fluctuated locally due to the combined effects of disease and weak genetic diversity. While some local populations appear to be self-sustaining and stable, others may eventually disappear unless ODFW takes supplemental transplant actions (pers. comm., Myatt 2008).

Cougar and Black Bear
Data gathered by ODFW indicate that cougar populations are stable to increasing (N. Myatt, pers. comm., 2008). Limitations placed on cougar harvest methods have allowed their populations to expand. This trend is expected to continue under current management conditions. Black bear populations within the Planning Area are expected to be stable. This trend can also be expected to continue under current management conditions.

A number of wildlife species (American pronghorn, Rocky Mountain goat, moose, black bear, and cougar) will not be brought forward because there is no specific management for these species and ODFW are responsible for tracking population trends. However, BLM can assume that if vegetative communities are rated to be in a healthy condition (i.e. through Standards and Guides), those communities would contribute to wildlife habitats that would support stable to increasing wildlife populations. Please refer to the Vegetation section of the analysis to read more about different vegetation community types.

Wildlife species such as moose, black bear, cougar, and mountain goats will no longer be discussed due to a lack of specific population trend information. However, according to ODFW, it is understood that all populations are stable to increasing. In addition, the BLM can assume that if habitat were in a healthy vegetative state, it would contribute to stable wildlife populations. For analysis of vegetation, please refer to the Section B.5.Vegetative Communities.

<u>Common Bird Species</u>

Upland Game Bird Species
Trend data are not available for upland game bird species in the Decision Area.

Raptors (predatory birds such as hawks, eagles, owls, and falcons)
Trend data are not available for raptor species in the Decision Area.

Waterfowl, Wading Birds
Less than 1 percent of the Decision Area contains water, so habitat for these species is limited on public lands. Consequently, BLM management actions have little impact on overall local trends.

Neotropical Migratory Birds
Trend data are not available for neotropical migratory bird species in the Decision Area.

Invertebrates

Adequate soil structure and chemistry is essential for soil invertebrates to survive. Factors that have caused some invertebrate declines include the use of pesticides, loss of litter and dead plant material, and decline in forbs attributable to grazing, range treatments, fire suppression, and disturbance of springs, wetlands, talus slopes, caves, and other special habitats.

Grazing can reduce grass, seed production, forbs, and dead plant material available to invertebrate herbivores and pollinators. Livestock use has caused localized soil compaction, especially in wet areas, which has affected soil-dwelling species such as earthworms, nematodes, snails, and slugs. Except for special status invertebrate species, the impact on invertebrates from these disturbances is largely unknown. The greatest change to invertebrate habitat in rangelands is the conversion of grasslands and shrublands to other uses.

Invertebrates will not be discussed at this time due to limited information on these species, particularly population trends and location. However, the BLM assumes that if public lands are in a healthy vegetative condition (e.g. rated through processes like Standards and Guides), that invertebrate populations and range distribution would most likely be stable.

Hells Canyon Mountain Snail
Trail and road development, heavy grazing, and development of inholdings, particularly in northern Hells Canyon, represent the major threats to Hells Canyon mountain snails (Frest and Johannes 1995).

9. SPECIAL STATUS SPECIES (PLANTS)

a. Current Condition

Objectives

The objectives of the BLM's Special Status Species Program are:

1. To conserve and/or recover listed species and the ecosystems on which they depend, so that ESA protections are no longer needed for these species.

2. To initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species in order to minimize the likelihood of and need for listing of these species under ESA (BLM 2008a).

The ranking systems for Special Status Plants

The BLM, in cooperation with the USFS, has developed a new interagency special status species list for Oregon/Washington BLM and Region 6 of the USFS (BLM 2008). The interagency list is an attempt to coordinate management for rare species across land ownership boundaries. The

current list, issued in February 2008, used new criteria to determine if species are sensitive and eliminated the categories of Bureau Assessment and Bureau Tracking Species. As a result, some previously listed species have come off the list and the status of some species has changed from sensitive to strategic. There are now three categories of special status species for Oregon/Washington BLM and Region 6 of the USFS:

1. Federally listed species under the ESA.
2. Sensitive species as designated by the State Director or the Regional Forester.
3. Strategic species as designated by the State Director or the Regional Forester (BLM 2007b).

All documented or suspected federal candidate species, state-listed threatened or endangered species, and de-listed federal species are considered sensitive species under the new interagency criteria for special status species (BLM 2007b). Federally listed and sensitive species' habitats are proactively managed to avoid adverse impacts to these species, in accordance with BLM policy. Strategic species are not sensitive species for management purposes (BLM 2007b). Special management efforts do not need to be taken when strategic species are found. Strategic species only need to be recorded when they are located and their locations input into the Geographic Biotic Observations database (GeoBOB), which is the Oregon/Washington BLM database for special status species.

The BLM's sensitive species designation is a proactive attempt to manage for rare species to prevent their future listing under the ESA. Special status plants are routinely surveyed for as part of project clearances for proposed management actions that may affect these species. Mitigation measures are instituted when special status species occur in areas of planned management activities. When the locations of special status plants are found, they are then entered into GeoBOB.

Federally Listed Plant Species

There are no documented occurrences of any federally listed threatened or endangered plant species in the Decision Area. Although Macfarlane's four-o'clock (*Mirabilis macfarlanei*), Spalding's catchfly (*Silene spaldingii*), and Howell's spectacular thelypody (*Thelypodium howellii ssp. spectabilis*) are three federally-listed threatened plant species that are suspected to occur in the Decision Area, based upon the presence of potential suitable habitat on public lands, surveys have not been adequate to determine if these species occur on these lands.

Macfarlane's four-o'clock is an endemic known only from the Snake and Imnaha river canyons of Wallowa County, Oregon, and adjacent Idaho County, Idaho (USFWS 2000b). It occurs on steep grassland habitats from 1,000 to 3,000 feet in elevation. Spalding's catchfly is a regional endemic known from remnant grasslands of eastern Washington and Oregon, northern and central Idaho, northwestern Montana, and southern British Columbia (USFWS 2007b). It occurs on fine wind-deposited soils at elevations from 1,380 to 5,100 feet. Howell's spectacular thelypody is a very narrow endemic known only from the Baker-Powder River Valley in eastern

Oregon. It is currently known from five populations in Baker and Union counties, and one historical location in the Willow Creek Valley in Malheur County (USFWS 2002b). The species occurs on mesic alkaline meadow habitats at elevations ranging from 3,000 to 3,500 feet.

Spaulding's catchfly has the greatest potential of the three species to occur on the Decision Area. It is documented to occur within one air mile of public lands in Joseph Canyon, within 500 feet in the Clear Lake ridge area, and it is reported to occur on Lime Hill in Asotin County in close proximity to public lands (C. Björk pers. comm., 2010). Approximately 1,800 acres of strategic surveys for Spaulding's catchfly have occurred to date on the Decision Area. There remains approximately 13,185 acres of potentially suitable canyon grassland habitat in northern Wallowa and southern Asotin Counties that have not been surveyed for Spaulding's catchfly. This is a broad assessment of potential habitat, which could be refined down to a smaller acreage by incorporating additional site attributes such as soil type, slope, and aspect. There is much lower potential for either Macfarlane's four-o'clock or Howell's spectacular thelypody to occur in the Decision Area, because there is much less suitable habitat. As these species are suspected to occur within the Decision Area, they are still considered and surveyed for in areas of potential habitat.

Sensitive Vascular Plant Species

While most of the Decision Area occurs in northeast Oregon, it also includes lands in southern Asotin County, Washington. The crossing of state lines complicates the management of rare plant species. Rare plant status is based upon their occurrence and abundance within a given state. As a result, a plant may be rare or sensitive in one state, but common with no status in the neighboring state.

There are 26 sensitive vascular plant species documented in the Decision Area (Table 3-29). In addition, there are also 71 sensitive vascular plant species suspected to occur in the Decision Area (see Appendix 3.3). The entire distribution for any special status plant species is unknown because not all public lands in the Decision Area have been surveyed for special status plants.

Table 3-29. Sensitive Vascular Plants Documented in the Decision Area

Scientific Name	Common Name	ISSSSP Status[1]	Decision Area OR[2]	Decision Area WA	OR S Rank[3]	WA S Rank
Arabis crucisetosa	Cross-Haired Rockcress	WA-SEN		D	no status	S1
Astragalus arthurii	Arthur's Milk Vetch	WA-SEN		D	no status	S2
Astragalus asotinensis	Asotin Milk Vetch	WA-SEN		D	no status	S2
Astragalus cusickii var. cusickii	Cusick's Milk Vetch	WA-SEN	D	D	no status	S1?
Bolandra oregana	Oregon Bolandra	WA-SEN	D	D	S3	S2
Botrychium minganense	Mingan's Island Moonwort	OR-SEN	D		S3	S4
Bupleurum americanum	American Thorow Wax	OR-SEN	D		S1	no status
Calochortus macrocarpus var. maculosus	Green-Band Mariposa-Lily	SEN	D	D	S2	S1
Castilleja flava var. rustica	Country Indian Paintbrush	OR-SEN	D		S1	no status
Cheilanthes feei	Fee's Lip-Fern	SEN	S	D	S2	S1

Table 3-29. Sensitive Vascular Plants Documented in the Decision Area

Scientific Name	Common Name	ISSSSP Status[1]	Decision Area OR[2]	Decision Area WA	OR S Rank[3]	WA S Rank
Erigeron engelmannii var. davisii	Engelmann's Daisy	OR-SEN/ WA-STR	S	D	S1	SNR
Hackelia cronquistii	Cronquist's Stickseed	OR-SEN	D		S3	no status
Hackelia hispida var. *hispida*	Rough Stickseed	WA-SEN	D	D	no status	S1
Lomatium rollinsii	Rollins' Lomatium	WA-SEN		D	S3	S2
Lomatium serpentinum	Snake River Canyon Desert Parsley	WA-SEN		D	S4	S2
Lupinus lepidus var. cusickii	Cusick's Lupine	OR-SEN	D		S1	no status
Mimulus cusickii	Cusick's Monkeyflower	WA-SEN		D	SNR	S1
Mimulus patulus	Stalked-Leaved Monkeyflower	WA-SEN		D	S3	S1
Oenothera caespitosa ssp. marginata	Tufted Evening-Primrose	WA-SEN		D	SNR	S1
Petrophytum caespitosum var. *caespitosum*	Rocky Mountain Rockmat	WA-SEN		D	SNR	S1
Pyrrocoma liatriformis (*P. scaberula*)	Palouse Goldenweed	WA-SEN/ OR-STR	S	D	S1?	S2
Pyrrocoma radiata	Snake River Goldenweed	OR-SEN	D		S3	no status
Ribes cereum var. *colubrinum*	Wax Currant	WA-SEN		D	S3	S1
Rubus bartonianus	Bartonberry	OR-SEN	D		S2	no status
Rubus nigerrimus	Northwest Raspberry	WA-SEN		D	no status	S1
Stanleya confertiflora	Biennial Stanleya	OR-SEN	D		S1	no status

1. ISSSSP = Interagency Special Status Sensitive Species Program: SEN = Sensitive in OR and WA; OR-SEN = Sensitive in OR only; WA-SEN = Sensitive in WA only; STR = Strategic in OR and WA; OR-STR = Strategic in OR only; WA-STR = Strategic in WA only.
2. D = Documented occurrence: A species located on land administered by the BLM based on historic or current known sites of a species reported by a credible source for which BLM has knowledge of written, mapped, or specimen documentation of the occurrence. S = Suspected occurrence = Species is not documented on land administered by the BLM but may occur on the unit because: (1) BLM District is considered to be within the species' range and (2) appropriate habitat is present or (3) known occurrence of the species (historic or current) in vicinity such that the species could occur on BLM lands.
3. State Rank characterizes the relative rarity or endangerment within the state of Oregon and Washington. Two codes (e.g. S1S2) represent an intermediate rank.
S1 = Critically imperiled (5 or fewer occurrences).
S2 = Imperiled (6 to 20 occurrences), very vulnerable to extirpation.
S3 = Rare or uncommon (21 to 100 occurrences).
S4 = Not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.
SNR = Not ranked.

Known Distributions, Habitats, and Abundances for Special Status Plants

The greatest concentration of sensitive vascular plants in the Decision Area has been documented in the Rogersburg Area of southeastern Washington, primarily on or near Lime Hill, which is a low elevation area located at the confluence of the Grande Ronde and Snake rivers. Some unique geologic features in this area make it ideal for rare plants. Unlike much of the parent material for the surrounding landscape, Lime Hill consists of a large outcrop of limestone, which

is surrounded by Columbia River basalts. Soils derived from calcareous parent material are uncommon throughout the state of Washington. The area's unique parent material forms unusual calcareous soils, which provide the specialized habitats for the rare plants found there, most of which are regional endemics. The global extent of their distribution is the lower Snake River Canyon and its tributaries.

The following are sensitive plants found in the **Rogersburg Area of southeastern Washington**:

Cross-haired rockcress (*Arabis crucisetosa*) is a regional endemic that occurs in western Idaho, eastern Oregon, and in Asotin County, Washington (Hitchcock and Cronquist 1973 and Washington State Natural Heritage Program [WANHP] 2008a), where it is found mainly on the hills and mountains bordering the Clearwater and the Snake rivers (WANHP 2008a). It is not considered rare in either Oregon or Idaho (Oregon Biodiversity Information Center [ORBIC] 2007; Idaho Conservation Data Center [IDCDC] 2008). The single population (consisting of five polygons) of this species in Washington occurs at Lime Hill on public lands. The habitat at this site is Idaho-fescue/bluebunch wheatgrass dominated canyon grassland, with smooth sumac at lower elevations and scattered ponderosa pine and Douglas-fir at higher elevation. Threats include livestock grazing and competition with non-native plants. In addition, the construction of dams may have reduced lowland habitat around the Snake River.

Arthur's milk vetch (*Astragalus arthurii*) is a regional endemic that occurs in southeast Washington in Asotin County, northeast Oregon in Wallowa County, and central Idaho in Idaho and Nez Perce Counties (WANHP 2008a). It is not considered rare in either Oregon or Idaho (ORBIC 2007; IDCDC 2008). Its distribution is Washington consists of one large scattered population on public lands at Lime Hill, one small population on state lands two miles up Joseph Creek, and four additional scattered populations that occur on private lands northwest of Rogersburg. The species occurs on dry grassy hills and stony meadows over basaltic parent material. The elevation for the species ranges from 800 to 3,700 feet. Dominant species on these grassland sites are bluebunch wheatgrass and Idaho fescue, with little to no shrubs present. Threats include livestock grazing and non-native plants.

Asotin milk vetch (*Astragalus asotinensis*) is a newly described species of milk vetch (Björk and Fishbein 2006) endemic to the lower Snake River canyon in the Lime Hill area of Washington and in Idaho on Craig Mountain. It occurs in grassland communities dominated by bluebunch wheatgrass and Idaho fescue and appears to occur only on limy substrates (i.e., it has not been found on basaltic or other substrates). The elevation range for the species is from 1,200 to 3,000 feet. Threats include competition with non-native plants and livestock grazing.

Cusick's milk vetch (*Astragalus cusickii* var. *cusickii*) is a regional endemic occurring within the Snake River Canyon and its tributaries in Asotin County, Washington; adjacent lands in Idaho; and in Northeastern Oregon (WANHP 2008a). It is not considered rare in either Oregon or Idaho (ORBIC 2007; IDCDC 2008). There are two large population centers for the species in Washington: on private land along Rattlesnake Creek and at Lime Hill, primarily on public lands.

There are smaller populations in Washington located along the West Fork of Mentachee Creek, along the Grande Ronde River, and near the state line between Oregon and Washington in the vicinity of State Line and Bear creeks. This milk vetch is associated with big sagebrush, bluebunch wheatgrass, and Idaho fescue. It occurs on dry grassy or basaltic rocky slopes; and can grow in the crevices or ledges of basalt cliffs and bare soil of roadways. Threats include livestock grazing and non-native plants.

Oregon Bolandra (*Bolandra oregana*) is also a regional endemic species that occurs in the lower Columbia River drainage and along the Snake River in Idaho, Oregon, and Washington (Hitchcock and Cronquist 1973). It is not considered rare in Idaho (IDCDC 2008). Although it is not considered a conservation concern in Oregon, it is tracked by ORBIC as a List 4 species (ORBIC 2007). Oregon bolandra is known from four sites in Asotin County (WANHP 2008a): two in the Lime Hill area (one on state lands and the other on public lands) and two along Buford Creek (on private lands). It typically occurs in moist shaded rocky habitats at low elevations near water or in areas that are at least seasonally moist. Threats include timber harvest, clearing of riparian areas, non-native plants, and herbicide application.

Green-band Mariposa-lily (*Calochortus macrocarpus* var. *maculosus*) occurs in the Columbia River Plateau area of eastern Washington, eastern Oregon, and adjacent Idaho (Hitchcock and Cronquist 1973). In the Decision Area, it occurs along the Grande Ronde River and its tributaries in Oregon and Washington. This lily is considered sensitive in both Washington and Oregon (BLM 2008). It typically occurs on dry plains, rocky slopes, sagebrush steppe, and dry pine forests, usually on basaltic soils at elevations ranging from 1,000 to over 8,000 feet. Threats include indiscriminate herbicide application, livestock grazing, competition with non-native plants and timber harvest.

Fee's lip-fern (*Cheilanthes feei*) is a wide-ranging species whose distribution extends northward in an irregular pattern from the southwestern United States and northern Mexico to Wisconsin, southern Alberta, and southern British Columbia (Hitchcock and Cronquist 1973). It is a peripheral species considered sensitive in both Washington and Oregon (BLM 2008), where it is on the edge of its range. This fern occurs on calcareous cliffs, rocky outcrops, and steep slopes with elevations ranging of 850 to 2,700 feet in Washington and Oregon. There is one current occurrence of Fee's lip-fern in Washington on the cliffs of Lime Hill, and two historical records for the species in Whitman County, Washington (WANHP 2008a). This species is more abundant in Oregon, where it occurs in the Snake and Imnaha River Canyons. Threats include loss of habitat from dam construction, competition with non-native plants, and, possibly, rock climbing.

Engelmann's daisy (*Erigeron engelmannii* var. *davisii*) is a regional endemic species known from tributaries of the Snake River canyon in Idaho and Oregon, as well as lower Joseph Creek in Washington (Hitchcock and Cronquist 1973). This species is sensitive in both Oregon and Washington (BLM 2008), but is not considered rare in Idaho (IDCDC 2008). The habitat for Engelmann's daisy is open slopes, dry ridges, and rocky soils. It often occurs on lithosols. This

species occurs at low to moderate elevations up to 5,500 feet. There is one site for this species in Washington located near Mount Wilson. Engelmann's daisy is more abundant in Oregon where there are scattered populations located in Wallowa County. Noxious weeds are a threat to this species, including yellow star thistle, which is present near the Mount Wilson site.

Rough stickseed (*Hackelia hispida* var. *hispida*) is a regional endemic species known from the Snake River Canyon in Oregon, Idaho, and Washington (WANHP 2008a). It is not considered rare in either Oregon or Idaho (ORBIC 2007; IDCDC 2008). This species occurs on talus slopes, cliffs, and disturbed sites at elevations that range from 1,000 to 2,500 feet. There are two occurrences of this species in Washington: one at Lime Hill and the other along the Grande Ronde River between Box Canyon and Rattlesnake Creek. Heavy grazing could threaten the species throughout the Decision Area, but its habitat of unstable talus may provide it protection (WANHP 2008a).

Rollins' lomatium (*Lomatium rollinsii*) is a regional endemic species occurring in grasslands of the Snake and Salmon River canyons of west central Idaho, northeastern Oregon, and southeastern Washington (WANHP 2008a). It is not considered rare in Idaho (IDCDC 2008). Oregon considers this species as being of conservation concern, but not as currently threatened or endangered (List 4; ORBIC 2007). There are three known populations of Rollin's lomatium in Washington, all of which are in Asotin County (WANHP 2008a). One large scattered population occurs at Rogersburg and Lime Hill extending up the lower Grande Ronde River. The other two populations in Washington occur north of Rogersburg, along the Snake River. There is also one historical record for this species at Fields Spring State Park. Rollin's lomatium occurs in canyon grasslands on steep to gentle slopes. Common associated species include bluebunch wheatgrass, Sandberg's bluegrass, Idaho fescue, and sometimes big sagebrush. Threats include grazing, agricultural development, and non-native plants. Yellow star thistle is present near the Rogersburg population.

Snake River Canyon desert parsley (*Lomatium serpentinum*) is a regional endemic that occurs along the Snake River and its tributaries in southeastern Washington, northeastern Oregon, and western Idaho (WANHP 2008a). Oregon and Idaho do not consider it rare (ORBIC 2007; IDCDC 2008). This species occurs in Asotin, Columbia, and Grant Counties in Washington and is known from historical records in Walla Walla and Whitman Counties (WANHP 2008a). There is one population consisting of three small subpopulations on public lands in Washington. These are located within the floodplain at the base of Lime Hill, growing from clefts in basalt boulders and talus. These sites have little vegetation. The species generally occurs at low elevations in sandy or rocky soils near the edge of a river. Threats include loss of habitat from dams, recreational use by boaters, non-native plants, and road widening.

Cusick's monkey flower (*Mimulus cusickii*) is a wide-ranging species occurring from the southern Warner Mountains of northeastern California north through Nevada to eastern Oregon, southeastern Washington, and Southwestern Idaho (WANHP 2008a). It is peripheral in Washington. This species is not considered rare in either Oregon or Idaho (ORBIC 2007;

IDCDC 2008). There is one population of this species in Washington in the Rogersburg area and one historical record for the species in Klickitat County, Washington (WANHP 2008a). The habitat for Cusick's monkey flower is often steep unstable talus and scree slopes that are sparsely vegetated. These sites are sometimes utilized for rock fill and gravel materials, such as the area just west of the Rogersburg population. Threats include competition with non-native plants and rock and gravel operations.

Stalked-Leaved monkey flower (*Mimulus patulus*) is a regional endemic that occurs in Asotin and Okanogan Counties in Washington, Wallowa County in Oregon, and Nez Perce and Adams counties in Idaho (WANHP 2008a). Oregon considers the species as being of conservation concern but not currently threatened or endangered (List 4; ORBIC 2007). Idaho rates this monkey flower as critically imperiled because of extreme rarity or because some factor of its biology makes it especially vulnerable to extinction (S1; IDCDC 2008). The species is found south of Rogersburg near the base of Lime Hill. It occurs on seasonally moist seepy areas, moist basalt, and in fine gravels overlaying bedrock in small drainages. These areas are sparsely vegetated due to lack of soil. Its elevational range is from 800 to 2,000 feet. Threats include competition with non-native plants and indiscriminate herbicide application.

Tufted evening primrose (*Oenothera caespitosa* ssp. *marginata*) is a wide-ranging species whose distribution extends from eastern Washington south to California and east to Idaho and Colorado (WANHP 2008a). Neither Oregon nor Idaho considers this species rare (ORBIC 2007; IDCDC 2008). It was thought to have been extirpated from Washington until recently rediscovered in Asotin and Klickitat counties (WANHP 2008a). Tufted evening primrose has been documented on public lands in the Rogersburg area and on private and state lands along the west flank of Lime Hill. It occurs on road cuts, dry hills, and rocky slopes both in open and wooded areas. Threats include non-native plants, indiscriminate herbicide application, and road reconstruction or maintenance.

Rocky Mountain rockmat (*Petrophytum caespitosum* var. *caespitosum*) is a wide-ranging species whose distribution extends from southeastern Washington south to California, then east to Idaho, Montana, South Dakota, and south through Utah, Arizona, New Mexico, Colorado, and Texas (Hitchcock and Cronquist 1973). Neither Idaho nor Oregon considers it rare (ORBIC 2007; IDCDC 2008). There is one documented occurrence of the species on public lands in Washington on Lime Hill. Rocky Mountain rockmat occurs on shelves of rock (both granitic and limestone) from the foothills to alpine summits. Threats to the species include rock climbing, mining, and non-native plants.

Palouse goldenweed (*Pyrrocoma liatriformis* now known as *Pyrrocoma scaberula*) is a regional endemic of the Palouse region whose range extends from eastern Washington into northern Idaho and northeastern Oregon (Björk and Darrach 2009). This species is considered strategic in Oregon (BLM 2008), with one record for this species in Wallowa County. Idaho considers it to be imperiled because of rarity or because other factors demonstrably make it highly vulnerable to extinction (IDCDC 2008). Björk and Darrach (2009) found that plants from

the southern portion of the range of *P. liatriformis* differed from plants of the Palouse Prairie region based upon the type of pubescence and the presence of glands. Björk and Darrach (2009) resurrected the name *Pyrrocoma scaberula* for plants that occur within the Snake River canyon grasslands. Gray et al. (2005) also hypothesized that plants referred to as Palouse goldenweed from the Snake River may be a different species from *Pyrrocoma liatriformis*, which is found in the Palouse Prairie area of Idaho and Washington, based on the presence of glands and having scabrous rather than villous leaves. Thus, these plants occurring within the Decision Area probably fit the description for *Pyrrocoma scaberula*.

There are two populations of Palouse goldenweed in Washington. One (consisting of two subpopulations) is located on public lands in the southern portion of Lime Hill, while the other is located on public lands on the banks of the Grande Ronde River just downstream from the mouth of Rattlesnake Creek. The habitat for this species is open grasslands that often contain scattered shrubs and, occasionally, coniferous trees. These sites are typically in good condition with a compliment of native species. Common associated species include bluebunch wheatgrass, Idaho fescue, snowberry, balsamroot, and sometimes ponderosa pine. Threats to this species include loss of habitat to agricultural development, competition with non-native plants, indiscriminate herbicide application, insect depredation, and livestock grazing.

Wax currant (*Ribes cereum* var. *colubrinum*) is a regional endemic of the Snake River Canyon occurring in Asotin County of southeastern Washington, northeastern Oregon, and west central Idaho (WANHP 2008a). Oregon considers the species as being of conservation concern, but not as currently threatened or endangered (List 4; ORBIC 2007). Idaho does not consider this wax currant to be rare (IDCDC 2008). There are three populations of this species in Asotin County. One population is located on public lands on Lime Hill, while the other two locations are on private lands. Wax currant occurs on dry rocky slopes often along streams in tall shrub-forb communities. Common associated species include Wood's rose, ninebark, ocean-spray, mock orange, bluebunch wheatgrass, and sometime ponderosa pine. This species occurs at elevations ranging from 1,000 to 3,500 feet. Threats to wax currant include competition with non-native plants, livestock grazing, loss of habitat from dam construction, and rock quarrying.

Northwest raspberry *(Rubus nigerrimus)* is a local endemic whose global range is limited to the Snake River Canyon in Garfield, Whitman, and Asotin counties of Washington (WANHP 2008a). The historic distribution of this species was presumably the Snake River Canyon and its tributaries. Currently, it is restricted to a 32 km-long area at the northern end of the Snake River drainage, which was not flooded with the construction of the Lower Granite Dam (NatureServe 2010). About 20 small occurrences, most with only 1-30 individuals, are known to exist (NatureServe 2010). There are two locations for this species in Asotin County: one on private land located in Fisher Gulch and the other on public lands on Lime Hill. The Lime Hill site was identified in February 2003, when there were only a few leaves remaining attached to the plants. It is thus suggested that the identification of this species at this site be verified at a time when the species is more easily identifiable. Northwest raspberry typically occurs in shrub or cottonwood dominated riparian areas on the lower portions of steep narrow drainages and sometimes along

the associated moist lower slopes, at elevations ranging from 700 to 2,200 feet. Commonly associated species include Himalayan blackberry, whitebark raspberry, smooth sumac, willow, Wood's rose, black cottonwood, black hawthorn, ocean-spray, and stinging nettle. Threats to this species include loss of habitat from dam construction, road and railroad construction and maintenance, herbicide application, competition with non-native plants, and livestock grazing.

The following are sensitive plants found in **sagebrush steppe habitats**:

Cronquist's stickseed (*Hackelia cronquistii*) is a regional endemic that occurs in the Snake River Plain Ecoregion of Oregon and Idaho (Hitchcock and Cronquist 1973). It is state listed as endangered in Oregon (ORBIC 2007). A single occurrence of the species was identified in the Decision Area in 1997, which is its northernmost occurrence. This species has its greatest abundance in Vale District's Malheur Resource Area. Cronquist's stickseed typically grows on north facing slopes in sandy soils, in draws at elevations ranging from 2,000 feet to 3,200 feet, and in the shade of big sagebrush or Great Basin wildrye. Threats to this species include herbicide application, OHV traffic, agricultural land conversion, livestock grazing, and non-native plants.

Cusick's lupine (*Lupinus lepidus* var. *cusickii*) is a local endemic whose global distribution consists of five occurrences within a 2.5-mile radius area located north of Unity, Oregon (Meinke et al. 1992; Brioch and Morrison 1995). Four of the five occurrences are on public lands. This is the rarest plant species occurring on the Decision Area and is considered endangered in Oregon (ORBIC 2007). Cusick's lupine was originally described as an individual species (*Lupinus cusickii*) in 1887. More recent taxonomic evaluations have found that Cusick's lupine is more similar to *Lupinus lepidus* and is a variety of that species (Brioch and Morrison 1995). Cusick's lupine is restricted to eroding tuffaceous slopes and flats. These are areas of sparse vegetation, which usually have a few junipers, low growing perennials, and occasionally big sagebrush. Threats to this species include OHV traffic, non-native plants, agricultural conversion, and, possibly, herbivory.

The Institute for Applied Ecology (IAE) established permanent monitoring transects for Cusick's lupine at three locations in 1993 (Kaye and Gisler 2003). These permanent transects were located both inside and outside of exclosures to look at the effects of OHV traffic and grazing on the species. Transects were read from 1993 through 1998 and in 2002 and 2009. Kaye and Gisler (2003) and Massatti et al. (2009) found little difference in mean plant density, height, and number of inflorescences between plants within and plants outside of the exclosures, except that most plants were lost on one transect that was established within an existing OHV trail. Plant densities showed high variability from year to year (Kaye and Gisler 2003; Massatti et al. 2009); however, all locations monitored (both fenced and unfenced) experienced a sharp decline in number of plants over the ten-year period from 1993 – 2002 (Kaye and Gisler 2003), with some locations showing a slight rebound in density in 2009 (Massatti et al. 2009).

The purpose of the Denny Flat exclosures was for research that looked at the effects of fencing on Cusick's lupine. The exclosures were not constructed to protect and conserve the entire population at a site. The BLM is now recommending that the exclosures be maintained and kept, so that the transects can be read to provide data on the long-term effects of fencing on this taxa.

Snake River goldenweed *(Pyrrocoma radiata)* is a regional endemic from the Snake River Plain and lower Blue Mountain ecoregions of northeastern Oregon and adjacent southwestern Idaho (Hitchcock and Cronquist 1973). The state of Oregon considers this species endangered (ORBIC 2007). Idaho considers it rare but not threatened, with fewer than 100 occurrences in the state (IDCDC 2008). The species grows on rolling hills, slopes, and ridges in big sagebrush and bunchgrass plant communities at elevations ranging from 2,100 to 6,000 feet. Soils in these areas are somewhat calcareous and often overlay a layer of shale. Threats to this species include alternative (wind) energy development, mineral development, powerline construction, livestock grazing, herbivory (particularly by grasshoppers), OHV traffic, non-native plants, and, possibly, altered fire regimes.

The IAE established ten permanent monitoring transects for Snake River goldenweed in 1991 on public lands in Baker County to determine the effects of livestock grazing on the species (Kaye 2002). Five transects were installed in exclosures and five outside of exclosures. The transects were read from 1991 to 2001. Kaye (2002) found that plants that were unfenced and grazed were significantly smaller and flowered less than plants that were protected from grazing. Populations that were grazed also had a lower population growth rate than ungrazed populations. Kaye (2002) also found significant damage by seed predators who consumed at least 50 percent of the seed produced in five of the ten years of study. Grasshoppers also took a toll on the goldenweed, consuming 60 percent of plant material and lowering seed set in two of the eleven years of study. Both the seed predation and the grasshopper herbivory may have significant long-term impacts on populations of Snake River goldenweed.

The purpose of the Snake River goldenweed exclosures was for research that looked at the effects of fencing on this species. The exclosures were not constructed to protect and conserve the entire population at a site. It has been recommended that the exclosures be maintained and kept, so that the transects can be read to provide data on the long-term effects of fencing on this species.

Biennial Stanleya *(Stanleya confertiflora)* is a regional endemic species that occurs in the Snake River Plain Ecoregion of southeastern Oregon and adjacent southwestern Idaho (Holmgren et al. 2005). Both Oregon and Idaho consider it critically imperiled because of extreme rarity, or because some factor of its biology makes it especially vulnerable to extinction (ORBIC 2007; IDCDC 2008). There are eight occurrences of the species in Idaho located in Gooding, Owyhee, and Washington counties (Mancuso and Colket 2006). The species is more abundant in Oregon where it occurs in Malheur, Harney, and Baker counties (ORBIC 2007). There are ten occurrences of biennial Stanleya on the Decision Area. Eight of these occurrences are clustered around Unity, OR. It is more abundant to the south in the Malheur Resource Area.

Biennial stanleya is a true biennial that has alternating years when adult plants are abundant and years when juvenile plants are abundant (Meinke 2009). Annual abundance appears to be tied to the amount of spring and fall precipitation a site receives (Meinke 2009). The species is restricted to pockets of shrink swell heavy clay soils, which are located within big sagebrush plant communities. These areas of heavy clay soils often have little vegetation, except in areas where medusahead rye has become abundant. The flower color of the species varies in correlation with the geographic range of the species. Plants in the eastern portion of their range are yellow flowered, while plants in the western portion of their range are white flowered (Meinke 2009). Threats to this species include non-native plants, grazing, trampling, OHV traffic, insect herbivory, and altered fire regimes. Grazing damage could be caused by livestock or big game; however, Meinke (2009) hypothesizes that biennial Stanleya may not be palatable to livestock, although grazed off plants are commonly observed (Meinke 2009; and personal observation). Other species of *Stanleya* have been identified as accumulating selenium, which is toxic to livestock (Feist and Parker 2001). It is probable that the greatest impact of livestock grazing on populations of biennial stanleya is damage caused by livestock trampling plants and disrupting the soil seed bank (Meinke 2009).

The following are sensitive plants of **sub-alpine habitats**:

American thorow wax *(Bupleurum americanum)* has a wide distribution occurring from Alaska and the Yukon south to Wyoming, primarily east of the continental divide (Hitchcock and Cronquist 1973). It is not documented to occur in Washington, while it is peripheral in Oregon with five locations statewide. Two occurrences are in Baker County (one on public lands on Hunt Mountain) and three are in Wallowa County. It is not considered rare in Idaho (IDCDC 2008). The species occurs in subalpine areas often growing on talus or thin lithosol soils and is typically associated with open coniferous forests and perennial herbaceous plants. There are few threats to this species due to its remote high elevation habitat, although potential threats include grazing and trampling by wildlife and possibly timber harvest and mining.

Country Indian paintbrush (*Castilleja flava* var. *rustica*) occurs in northeastern Oregon and east across central Idaho (Cronquist et al. 1984). It is not considered rare in Idaho (IDCDC 2008). There are three locations for country Indian paintbrush in Oregon. Two locations are in Baker County and one is in Wallowa County. One of the Baker County locations is on public lands on Hunt Mountain. Country Indian paintbrush occurs on dry mountain big sagebrush and bunchgrass dominated flats and slopes, often in openings within coniferous forests. Threats to country Indian paintbrush include grazing and trampling by wildlife and livestock, as well as timber harvest, mining, and juniper control.

The following are sensitive plants found in **coniferous forests habitats**:

Mingan's Island moonwort (*Botrychium minganense*) is a wide-ranging species occurring from Alaska, throughout boreal Canada, southward into all of the western mountain states to Arizona, and eastward along the northern tier of states as far as the Canadian Atlantic Provinces

and New England (Wagner and Wagner 1993). It is not considered rare in Washington (WANHP 2008b), but is considered rare but not imperiled in both Idaho and Oregon (IDCDC 2008; ORBIC 2007). This moonwort occurs in a wide variety of habitats, ranging from moist roadsides, mesic meadows, and mature, closed-canopy coniferous forests. There is one documented occurrence for this species in the Decision Area located near Cove, Oregon, where a single plant was observed in 2003. Threats to this species include herbicide application, timber harvest, non-native plants, grazing, and road construction and maintenance.

The following are sensitive plants found in **Snake River Canyon grasslands**:

Bartonberry (*Rubus bartonianus*) is a regional endemic known from Hells Canyon in both Oregon and Idaho (Hitchcock and Cronquist 1973). Both Oregon and Idaho consider it imperiled because of rarity, or because other factors demonstrably make it very vulnerable to extinction (ORBIC 2007; IDCDC 2008). Globally, there are 19 occurrences of this species: ten in Oregon and nine in Idaho. One occurrence of bartonberry was located on public lands in 1977 on Copper Creek and other tributaries of the Snake River to the north. This occurrence is within the Homestead ACEC. Seven of the ten sites in Oregon are within the perimeter of the Battle Creek Complex wildfire that burned in 2007. The effects of the fire or fire suppression on the species are unknown. Bartonberry occurs in moist draws, canyons, and on steep, rocky, often talus slopes. These areas often have dense thickets of deciduous shrubs, sometimes with ponderosa pine and Douglas-fir. Threats to this species include competition with non-native species (particularly Himalayan blackberry), browsing, fire, and, possibly, fire suppression activities.

Sensitive Nonvascular Plant Species

No sensitive nonvascular plant species are documented to occur on the Decision Area. Björk (2010a) reports seven species of lichens that are new records for Washington occurring on Lime Hill in Asotin County, Washington. All of these taxa appear to be dependent on calcareous substrates except, perhaps, for *Massalongia mircophylliza*, whose ecology is not well understood (Björk 2010a). It is probable that some of these species will be added to the rare species list for Washington and eventually to the BLM's Washington/Oregon Special Status Species List. The seven species are *Rinodina calcigena*, *Thyrea confusa*, *Agonimia tristicula*, *Fulgensia subbracteata*, *Leptogium schraderi*, *Massalongia mircophylliza*, *Solorina bispora*, and *Toninia tristis var. scholanderi*.

Strategic Plant Species

The BLM manages strategic plant species differently than sensitive plant species. When strategic species are found, a location report is completed and entered into GeoBOB. It is the responsibility of the BLM State Office to compile data on these species and determine additional survey needs (BLM 2007b). Proposed actions requiring NEPA analysis do not have to consider effects to strategic species (BLM 2007b). Special status plant categories (i.e., sensitive and strategic) sometimes differ for a species based upon the state in which it occurs. There are 5

strategic vascular plants documented to occur in the Decision Area and 17 strategic vascular plants suspected to occur in the Decision Area (see Table 3-30).

Table 3-30. Strategic Vascular Plant Species in the Decision Area

Scientific Name	Common Name	ISSSSP Status[1]	Decision Area OR[2]	Decision Area WA
Allium robinsonii	Robinson's Onion	OR-STR	S	
Allium tolmiei var. platyphyllum	Flat-Leaved Tolmie's Onion	OR-STR	D	
Asclepias cryptoceras ssp. davisii	Davis's Milkweed	WA-STR	D	S
Balsamorhiza hookeri var. idahoensis	Hooker's Balsamroot	OR-STR	S	
Balsamorhiza rosea	Rosy Balsamroot	OR-STR	S	
Botrychium hesperium	Western Moonwort	OR-STR/ WA-SEN	S	
Carex atrosquama	Blackened Sedge	WA-STR/ OR-SEN	S	
Carex duriuscula (C. eleocharis)	Spikerush sedge	OR-STR	S	
Carex saxatilis	Russet Sedge	OR-STR	S	
Crepis bakeri ssp. idahoensis	Idaho Hawksbeard	WA-STR		S
Cryptantha thompsonii	Thompson's Cryptantha	OR-STR	S	
Erigeron engelmannii var. davisii	Engelmann's Daisy	WA-STR/ OR-SEN	S	D
Leptodactylon pungens ssp. hazeliae	Hazel's Prickly-Phlox	OR-STR	S	
Lupinus sabinianus	Sabin's Lupine	WA-STR		S
Lupinus sericeus var. asotinensis	Asotin Silky Lupine	WA-STR		S
Luzula orestera	Sierra Woodrush	OR-STR	S	
Mimulus washingtonensis	Washington Monkey-Flower	WA-STR		S
Penstemon deustus var. variabilis	Variable Hot-Rock Penstemon	OR-STR/ WA-SEN	D	S
Pyrrocoma liatriformis (*P. liatriformis*)	Palouse Goldenweed	OR-STR/ WA-SEN	D	D
Senecio sphaerocephalus	Mountain-Marsh Butterweed	OR-STR	S	
Trifolium plumosum ssp. amplifolium	Bigleaf Clover	OR-STR	S	
Utricularia minor	Lesser Bladderwort	WA-STR/ OR-SEN	S	

1. ISSSSP Status: SEN = Sensitive in OR and WA; OR-SEN = Sensitive in OR only; WA-SEN = Sensitive in WA only; STR = Strategic in OR and WA; OR-STR = Strategic in OR only; WA-STR = Strategic in WA only.
2. D = Documented occurrence = A species located on land administered by the BLM or the USFS based on historic or current known sites of a species reported by a credible source for which BLM and the USFS has knowledge of written, mapped, or specimen documentation of the occurrence. S = Suspected occurrence: Species is not documented on BLM or the USFS lands, but may occur on the unit because: (1) BLM District or National Forest is considered to be within the species' range and (2) appropriate habitat is present or (3) known occurrence of the species historic or current) in vicinity such that the species could occur on BLM or USFS land.

In addition, there are seven strategic species of moss, three strategic species of liverworts, one strategic species of lichen, and six strategic species of fungi suspected to occur in the Decision Area. These are listed in Table 3-31.

Table 3-31. Strategic Moss, Liverworts, and Fungus Species in the Decision Area

Scientific Name	Life form	ISSSSP[1] Status	Decision Area OR[2]	Decision Area WA
Aloina bifrons	Moss	OR-STR	D?	S
Anomobryum julaceum	Moss	OR-STR	S	S
Anthelia julacea	Liverwort	OR-STR	S	
Bryoerythrophyllum columbianum	Moss	OR-STR	D?	S

Table 3-31. Strategic Moss, Liverworts, and Fungus Species in the Decision Area

Scientific Name	Life form	ISSSSP[1] Status	Decision Area OR[2]	Decision Area WA
Collema curtisporum	Lichen	OR-STR	S	
Lophozia gillmanii	Liverwort	OR-STR	S	
Mnium blyttii	Moss	OR-STR	S	S
Orthotrichum euryphyllum	Moss	OR-STR	S	S
Orthotrichum holzingeri	Moss	OR-STR	S	S
Orthotrichum pellucidum	Moss	OR-STR	S	
Preissia quadrata	Liverwort	OR-STR	S	
Thelenella muscorum var. octospora	Lichen	OR-STR	S	
Arrhenia lobata	Fungi	OR-STR	S	
Gamundia leucophylla	Fungi	OR-STR	S	
Hydnotrya michaelis	Fungi	OR-STR	S	
Rhizopogon rogersii	Fungi	OR-STR	S	S
Rhizopogon subclavitisporus	Fungi	OR-STR	S	
Sclerotinia veratri	Fungi	OR-STR	S	

1. ISSSSP Status: SEN = Sensitive in OR and WA; OR-SEN = Sensitive in OR only; WA-SEN = Sensitive in WA only; STR = Strategic in OR and WA; OR-STR = Strategic in OR only; WA-STR = Strategic in WA only.
2. D = Documented occurrence = A species located on land administered by the BLM or the USFS based on historic or current known sites of a species reported by a credible source for which BLM and the USFS has knowledge of written, mapped, or specimen documentation of the occurrence. S = Suspected occurrence: Species is not documented on BLM or the USFS lands, but may occur on the unit because: (1) BLM District or National Forest is considered to be within the species' range and (2) appropriate habitat is present or (3) known occurrence of the species historic or current) in vicinity such that the species could occur on BLM or USFS land.

Two of the strategic species of mosses are documented to occur on the Planning Area, and may also occur on the Decision Area. Both *Aloina bifrons* and *Bryoerythrophyllum columbianum* were found near Hat Rock State Park in 1980 and 1981; however, ORBIC shows an imprecise polygon for these locations, which includes an 80-acre parcel of public land. It is unknown if these two rare moss species occur on this parcel of public land. If the species were documented on BLM or USFS lands in Washington or Oregon, they would automatically be converted to sensitive status for that state.

b. Trends

Plants are listed as sensitive due to their limited distribution or abundance within a given state and the presence of threats to the species. The major threats to special status plants that occur on the Decision Area are competition with non-native plants, livestock grazing, insect predation, and altered fire regimes. Other threats include alternative energy development, powerline ROW construction, timber harvest, clearing of riparian areas, herbicide applications, habitat loss from dam construction, rock climbing, agricultural development, road construction and maintenance, rock and gravel operations, mining, and OHV use. Refer to Current Conditions section above for which specific threats affect the populations of each special status plant species documented to occur on the Decision Area.

Special status plants are not evenly or predictably distributed across the landscape. Even special status plants that have specialized habitat needs are often not present within their specialized habitat. Table 3-32 summarizes the number of locations for each special status plant and the BLM acres that these species occupy.

Table 3-32. Number of Locations and Acreages for Special Status Plants in the Decision Area

Species' Common Name (Scientific Name)	Public land acres occupied	Number of current locations on public lands*	Number of historical locations on public lands	Total number of locations on public lands
Cross-haired rockcress (*Arabis crucisetosa*)	638	3	1	4
Arthur's milk vetch (*Astragalus arthurii*)	110	0	2	2
Asotin milk vetch (*Astragalus asotinensis*)	494	1	0	1
Cusick's milk vetch (*Astragalus cusickii* var. *cusickii*)	110	2	1	1
Oregon bolandra (*Bolandra oregano*)	1	1	0	1
Mingan's Island moonwort (*Botrychium minganense*)	.1	1	0	1
American thorow wax *(Bupleurum americanum)*	29	1	0	1
Green-band Mariposa-lily (*Calochortus macrocarpus var. maculosus*)	1,255	14	0	14
Country Indian paintbrush (*Castilleja flava* var. *rustica*)	108	1	0	1
Fee's lip-fern (*Cheilanthes feei*)	339	1	0	1
Engelmann's daisy (*Erigeron engelmannii var. davisii*)	7	1	0	1
Cronquist's stickseed (*Hackelia cronquistii*)	2	1	0	1
Rough stickseed (*Hackelia hispida* var. *hispida*)	46	3	0	3
Rollins' lomatium (*Lomatium rollinsii*)	378	1	1	2
Snake River Canyon desert parsley (*Lomatium serpentinum*)	20	1	2	3
Cusick's lupine (*Lupinus lepidus* var. *cusickii*)	402	4	0	4
Cusick's monkey flower (*Mimulus cusickii*)	1	1	0	1
Stalked-Leaved monkey flower (*Mimulus patulus*)	1	1	0	1
Tufted evening primrose (*Oenothera caespitosa* ssp. *marginata*)	2	2	0	2
Rocky Mountain rockmat (*Petrophyton caespitosum* var. *caespitosum*)	124	1	0	1
Palouse goldenweed (*Pyrrocoma liatriformis*)	46	1	0	1
Snake River goldenweed *(Pyrrocoma radiata)*	2,702	44	8	52
Wax currant (*Ribes cereum* var. *colubrinum*)	22	0	1	1
Bartonberry (*Rubus bartonianus*)	690	0	1	1
Northwest raspberry *(Rubus nigerrimus)*	3	1	0	1
Biennial Stanleya *(Stanleya confertiflora)*	69	10	1	11

*Locations are defined using the GeoBOB definition that plant sites within 300 feet are counted as a single location.

Global climate change may have a significant negative impact on special status plants due to the small number of sites and the relative lack of resiliency many of these plants show in response to changing habitat conditions. The altered future climate may not provide conditions that are favorable for special status plants where these species currently occur. Other plant species may be better adapted to the altered climate at special status plant sites. These invader plant species could outcompete the special status plants at these sites.

Fifty percent of all plant species may go extinct over the next century due to climate change (Hawkins et al. 2008). Endemic plant species with limited distributions and that require specialized habitats will be at greatest risk (Hawkins et al. 2008; Foden et al. 2008). Endemic species tend not to have as high a level of genetic diversity as their more common congeners (Gitzendanner and Soltis 2000; Karron 1987). The reduced genetic diversity often found in endemic plants could make them less able to adapt to changing environments (Barrett and Kohn 1991; Hawkins et al. 2008). The endemic plant species that are documented to occur on the Decision Area, and will likely be adversely impacted by climate change, include Snake River goldenweed, cross-haired rockcress, bartonberry, Asotin milk vetch, Arthur's milk vetch, Cusick's milk vetch, Oregon bolandra, green-band mariposa-lily, Engelmann's daisy, rough stickseed, Snake River Canyon desert parsley, Rollins' lomatium, stalked-leaved monkey flower, palouse goldenweed, wax currant, northwest raspberry, Cronquist's stickseed, Cusick's lupine, and biennial stanleya. Populations of these species are often small and isolated, which can promote susceptibility to loss of genetic diversity through random genetic drift, inbreeding, and genetic bottlenecks (Barrett and Kohn 1991; Ellstrand and Elam 1993; Ouborg et al. 2006; Frankham 1999). Thus, 19 of the 26 documented special status plant species that occur on the Decision Area are endemics that may not be able to adapt to new environmental site conditions caused by global climate change (Foden et al. 2008; Hawkins et al. 2008). The cumulative impacts of climate change on endemic special status plants could lead to increasing rarity for these species.

Four of the special status plant species that occur on the Decision Area (Cronquist's stickseed, Cusick's lupine, Snake River goldenweed, and biennial stanleya) occur in Wyoming big sagebrush habitats. The Wyoming big sagebrush plant community has undergone radical changes in the past 20 years. Sagebrush overstory cover has been lost and the coverage of annual non-native grasses has increased. This, in turn, has increased fine fuel loading and led to an increase in both fire frequency and intensity. It is unknown how these endemic special status plant species will respond to these changes in their habitat. Anecdotal information and personal observation has shown some apparent positive impacts from recent fires at the Snake River goldenweed site at Morgan Creek. The Morgan Creek site was burned in the mid 1990's and again in 2006. The Snake River goldenweed plants at this site initially appeared to respond with increased vigor to the nutrient input and reduced competition from other plants due to the fires. It is unknown if these apparent short-term benefits for Snake River goldenweed will be long-lasting as the site burns more often in the future.

The BLM has very little quantitative monitoring data of sensitive plants in the Decision Area to use in order to determine trends for the species discussed above. Some plant species such as the Asotin milk vetch are newly described, and other species found in the Rogersburg area were initially documented in the Decision Area only in the last few years. The only quantitative monitoring of the sensitive plants that has occurred in the Decision Area are Meinke's monitoring of biennial stanleya (Meinke 2009), and the IAE's study of Snake River goldenweed (Kaye 2002) and of Cusick's lupine (Kaye and Gisler 2003; Massatti et al. 2009). These studies looked at individual populations at specific locations and their results may or may not be

applicable for all the species' populations on the Decision Area. The intent of these studies has been to determine the life history for biennial stanleya, the effects of livestock grazing on Snake River goldenweed, and the effects OHV traffic and livestock grazing on Cusick's lupine. They were not designed to provide overall population trends for these species; however, they do offer some insight into trends for local populations of these sensitive species.

Meinke (2009) included one stanleya site (at Unity) in the Decision Area in his study that included a total of six sites on the Vale and Burns Districts of the BLM and found that adequate spring precipitation was important for both seedling establishment and the maturation and flowering of mature plants. This study also anecdotally noted damage to plants from cattle due to grazing and trampling, with damage caused by grazing being more common at the Unity site than the other sites outside the Decision Area.

The IAE's study of the Cusick's lupine (Kaye and Gisler, 2003; Massatti et al. 2009) looked at differences in plant performance within and outside of exclosures at Denny Flat and found little difference in plant size and population dynamics. This study did note an overall decline in all populations of Cusick's lupine from 1998 to 2002, except for a population at Elm's Reservoir that increased slightly.

The study of Snake River goldenweed found that grazed plants were smaller, produced fewer flowers, and had lower population growth (Kaye 2002). Grasshoppers and seed predators were also noted as causing extensive damage to the plants.

The extent of sensitive plant species distribution in the Decision Area is not entirely known, which makes determining trends difficult, if not impossible. Not all suitable habitats have been surveyed, new species have been recently described, and species that were only suspected to occur in the Decision Area have been recently discovered. For example, four new locations of Snake River goldenweed and eight new location of biennial stanleya were found in the Decision Area in the last three years, while no new locations for Cusick's lupine in the Decision Area have been found in the last fifteen years.

The BLM does not have the quantitative monitoring data establishing population trends from which to predict the stability and persistence of sensitive plant species that occur in the Decision Area. Low-elevation sites, including those around Rogersburg, sagebrush steppe habitats, and canyon grasslands are at risk from wildfire and increasing proliferation of non-native weedy plants. In general, low-elevation sagebrush steppe is very susceptible to conversion to annual weedy plants following wildfires. Biennial stanleya, Cusick's lupine, Snake River goldenweed, and Cronquist's stickseed all occur in sagebrush steppe habitats. This habitat and the plant species that inhabit it are threatened by wildfire, which reduces native plant cover and improves habitat for non-native weedy plant species. It is probable that Stanleya, Cusick's lupine, Snake River goldenweed, and Cronquist's stickseed would not be able to compete as well as non-native plants at capturing and utilizing resources such as water and nutrients. In addition, weedy non-native plant species would decrease the wildfire return interval and increase the subsequent fire

intensity. It is unknown how well these sensitive plants would cope with these more frequent and higher intensity wildfires. It could be hypothesized that since these plants did not evolve under these increased fire frequencies and intensities, they would not perform well under these changed conditions.

10. SPECIAL STATUS SPECIES (WILDLIFE)

a. Current Conditions

Thirty special status wildlife (i.e., mammals, birds, and amphibians) species are suspected or known to occur in the Decision Area. Table 3-33 is a list of these special status wildlife species and their current status according to state and federal agencies, including ODFW, WDFW, USFWS, and BLM. The list of special status species in Table 3-33 will likely change over time as new data becomes available. List changes may include (1) addition of new species, (2) delisting species (removal from special status), or (3) elevating species to federal or state threatened or endangered status.

Table 3-33. Special Status Species (Wildlife) Occurrence Within the Planning and Decision Areas

Animal Names		Habitat Information		Current State and Federal Management Status				Occurrence Status	
Common Names	**Scientific Names**	**Habitat Association**	**Suitable Habitat Present on Public Land?**	**USFWS**	**BLM**	**ODFW**	**WDFW**	**Planning Area**	**Decision Area**
Mammals									
Pygmy rabbit	*Brachylagus idahoensis*	Sagebrush steppe	Yes	SC	S	SC	S	SUS	SUS
Gray wolf	*Canis lupus*	Remote, generally forested habitats	Yes	E	S	E	E	DOC	DOC
Townsend's Big-eared bat	*Corynorhinus townsendii*	Desert scrub, coniferous forests, caves, abandoned mines	Yes	SC	S	S	S	SUS	SUS
California wolverine*	*Gulo gulo luteus*	Coniferous forest	Limited	SC	S	SC		DOC	Unlikely
Black-tailed jackrabbit*	*Lepus caifornicus*	Sagebrush steppe	Yes		S	S	S	DOC	DOC
White-tailed jackrabbit	*Lepus townsendii*	Sagebrush steppe, riparian	Yes	SC	S	S	S	DOC	SUS
Canada lynx*	*Lynx Canadensis*	Coniferous forest, canyons	Limited	LT	-	-	S	DOC	Unlikely
Fisher*	*Martes pennanti*	Coniferous forest	Limited	C	S	SC	S	SUS	SUS
Fringed myotis	*Myotis thysanodes*	Low desert scrub habitats to high elevation coniferous forest	Yes	SC	S	S	S	SUS	SUS
Preble's shrew	*Sorex preblei*	Sagebrush steppe	Yes	SC	S	-	S	SUS	SUS
Washington ground squirrel	*Urocitellus washingtoni*	Sagebrush steppe	Limited	C	C	SC	C	DOC	DOC
Birds									
Tricolored blackbird *	*Agelaius tricolor*	Wetlands	Limited	SC	S	-	-	DOC	SUS
Grasshopper sparrow*	*Ammodramus savannarum*	Sagebrush steppe	Limited	SC	S	S	-	SUS	SUS
Western burrowing owl	*Athene cunicularia hypugea*	Sagebrush steppe	Yes	SC	S	S	S	DOC	DOC
Upland sandpiper*	*Bartamia longicauda*	Montane meadows in coniferous forest	Limited	SC	S	S	-	DOC	SUS
Ferruginous hawk	*Buteo regalis*	Sagebrush steppe and juniper	Yes	SC	S/WA	S	S	DOC	DOC
Greater sage-grouse	*Centrocerus urophasianus*	Sagebrush steppe, riparian and wetland	Yes	C	C	S	S	DOC	DOC
Yellow-billed cuckoo*	*Coccyzus americanus*	Riparian and wetland	Limited	SC	S	S	S	SUS	Unlikely
Bobolink*	*Dolichonyx oryzivorus*	Sagebrush steppe, riparian and wetland	Limited		S	S	-	SUS	Unlikely

Table 3-33. Special Status Species (Wildlife) Occurrence Within the Planning and Decision Areas

Animal Names		Habitat Information		Current State and Federal Management Status				Occurrence Status	
Common Names	**Scientific Names**	**Habitat Association**	**Suitable Habitat Present on Public Land?**	**USFWS**	**BLM**	**ODFW**	**WDFW**	**Planning Area**	**Decision Area**
American peregrine falcon*	*Falcoperegrinus anatum*	Sagebrush steppe and grasslands	Limited	SC	S	S	S	SUS	SUS
Bald eagle	*Haliaeetus leucocephalus*	Riparian, canyons, conifer forest	Yes	SC	S	S	S	DOC	DOC
Golden eagle	*Aquila chrysaetos*	Riparian, canyons, conifer forest, sagebrush steppe and grasslands	Yes	SC	S	-	S	DOC	DOC
Harlequin duck*	*Histrionicus histrionicus*	Mountain streams	Limited	SC	S	SC	PS	DOC	Unlikely
Lewis's woodpecker	*Melanerpes lewis*	Ponderosa pine	Limited	SC	S	S	S	DOC	DOC
Mountain quail*	*Oreortyx pictus*	Riparian	Yes	SC	S	S		DOC	SUS
White-headed woodpecker	*Picoides albolavatus*	Ponderosa pine	Yes	SC	S	S	S	DOC	DOC
Columbian sharp-tailed grouse*	*Tympanuchus phaslanellus*	Sagebrush steppe and grasslands	Limited	SC	S	S	S	DOC	SUS
Reptiles									
Sagebrush lizard*	*Sceloporus graciosus*	Sagebrush steppe, riparian and wetland	Yes	-	S	S	S	SUS	SUS
Amphibians									
Woodhouse toad*	*Bufo woodhousii*	Sagebrush steppe, riparian and wetland	Limited	-	S	-	S	SUS	SUS
Columbia spotted frog	*Rana luteiventris*	Aquatic, riparian	Yes	C	S	S	S	DOC	DOC
Northern leopard frog*	*Rana pipiens*	Riparian and wetland	Limited	SC	S	S	S	SUS	SUS

*These species are not addressed in Chapter 4 due to due to limited, marginal, transient, and/or migratory habitat within the Decision Area.
Current state and federal management status: USFWS–LE= federally listed Endangered, **LT**=federally listed Threatened, **SC**=species of concern, **C**= candidate for LT or LE; **ODFW – E**=Endangered, **SC**= species of concern; **WDFW – PS**= priority species; **Occurrence Status (per OR/WA BLM special status species designations): Documented (DOC)** = species is present based on records and/or observations; **Suspected (SUS)** = species could conceivably occur on suitable public land, but no information is available to verify breeding, migration, or transitory use of public land.

As stated under Section B.5.Vegetative Communities, about 9 percent of the Decision Area consists of forested land. Consequently, Decision Area forested habitats would likely supply a small fraction of the total area needed to sustain certain wildlife including forest dwelling species. For example, if gray wolf were to establish resident populations within the Decision Area, they would require large, continuous tracts of land. As a result, the Decision Area will probably play only a minimal role in the conservation of wide-ranging species; however, playing a minor role in conservation does not mean the forested habitats in the Decision Area have low value for future wildlife considerations. On the contrary, even relatively small, forested patches may support valuable habitat for a variety of special status species. These forested areas also provide connectivity islands, travel corridors, and/or transient habitat for variety of species.

The remaining 91 percent of the Decision Area supports sagebrush steppe habitats, canyons, rocky terrain, and riparian areas. Depending on how wide-ranging the species (e.g., black-tailed jackrabbit and Western burrowing owl are wide-ranging, while Preble's shrew and Washington ground squirrel are more localized), the geographic extent and condition of these habitats could either beneficially or adversely impact the special status wildlife species that depend on them.

Habitat connectivity and the level of fragmentation within the Planning Area have helped shape whether a particular wildlife species could inhabit a particular area. The BLM is attempting to protect wildlife habitats by minimizing fragmentation and increasing habitat connectivity. However, because of the high level of fragmentation of public lands within the Decision Area due to land ownership patterns, conservation and protection efforts by BLM (both historically and presently) may not be enough for some wildlife species, depending on their specific habitat needs.

Strategically conserving and restoring essential connections between habitat areas is an effective counter-measure to the adverse effects of habitat loss and fragmentation (Opdam et al. 2002; Lindenmayer and Nix 1993; Simberloff et al. 1992). This process requires identifying and prioritizing those connections that are most essential to maintaining healthy habitat and populations for wildlife species. Planning to maintain or restore habitat connectivity can help prevent additional species from being listed, stabilize existing populations, and prevent costly long-term recovery efforts.

This section provides an overview of special status wildlife species, including information about their populations and habitat requirements.

Pygmy Rabbit (Brachylagus idahoensis)

Pygmy rabbits have not been documented within the Decision Area, but may be present within suitable Wyoming big, basin, and mountain big sagebrush habitats. As a sagebrush obligate species, they are dependent upon forage and cover provided by big sagebrush species (Thines et al. 2004). Wyoming sagebrush is a critical component of pygmy rabbit habitat and constitutes 82 to 99 percent of their winter diet and 10 to 50 percent of their summer diet. Sagebrush is not only needed for caloric reasons, but for hiding cover, with dense sagebrush canopy cover 25

percent or more (i.e., mid- to late-seral shrub class) providing the higher canopy cover preferred by the species (Thines et al. 2004). Soil type is also a major factor in habitat suitability. Soils need to be of the proper depth and texture to excavate for burrows. Burrows typically occur in loose coarse, silty, and fine-loamy soil types derived from loess or glacial parent material. Burrows usually extend to no more than 3 feet in depth (WDFW 2003). Some areas suitable for pygmy rabbit habitat within the Decision Area include Mormon Basin, Pritchard Creek, and Keating Valley.

Gray Wolf (Canis lupus)

Wolves initially experienced population declines due mainly to conflicts with humans. This included human settlement, direct conflict with livestock, and lack of understanding of wolf ecology and habits and the subsequent eradication programs. The primary threat to wolves today is mortality from shooting and vehicle collisions (Wisdom et al. 2000).

Studies have shown that the relationship between landscape topography and road density is a strong predictor of suitable wolf habitat (Thiel 1985). In areas of low human disturbance, wolves use roads opportunistically for movement. Wolves do not require expansive wilderness or wilderness-like areas to survive; however, they do require adequate prey base and minimal human exposure to thrive (Peterson and Page 1988; Mech 1989; USFWS 1987). Road networks directly contribute to disturbance, fragmentation, and habitat loss because roads give access to large expanses of public lands. Human conflict still exists, most notably over livestock depredations and the associated economic losses. Concern over wolf depredation on big game also exists.

In the Planning Area, occupied gray wolf habitat is currently limited to forested locations and sagebrush steppe communities along the Snake River. Throughout April and May 2009, wolf activity was confirmed within the Keating Valley area of Baker County and near Imnaha Canyon in Union Wallowa County. Another wolf pack that included both adults and pups was confirmed in northern Union County in July 2008, which was the first evidence of multiple wolves and wolf reproduction in Oregon since wolves were extirpated from the state in the mid 1940s. No recorded denning or rendezvous sites have been documented within the Decision Area, but wolves are known to utilize some of these lands.

Townsend's Big-eared Bat (Corynorhinus townsendii)

Townsend's big-eared bats have been reported in a wide variety of habitat types ranging from sea level to 3,300 meters. Habitat associations include coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Distribution is strongly correlated with the availability of caves and cave-like roosting habitat, including abandoned mines. Population centers occur in areas dominated by exposed, cavity, or caverniculous forming rock and/or historic mining districts. The species has also been reported to utilize buildings, bridges, rock crevices, and hollow trees as roost sites. Townsend's big-eared bats forage in edge habitats along streams, adjacent to and within a variety

of wooded habitats. These habitats are ideal because the species often travels large distances while foraging, including movements of over 150 kilometers during a single evening. Seasonal movement patterns are not well understood, although there is some indication of local migration, perhaps along an altitudinal gradient. They also demonstrate strong roost site fidelity (Gruver et al. 2006). Hibernation sites in caves are often near entrances in well-ventilated areas. They hibernate in clusters of a few to more than 100 individuals.

Individual Townsend's big-eared bats have been documented throughout the Decision Area roosting in mines and abandoned buildings and foraging near Burnt River and other riparian habitats associated with sagebrush steppe, juniper woodlands, and coniferous forests. Suitable roosting and maternity habitats are present within caves, mines, abandoned buildings, rock crevices and snags within the Decision Area. Suitable foraging habitat occurs throughout the Decision Area. Deep canyons and riverine habitats provide corridors between foraging and roosting habitats.

California Wolverine (Gulo gulo luteus)

Wolverines are rare throughout all of Oregon, Washington, Idaho, and California (Yocom 1974). Recent sightings, tracks, and road kills document their continued presence at low densities within these states (Kagen et al. 2001). Records for eastern Oregon include a partial skeleton and tufts of fur found near Canyon Mountain, Grant County (1992), tracks and a possible denning site discovered in the Strawberry Mountain Wilderness (1997), and tracks that were noted in the Monument Rock Wilderness (1997). While wolverines have not been formerly documented within the Decision Area, there are limited areas of transient habitat.

Wolverines inhabit dense coniferous forests and use open sub-alpine forests up to and beyond the timberline. Typically, they use high elevation alpine wilderness areas in the summer and montane forest habitats in the winter (Copeland 1996). The species is associated with rocky outcrops, steep mountainous areas, and transition zones between primary cover types. Forested riparian zones at upper elevations are likely to be important forage habitats for these furbearers and provide relatively safe travel corridors that allow animals to move within and between watersheds. Because habitat is limited and would be used for transitory purposes, it is highly unlikely wolverines would be present within the Decision Area.

Black-tailed Jackrabbit (Lepus californicus)

Effecting surrounding habitats, as well as serving as a prey species for many animals, jackrabbits serve as an important ecological species within the food web (Feldhamer and Champman 2003). The black-tailed jackrabbit is the most common rabbit in Western North America (Flinders and Chapman 2003). It is distinguishable from all other hares by a thick mid-dorsal stripe that starts at the tail and extends to its back. Black-tailed jackrabbits feed on ripe seeds, grasses, forbs, and woody vegetation, depending on the season and food availability (Flinders and Chapman 2003). Although the black-tailed jackrabbit is closely associated with sagebrush shrub-steppe and high,

cold deserts, it occupies a variety of community types and vegetation successions and is common throughout the Decision Area.

White-tailed Jackrabbit (Lepus townsendii)

White-tailed jackrabbits are uncommon to rare year-round residents of eastern Oregon and Washington. The species has been documented within Decision Area around Huntington, Baker, and Keating Valley. In contrast to black-tailed jackrabbits that normally occupy lower elevation basin and Wyoming big sagebrush habitats, white-tailed jackrabbits generally occur in moister, higher elevation sagebrush steppe, mainly in low sagebrush and mountain big sagebrush complexes (McAdoo and Young 1980). White-tailed jackrabbits feed on bunchgrasses and forbs in spring and summer and on stems of woody plants in fall and winter (McAdoo and Young 1980).

White-tailed jackrabbits generally occur in higher elevation sagebrush steppe, usually composed of mountain big sagebrush (McAdoo and Young 1980). Based on an 88 percent accuracy assessment, there are 136,539 potential acres and 83,562 current acres of the mountain big sagebrush vegetative community in the Decision Area (refer to Table 3-13). This means that 52,977 acres (or 39 percent of the Decision Area) could potentially consist of mountain big sagebrush, but has been converted into some other vegetative type. Such conversion is primarily attributed to juniper encroachment, which threatens white-tailed jackrabbit habitat.

Canada Lynx (Lynx canadensis)

Hares comprise 33 to 100 percent of the lynx' diet and a hare density of greater than or equal to 1 hare per 5 acres is likely required for lynx persistence (Ruggiero et al. 1994; Ruggiero 2000). Lynx foraging habitat consists of mixed conifer stands characterized by a dense, multi-layered understory that maximizes hare browse at both ground level and at varying snow depths (Ruediger 2000; Ruggiero et al.1999). Lodgepole pine is often a major component of this habitat. Lodgepole forest types are limited in the Decision Area, and densities are inadequate for supporting lynx habitat. The only potential habitat in the Decision Area is Hunt Mountain; however, there have been no confirmed sightings of lynx within the Decision Area. The Blue Mountains represent the southern extent of lynx distribution, which explains the historical and current rarity of this species in the Planning Area (Brittell et al. 1989).

Fisher (Martes pennanti)

The fisher is a solitary, territorial carnivore that preys upon birds and small mammals (Powell 1993). They inhabit mesic, coniferous forest between 3,500 to 6,000 feet in elevation, although habitat preference changes with season, age, and sex (Marshall 1996). Fishers avoid open ground (Ruggiero et al. 1994; Powell 1993) and prefer structurally complex areas with multiple canopy layers, including understory shrubs and large amounts of woody debris (Sampson 1998; Marshall 1996; Powell 1993). Ruggiero et al. (1994) concluded that riparian zones, high elevation old-growth grand fir, and subalpine fir stands are important habitat components

(Powell 1993). Fishers use a variety of resting sites such as hollow logs, rock piles, and snow dens, but the maternal den is usually in a tree (Weir and Harestad et al. 2003).

There are no known resident fisher populations within the Planning Area, and suitable habitat in the Decision Area is highly limited. Fishers were reintroduced onto USFS lands in the 1970s in the Minam and Eagle Creek drainages near Halfway, Oregon. The reintroduction effort was unsuccessful and the species never became established as a self-sustaining population. Although there is documented evidence that at least one fisher existed on the Wallowa-Whitman National Forest, there is no known or confirmed reproducing population. It is highly unlikely that fishers are currently present within the Planning or Decision Area.

Fringed Myotis (Myotis thysanodes)

Distribution of fringed myotis is patchy. It appears to be most common in drier woodlands (e.g., oak, pinyon-juniper, ponderosa pine), but can be found in a wide variety of habitats including desert scrub, mesic coniferous forest, grassland, and sage-grass steppe. These bats roost in caves, mines, rock crevices, large snags, buildings under bridges, and other protected sites. Maternity roosts are colonial, with colonies ranging from 10 to 2,000 individuals, and occur in caves, mines, and sometimes buildings. Fringed myotis in riparian areas tend to be more active over intermittent streams with wider channels. They forage within forest interior and along forest edges near riparian areas, usually at high elevations (between 1,200 and 2,100 m). Throughout most of its range, the species is highly migratory; however, almost nothing is known regarding winter movements in Oregon. Fringed myotis return to summer roosts in spring and leave in late summer, but neither the magnitude nor the direction of movements is known (Keinath 2004).

Individual fringed myotis have been documented throughout the Decision Area roosting in mines and foraging in riparian habitat along forested edges. Suitable roosting and maternity habitat may be present within rocky cliffs, tree cavities, caves, and mines within the Decision Area. Suitable foraging habitat occurs throughout the Decision Area. Deep canyons, roads, and riverine habitats provide corridors between foraging and roosting habitat.

Preble's Shrew (Sorex preblei)

Preble's shrew is a small insectivore found in many different habitats, which suggests that their habitat requirements may be related to some factor other than dominant vegetation type or soil moisture content. Preble’s shrew usually occurs near permanent or intermittent streams in arid to semi-arid shrub/grass associations, as well as within dense high-elevation openings in coniferous forests (Tomasi and Hoffmann 1984). Although Preble's shrews occur in eastern Oregon, they have not been documented within the Decision Area (Verts 1975).

Washington Ground Squirrel (Spermophilus washingtoni)

Washington ground squirrels are most abundant in areas of high grass cover on deep soils with low clay content and high silt content (Betts 1990). They feed on herbaceous vegetation (including cultivated plants), roots, bulbs, seeds, and insects (Betts 1990).

Washington ground squirrels are endemic to the Columbia Plateau, south of the Columbia River and east of the John Day River. The Oregon population occurs almost entirely on the Boardman Bombing Range in Marrow County, Oregon (a U.S. Naval weapons systems test facility managed by the U.S. Navy) and the Boeing tract (state-owned lands originally leased to Boeing, Inc., and subleased to an agricultural corporation). Both the bombing range and Boeing tract have some public lands intermingled within the site.

There are three main occupied areas with Washington ground squirrels: two in Washington (not within the Decision Area) and one in Oregon (Boardman Bombing Range and Boeing Tract). These areas are highly disjunct, separated by more than 30 miles and surrounded by non-native grass communities or irrigated croplands.

Within the Planning Area, the species has been extirpated at most sites outside the bombing range and Boeing tract. One exception is Three Mile Canyon Farm, which is a privately owned operation that supports Washington ground squirrel habitat adjacent to the Boardman Bombing Range. Three mile Canyon Farm turned over 23,000 acres to The Nature Conservancy for management for the recovery of the Washington ground squirrel. This area is one of the largest grassland preserves in the Northwest and is beneficial to Washington ground squirrels because it adds to the acres of potential habitat. Although there are no formal surveys conducted for this species, there is a high potential that Washington ground squirrels occur on the BLM portions of the Boardman Bombing Range.

Tricolored Blackbird (Agelaius tricolor)

The principle range of tricolored blackbirds is the Central Valley of California and surrounding foothills, with some inland colonies in southern California (Hamilton 1998). Potential habitat for tricolored blackbirds in the Planning Area is located in Umatilla County. The species prefers to breed in freshwater marshes with emergent vegetation (e.g., cattails) or in thickets of willows or other shrubs (Hamilton 1998). While rare in Oregon, the species has been known to breed in Himalayan blackberry patches growing in and around wetlands. While tricolored blackbirds have been documented in the Planning Area, they have not been seen in the Decision Area.

Grasshopper Sparrow (Ammodramus savannarum)

The grasshopper sparrow is an inconspicuous grassland sparrow with a short tail and a proportionally large, flat head. The grasshopper sparrow range extends into Canada, down to Central America, and across into eastern North America. Known for their buzz-like song that sounds like a grasshopper, this sparrow has over 12 subspecies. Within the Decision Area,

potential habitat is strongly associated with open grasslands that have not been overgrazed and have only a few shrubs. Grasshopper sparrows will not use areas that have dense brush cover. There are limited areas within the Decision Area that would provide adequate habitat for this species. Such areas include Hells Canyon, Pedro Mountain, Pritchard Creek, and Keating Valley.

Western Burrowing Owl (Athene cunicularia hypugea)

Western burrowing owls have been observed in the Virtue Flat, Keating, Huntington, and Richland Valley areas, extending to the Snake River. Although there are observations of the species in the Decision Area, there are no existing written records of nesting activity or recruitment. The western burrowing owl prefers flat-to-gently-undulating areas that have a high enough rodent population to support its lifecycle (Rich 1986). Other needs include burrows in which they can build nests. The abandoned burrows of ground-dwelling mammals such as badgers and ground squirrels are ideal for nesting, resting, and storing food (Rich 1986). Short vegetation and tall weedy areas, where insects and rodents are most common, ensure an adequate food supply when they are located within 3 miles of the burrows. Open terrain surrounding a burrow allows an owl to see approaching predators.

Upland Sandpiper (Bartamia longicauda)

In Oregon, the upland sandpiper nests in partly flooded meadows and grasslands, usually with a fringe of trees, and often in the middle of higher-elevation sagebrush communities. It may perch in coniferous trees or snags surrounding the nesting site. The species favors open, lightly grazed meadows with some forb growth where it forages for grasshoppers and crickets. They also eat ants, berries, and seeds of grasses and forbs (Kagen et al. 2001).

While upland sandpipers have been known to occur in the Planning Area, they have not been documented in the Decision Area. A pair was documented nesting near Ukiah in the 1990s, but they have not been observed within the last decade. Upland sandpipers are rare breeders in eastern Oregon and are associated with montane meadows in lodgepole pine or ponderosa pine forest habitat. The Decision Area contains limited habitat that would support upland sandpiper populations.

Ferruginous Hawk (Buteo regalis)

Ferruginous hawks prefer open rangeland habitats and may nest on the ground, on cliffs, or in juniper trees. They inhabit the arid, open country of 17 western states and 3 Canadian provinces during the breeding season and winter, primarily in Mexico and the southwestern and south-central United States (Watson 2003). In Oregon, the highest abundance of major prey species (e.g., white-tailed jackrabbits, Townsend's ground squirrels, and northern pocket gophers) occurs in native grasslands and sagebrush shrub steppe habitats (Dechant et al. 1999). In the Decision Area, Pritchard Creek and the Keating Valley area provide habitat and food sources able to support the hawk's life history requirements from spring through fall. Ferruginous hawks are known to occur within the Decision Area.

Greater Sage-grouse (Centrocerus urophasianus)

On February 26, 2008, the USFWS published a notice to initiate a status review for the greater sage-grouse (73 FR 10218), and on April 29, 2008, the USFWS published a notice extending request for submitting information to June 27, 2008 (73 FR 23172). Publication of the monograph was delayed due to circumstances outside the control of the USFWS. An amended joint stipulation, adopted by the court on June 15, 2009, required the USFWS to submit the 12–month finding to the Federal Register by February 26, 2010, but this due date was subsequently extended to March 5, 2010. On that date, the USFWS determined that listing the greater sage-grouse under the ESA (range-wide) was warranted, but the listing was precluded by higher priority listing actions. The sage-grouse became a candidate species for listing under the ESA in March 2010 (USFWS 2010a).

Greater sage-grouse were once found in most sagebrush habitats east of the Cascades. European settlement and conversion of sagebrush steppe into agricultural production led to the extirpation of the species in the Columbia Basin by the early 1900s (Hagen 2005). Sage-grouse are currently found in California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming in North America and Alberta and Saskatchewan in Canada. Population monitoring did not begin until after this range contraction, and, therefore, estimating population size or density at the time of European settlement is difficult (Hagen 2005). Current key habitat for sage-grouse in the Decision Area is illustrated on Map 3-10 (on CD), while current sage-grouse distribution within the Western U.S. is illustrated on Map 3-11 (on CD).

Sage-grouse represent a focal species for sagebrush conservation because they are sagebrush obligates that select habitats at multiple spatial scales (Stiver et al. 2010). Within these different spatial scales, there is considerable information regarding home ranges and populations (Schroeder et al. 2004; Connelly et al. 2004). To fulfill their lifecycle needs, sage-grouse can move over several miles that encompass different types of habitats (Connelly et al. *in press*). There are four scales or orders (broad, mid, fine, and site-specific scales) by which sage-grouse select habitat for their life history (Stiver et al. 2010). Conservation for sage-grouse is a scale-dependent process whereby priority landscapes are identified across the species range (broad-scale) and appropriate conservation actions are implemented within seasonal habitats to benefit populations (fine/site-scale). A summary of the habitat elements that are found within each scale is presented in Table 3-34.

Table 3-34. Four Scales (Orders) of Habitat Selection by Sage-grouse According to Johnson (1980).

Habitat Selection Process	Broad-Scale	Mid-Scale	Fine-Scale	Site-Scale
Orders of Habitat Selection	First-order: Range-wide distribution of sage-grouse populations throughout the west.	Second-order: Physical and geographic range of populations and subpopulations: 1) Habitat characteristics within populations and subpopulations. 2) Dispersal between subpopulations.	Third-order: Physical and geographic area within home ranges: 1) Habitat characteristics within a home range (sagebrush and associated vegetation communities). 2) Movement between seasonal ranges (breeding to summer, summer to winter).	Fourth-order: Physical and geographic area within seasonal ranges to meet life requisite needs: 1) Habitat characteristics within a specific seasonal range (e.g., breeding, brood-rearing/summer, winter). 2) Movement between daily use sites (feeding to loafing, nesting to feeding).

Table 3-35. Mid-scale habitat indicators and relationship to habitat suitability for sage-grouse habitats according to Stiver et al (2010)

Habitat Indicators	Metric Description	Relationship to Habitat Suitability
1. Habitat Availability	The amount of sagebrush in a habitat area.	The more sagebrush relative to potential habitat the greater the area suitability.
2. Patch Size and Number	The average size of habitat patches and the number of patches within the area.	Generally, the larger and more contiguous the habitat patches relative to the area the greater suitability of the area.
3. Patch Connectivity	The average distance from one habitat patch to the nearest similar patch within the area.	As linkage areas between habitat patches increase in shrub cover rather than tree or grass/forb cover, habitat suitability increases. Presence of anthropogenic features between patches also decease linkage area suitability.
4. Landscape Matrix and Edge Effect	The amount of edge in contact with plant communities or land uses with positive or negative influence on the habitat patch.	As the amount of sagebrush edge in contact with plant communities or land uses that positively influence shrub land patch habitat increases, the landscape matrix and edge suitability increases.
5. Anthropogenic Disturbances	The fragmentation of contiguous sagebrush patches in the area through land use changes in infrastructure development. Measured as the number, length, or area (or area of influence) of embedded anthropogenic features per unit patch area.	As the number and intensity of anthropogenic features within the habitat patches in the area decreases, suitability increases.

For this analysis, the BLM looked at a mid-scale habitat indicators and the relationship to habitat suitability for sage-grouse using FRAGSTATS 3.3, which is a computer software program designed to compute a wide variety of landscape metrics for categorical map patterns. One way the BLM ran FRAGSTATS was by utilizing a 50-foot buffer and showing the results without differentiation between habitat and non-habitat for sage-grouse, and showing fragmentation as a whole. The results for all habitat types shows that the Planning Area had a lower number of patches per area (10.53) than the Baker and East Central Oregon subpopulations as a whole, which had 13.71 patches per area. This means that within the Planning Area, there is less

fragmentation than there is for both subpopulations in their entirety. FRAGSTATS also showed that between the two subpopulations for all habitat types, the Baker subpopulation has less fragmentation (9.73 patches per area) than the East Central Oregon subpopulation (13.81 patches per area).

The second way BLM ran FRAGSTATS was by utilizing a 50-foot buffer and showing the results with differentiation between habitat and non-habitat areas for sage-grouse, and showing fragmentation as a whole. The results for habitat versus non-habitat types showed that the Planning Area had a greater number of patches per area (62,766) than the Baker and East Central Oregon subpopulations as a whole, which had 13,569 patches per area. This means that within the Planning Area, there is greater fragmentation than there is for both subpopulations in their entirety. FRAGSTATS also showed that between the two subpopulations for habitat versus non-habitat the Baker subpopulation had greater fragmentation (9,348 patches per area) than the East Central Oregon subpopulation (5,355 patches per area). To see a full FRAGSTATS analysis please refer to Appendix 3.4

Yellow-billed Cuckoo (Coccyzus americanus)

Extirpated from most of the west, the yellow-billed cuckoo is a rare resident of Oregon. The species belongs to a group of seven riparian obligate, migratory birds which breed during mid-summer in the American southwest and northern Mexico and build open-cup nests for their young (BirdWeb [accessed] 2010). The yellow-billed cuckoo is closely associated with riparian areas that are dominated by large expanses of mature willows and cottonwoods (Anderson and Laymon 1989). Limited marginal habitat areas exist that would provide adequate habitat for this cuckoo. Such areas include mature cottonwood and willow riparian habitats at Little Lookout and Pedro mountains. However, there is no record of yellow-billed cuckoos being observed within the Decision Area. It is unlikely that the yellow-billed cuckoo would be observed within the Decision Area due to the lack of habitat.

Bobolink (Dolichonyx oryzivorus)

Bobolinks are generally found in tall-grass prairies, hay fields, and/or similar open areas without dense brush. In Oregon, which has little natural tall-grass prairie habitat, bobolinks are associated with irrigated hay fields and other agricultural crops that are similar in structure to tall-grass prairies. While some areas in the Planning Area provide specific habitat needs for this species, the Decision Area contains only limited habitat is available for this species. There are no recorded observations of this species within the Decision Area.

American Peregrine Falcon (Falcoperegrinus anatum)

Within the Decision Area, peregrine falcons hunt in large expanses of open sagebrush. In general, the species nest on cliffs and cliff-like structures, including human-made structures. They occasionally nest on tree snags or abandoned nests of other large birds. Mainly feeding on other birds for their dietary needs, the peregrine falcon can maneuver into a steep dive in order to

knock their prey unconscious. Much of the Decision Area has available hunting habitat for this falcon, though nesting habitat is quite limited. No known peregrine nests have been recorded within the Decision Area.

Bald Eagle (Haliaeetus leucocephalus)

Bald eagle activity within the Planning Area includes breeding, nesting, roosting, and winter use. Activity in the Decision Area includes roosting and winter use. Portions of the Decision Area lie within Oregon Bald Eagle Recovery Zone 14 (Snake River) and Zone 9 (Blue Mountains). While Recovery Zone 14 currently meets the Oregon population goal to support six breeding pairs, no nest-sites occur on public lands; however, bald eagles currently breed and nest in close proximity to the Decision Area near Unity Reservoir and Oxbow Reservoir. This area is currently designated as an ACEC and has a bald eagle management plan. At some point, the eagles may move their nest site to public lands, which would likely include wintering and roosting trees along the Snake River.

Bald eagles nest in deciduous, coniferous, and mixed forest stands in large-diameter trees characterized by open branching and stout limbs. Nests are in dominant or co-dominant trees often located near a break in the forest such as caused by a burn, clear-cut, field edge (e.g. agricultural fields), or water. The majority of nest sites are within 1/2 mile of a body of water such as coastal shorelines, bays, rivers, lakes, farm ponds, and dams (i.e., reservoirs, beaver dams, log jams, etc.) and have an unobstructed view of the water. Bald eagles prefer undeveloped areas with little human activity (Mathisen 1968; Stalmaster and Newman 1978).

Winter foraging areas are usually located near open water on rivers, lakes, reservoirs, and bays where fish and waterfowl are abundant, or in areas with little or no water (e.g., rangelands, barren land, tundra, and suburban areas) where other prey species (e.g., rabbit, rodents, deer, and carrion) are abundant. Communal roost sites contain large trees (or standing snags and utility poles have also been used) with stout lower horizontal branches for perching. A few to more than one hundred bald eagles may use these roost sites, the larger number being more likely during inclement weather. Perch trees used during the day possess the same characteristics as roost trees but are located closer to foraging areas (Mathisen 1968).

Harlequin Duck (Histrionicus histrionicus)

No harlequin ducks have been documented in the Decision Area, which is unlikely to contain breeding habitat for the species. High elevation mountain streams and lakes in Wallowa County contain possible migratory use habitat for the species due to the lack of habitat. Habitat within the Decision Area would most likely be transitory. Female harlequin ducks and their young typically live in oxbows and ponds adjacent to mountain streams until the ducklings are old enough to feed and travel in fast currents (Bengston 1972). Nests are located in woody debris in streams, overhangs in stream banks, or in adjacent tree cavities. Old growth and mature forest and woody debris are generally present at nest sites. Clear, clean water and an abundant aquatic food source appear essential for successful reproduction.

Lewis's Woodpecker (Melanerpes lewis)

Source habitats for Lewis's woodpecker include old-forest, single-storied structural stages of ponderosa pine and multi-storied stages of Douglas-fir, western larch, and riparian cottonwood woodlands (Bock 1970; Short 1982). Unlike most woodpecker species, Lewis's woodpecker is an aerial insectivore and requires openings for foraging maneuvers. Their breeding distribution is strongly associated with the distribution of ponderosa pine (Bock 1970; Short 1982). This woodpecker is often classified as a specialist in burned pine forest habitat, although suitability of burned areas as habitat may differ with post-fire age, size, and intensity of burn and geographic region (Raphael and White 1984; Saab and Dudley 1998). Burned ponderosa pine forests created by stand-replacing fires seem to be highly productive source habitats compared to unburned pine or cottonwood riparian forests.

Lewis's woodpeckers have been observed in lower montane forests of the Decision Area that have been subjected to fire. Areas with limited suitable source habitat for the species include the Pedro, Lookout, Ironside, and Hunt mountains and along the Grande Ronde River.

Mountain Quail (Oreortyx pictus)

Mountain quail prefer open forests and woodlands with an ample undergrowth of brushy vegetation. The species also inhabits thickets of chaparral and riparian woodlands, meadow edges in forests, and brushy re-growth following timber harvest (Brennan et al. 1987). While mountain quail have not been documented in the Decision Area, there is potential habitat for the species, which includes riparian areas associated with the Pedro, Hunt, and Ironside mountains (around Ukiah), and along the Snake and Grande Ronde rivers.

White-headed Woodpecker (Picoides albolavatus)

The white-headed woodpecker is strongly associated with open old-growth ponderosa pine/Douglas-fir forests that have large mature snags that are over 20 inches in diameter (Fredrick and Moore 1991; Groves et al. 1997; Wisdom et al. 2000). In addition to uncut old-growth forests, the white-headed woodpeckers commonly use areas that have undergone silvicultrual treatments that leave large-diameter ponderosa pines and other old-growth components (Dixon 1995a, 1995b; Frenzel 2002). They commonly excavate a new nest cavity each year and may begin several holes before selecting one for nesting. While they usually excavate nest cavities in snags, they also use stumps, leaning logs, and dead tops of live trees (Frederick and Moore 1991; Dixon 1995a, 1995b; Milne and Hejl 1989).

Verified sightings of white-headed woodpeckers in the Decision Area have occurred near Cove, Oregon. Other locations that contain suitable habitat in the form of open canopy and open understory forest settings include Pedro Mountain, Slide Mountain, and the Grande Ronde River drainage area.

Columbian Sharp-tail Grouse (Tympanuchus phaslanellus)

Sharp-tailed grouse inhabit grasslands, prairies, mountain meadows, and, to a certain extent, sagebrush or woodlands with a grass understory (Giesen and Connelly 1993). This species seeks cover in brushy draws or riparian thickets. While it uses agricultural fields, the grouse generally disappears from land under cultivation.

Small resident populations of sharp-tailed grouse currently exist on private lands in the Wallowa Mountain area and on BLM's Boise District in Idaho (east of the Snake River). Several historic observations of sharp-tail grouse have been documented in the Decision Area, but there is currently no suitable habitat for the species.

Sagebrush Lizard (Sceloporus graciosus)

Sagebrush lizards are also known as spiny lizards because of the highly keeled and spin-like scales found on their dorsal-side. Although their name implies that they inhabit sagebrush communities, they also inhabit areas with greasewood, bitterbrush shrubs, and small rock outcrops. They use logs and burrows of rodents for their homes and live on a diet of insects. While this species has not been documented to occur on public lands, available habitat is located throughout the Decision Area.

Woodhouse Toad (Bufo woodhousii)

The woodhouse toad is a species that is a part of the "true toads" of North America. Within the Decision Area, they are found within shrub-steppe habitats such as the Powder River, Burnt River, and Brownlee Reservoir sub-basins. These toads breed in a variety of still-water habitats, including shallow temporarily flooded sites, ponds, and sloughs. Transformed toads are terrestrial and breed in March through August. No observations of the woodhouse toad have been documented within the Decision Area.

Columbia Spotted Frog (Rana luteiventris)

The USFWS has subdivided Columbia spotted frogs into several subpopulations, two of which occur in Oregon. Although the USFWS currently considers both subpopulations as candidate species, the Great Basin subpopulation in southeast Oregon is expected to retain its candidate status, while the northern subpopulation (the subspecies currently located within the Decision Area) is expected to lose its candidate status. At one time, the Great Basin subpopulation was thought to inhabit suitable riparian areas in the Decision Area, but recent surveys and genetic investigations have refuted this belief. Such studies confirm that the Decision Area supports the northern subpopulation of spotted frogs, which is widely distributed as far north as Alaska. However, future surveys are needed to confirm that the Decision Area only supports the northern subpopulation of spotted frogs.

Columbia spotted frogs are highly aquatic and rarely found far from permanent natural or human-made (e.g., reservoirs or mining ponds) water sources. They can also utilize intermittent streams and meadows in spring. Spotted frogs usually occupy the sunny, vegetated margins of streams, lakes, ponds, spring complexes, and marshes. Riparian vegetation is important for Columbia spotted frogs as they use both terrestrial (i.e., above the water surface) and aquatic (i.e., below the water surface) riparian vegetation for cover, foraging, and basking (Patla and Keinath 2005). Although there have been no formal surveys, Columbia spotted frogs are known to occur within the Decision Area.

Northern Leopard Frog (Rana pipiens)

The Northern leopard frog is distinguishable from other frogs by the dorsal spotting of dark ovals with light halos, rather than irregular dark patches with light center spots (as in the Columbia Spotted Frog) or general absence of spotting (as in the American Bullfrog); the presence of a lateral yellowish stripe on the side of the snout (absent in American Bullfrog); and lack of reddish coloration on the belly and undersides of the legs (present in Columbia Spotted Frog). Northern leopard frogs require a mosaic of habitats to meet annual requirements of all life stages. Although the species generally uses separate sites for breeding and overwintering, they occasionally use the same pond. Northern leopard frogs occupy a variety of wetland habitats of relatively fresh water with moderate salinity, including springs, slow streams, marshes, bogs, ponds, canals, flood plains, beaver ponds, reservoirs, and lakes. Such habitats usually consist of permanent water with rooted aquatic vegetation, often with few or no trees. In summer, adult and juvenile frogs commonly feed in open or semi-open wet meadows and fields with shorter vegetation, usually near the margins of waterbodies, and seek cover underwater. They avoid tall, dense vegetation. Habitat for this species is located throughout most of the Decision Area. No northern leopard frogs are known to occur within the Decision Area. However, surveys have not been conducted to determine their existence.

b. Trends

Discussion of habitat trends for common wildlife species also applies to special status wildlife species. In general, the trend for special status species involves a decline in populations due to habitat degradation, hence their special status designations. Their distribution is also generally unknown. Where information is available, trends are presented below for each special status species identified in Table 3-33. Specific threats or causes leading to such trends are also identified.

Pygmy Rabbit

Currently, pygmy rabbit habitat is highly fragmented because of historic rangeland activities (e.g., herbicide treatment, prescribed burns, and conversion of sagebrush into agricultural lands) and any past and ongoing developments on private and public lands that have lead to fragmentation of Wyoming big sagebrush habitats (Gabler et al. 2000). The decline of pygmy

rabbit populations within the Columbia Basin have been linked to habitat fragmentation, habitat degradation, disease, and predation (Thines et al. 2004).

While it is uncertain how the landscape-level pattern of sagebrush affects pygmy rabbit populations (Keinath and McGee 2004), sagebrush habitat is currently highly fragmented throughout the west, causing a similarly patchy distribution of pygmy rabbits throughout their range. Interestingly, this type of sagebrush habitat may not have been more prevalent or contiguous before human settlement (Dobler and Dixon 1990), which indicates that pygmy rabbits may have coped with such fragmentation for centuries. It is likely, however, that local distributions of these habitat patches shifted across the landscape in response to disturbances (e.g., fire, flood, or land-use change) and changing weather patterns, and rabbit distribution has analogously shifted (Keinath and McGee 2004). Furthermore, currently documented declines may be a delayed result of a long-term trend in sagebrush habitat that began occurring prior to human settlement, but has been accelerated by that settlement (Keinath and McGee 2004).

Gray Wolf

The BLM gave no consideration for the management of wolf habitat in the current Baker RMP (BLM 1989) because there were no records of wolves within the state of Oregon when the ROD was signed. The reintroduction and reestablishment of wolves in Idaho (1995) has resulted in wolves crossing over to Oregon and reestablishing packs. Although wolf numbers in Oregon are unknown, overall wolf populations are expected to increase, including those within the Planning Area.

Wildlife biologists predicted that wolves from expanding Idaho populations would cross the Snake River and enter Oregon. They have continued to investigate new wolf sightings in northeast Oregon. With the knowledge that gray wolves would likely reestablish themselves as permanent residents of eastern Oregon in the near future, the ODFW Commission directed the development of a Wolf Conservation and Management Plan (ODFW 2005). Both the federal and state governments consider gray wolves in Oregon to be an endangered species. According to the state conservation and management plan, ODFW will conclude that wolves are permanently established after four breeding pairs have been documented for three consecutive years east of the Cascade Range (east of Highway 395, 20 and 78). It is likely that four breeding pairs will be established in Northeast Oregon and use habitat within the Decision Area over the life of the revised Baker RMP.

Townsend's big-eared Bat

The primary threat to Townsend's big-eared bats is disturbance and/or destruction of roost sites due to such activities as recreational caving or mine exploration, mine reclamation, and renewed mining in historic districts. Surveys conducted in Oregon indicate that human visitation and renewed mining in recent years have negatively affected current and historic roost sites, with most reported colonies exhibiting moderate to sizable reduction in numbers (Gruver et al. 2006). This bat species is very sensitive to human disturbance and may abandon roost sites after human

visitation. In large portions of its western range, dependence upon abandoned mines puts this species at risk from mine reclamation. Furthermore, like most other North American bats species, potential loss or alteration of both roosting and foraging habitat due to timber harvest practices, and loss of riparian habitat threatens their long-term persistence. Loss of foraging habitat due to grazing of meadows and desert-scrub, conversion of desert wash vegetation, or conversion of native grasslands to cheatgrass or other invasive species may reduce food availability.

California Wolverine

Habitat fragmentation and displacement by humans may have forced the wolverine into less desirable habitats than it historically occupied. Excessive harvesting by hunters, loss of ungulate wintering areas, displacement of ungulate populations due to excessive timber harvest, and urbanization may all have adversely affected wolverine populations (Copeland 1996). High road densities, timber harvesting, or housing development near subalpine habitats may reduce potential foraging and kit rearing habitats, along with increasing the probability of human-caused mortality (Copeland 1996). Forest alteration may isolate subpopulations, thereby increasing their susceptibility to extirpation (Copeland 1996). The reduction of wilderness "refugia" through human actions may be the greatest threat to local population viability (Copeland 1996). If occurrences of this species were to increase in the Planning Area over the next 20 years, the limited habitat within the Decision Area would ensure that the wolverine would be only a transient species.

Black-tailed Jackrabbit

There is no trend data for black-tailed jackrabbits within the Decision Area; however, through field observances, current populations are suspected to be stable. Within the Planning Area, the conversion of habitat into agricultural developments, improper grazing practices, and human activities (e.g., sport hunting) have or continues to threaten jackrabbit habitat and populations. The ramifications of decreased rabbit numbers throughout the food web are unknown. Striving to meet rangeland health standards in the Decision Area would increase the likelihood that black-tailed jackrabbit habitat and populations continue to remain stable on public lands over the life of the revised RMP.

White-tailed jackrabbit

While there is no trend data for white-tailed jackrabbit populations within the Decision Area, there are noted field observations for this species. Agricultural development and improper grazing practices that reduced native bunchgrass abundance and vigor are the probably reasons for the specie's population decline. This includes management in the 1930s on both public and private lands that converted large expanses of sagebrush into grassland monocultures. In addition, past and present western juniper encroachment has fragmented potential and current white-tailed jackrabbit habitat. On the other hand, managing vegetation under the current Baker RMP (BLM 1989) in the mid to late-seral cover class has benefited white-tailed jackrabbits by

providing adequate sagebrush canopy cover for nesting and hiding areas, which is helping to stabilize the populations (McAdoo and Young 1980).

Canada Lynx

Risk factors for lynx include direct human-caused mortalities (e.g., shooting, trapping, and vehicle collisions) and changes in forage and denning habitat. Roads and trails have resulted in increased human access and activity in lynx habitat, particularly during critical winter months (Koehler et al. 2008). While many of the existing routes are closed to motorized travel during certain times of the year, such as the winter months, these routes are open to over-the-snow travel and provide popular snowmobile opportunities (Kolbe et al. 2007). Packed snow trails made by snowmobiles can allow other predators (e.g., coyotes) that are normally excluded from hunting in lynx winter habitat due to snow to compete with lynx for prey. Lynx also use roads and packed trails for travel, which may make them more vulnerable to human-caused mortality (Kolbe et al. 2007; Maletzke et al. 2008). In addition, fire suppression and logging have altered the mosaic of habitats needed for prey species and denning sites (Wisdom et al. 2000; USFS and BLM 2000).

It is highly unlikely lynx exist in northeastern Oregon. There is no trend data for populations for Canada lynx within the Decision Area and habitat connectivity between suitable habitats may be too isolated to support the species. A few transient acres of suitable habitat are located on Hunt Mountain within the Decision Area.

Fisher

Historically, fishers were distributed throughout the forests of North America at the time of European settlement. Habitat destruction from timber harvest and fisher mortalities due to over-trapping led to extensive population declines or extirpated the species in much of North America between 1800 and 1940 (Groves et al. 1997b; Ruggiero et al. 1994; Powell 1993). Trapping and habitat loss due to logging extirpated fishers from Oregon by the early 1900s. While reintroductions in 1961 in the Eagle Cap Wilderness in Oregon reestablished the fisher, populations from this transplant plant never really increased and fishers have not been documented within the Oregon side of the Wallowa-Whitman National Forest since the early 1980s. Current threats to fishers include loss and fragmentation of habitat, mortalities and injuries from incidental captures, decreases in prey base, increases in human disturbance, and small, isolated populations.

Fringed Myotis

Threats identified for the fringed myotis include the loss or modification of roosting habitat, such as the closure or renewed activity at abandoned mines; recreational caving; removal of large-diameter, cavity-forming trees; and replacement of buildings and bridges with non-bat friendly structures. Removal of large blocks of forest or woodland habitat may also threaten the species due to its apparent propensity for foraging in and around trees. The fringed myotis is more

vulnerable to alteration of mature forests ecosystems than most bat species because it depends on old-growth conditions in late-successional pine and mixed conifer forests with high densities of snags in early to medium stages of decay. Wind energy development and large scale, non-target pesticide spraying are also potential threats to the species.

Preble's Shrew

Though some surveys have taken place, there is no trend data for populations for Preble's shrew within the Planning or Decision areas.

Washington Ground Squirrel

Washington ground squirrel population trends are unknown. The species has a very restricted range because much of their habitat has been converted into agricultural lands (Betts 1999). As a result, the species population has experienced a significant decline over the last 25 years. The last remaining stronghold of Washington ground squirrels in Oregon is on the remaining undeveloped portion of the state-leased Boeing tract and within the Boardman Bombing Range.

Tricolored Blackbird

Nationwide**,** populations of tricolored blackbirds have decreased dramatically, declining by 37 percent from 1994 to 1997. This decline is due to the drainage of wetlands and conversion of former nest and roost sites to agricultural lands, and possibly due to control measures as the species is considered an agricultural pest in some areas. There is no trend data for populations for this species within the Planning and Decision Areas.

Grasshopper Sparrow

Breeding Bird Survey data from the national bird Christmas counts have shown significant declines in grasshopper sparrow populations throughout North America, and generally throughout the West (BirdWeb [accessed] 2010). There is no trend data for populations for this species within the Planning and Decision Areas.

Western Burrowing Owl

Local surveys have detected declining populations and/or range reductions of burrowing owls in Oregon (USFWS 2003). Primary threats across the North American range of the burrowing owl include habitat loss due to land conversions for agricultural and urban development, and habitat degradation and loss due to reductions of burrowing mammal populations. While no trend data are available for western burrowing owls in the Decision Area, as habitat becomes more fragmented or as more overhead structures are placed on public lands, further declines in populations would likely occur (Smallwood et al. 2007).

Upland Sandpiper

The plowing of natural grasslands, increased urbanization, farming practices, and forest succession has contributed to the degradation and fragmentation of upland sandpiper habitat. There is no trend data for this species within the Decision Area.

Ferruginous Hawk

Ferruginous hawk populations are reportedly declining throughout their breeding range. Evidence suggests their decline is due to the loss of breeding and wintering habitat, habitat fragmentation, urbanization, and the conversion of native rangeland to non-native communities (IDFG 2005). Increasing fragmentation of shrub steppe habitats from agricultural conversion and residential development has been a factor contributing to the decline of ferruginous hawk populations. Associated disappearances of shrub steppe mammals, such as white-tailed jackrabbits and Washington ground squirrels, have contributed to dietary shifts of ferruginous hawks to smaller mammals, insects, and gulls (Dechant et al. 1999). Changes in prey and increased distance to foraging ranges may be affecting population numbers by reducing hawk survival rates (Dechant et al. 1999). There is no population trend data specific to the Decision Area. Managing upland vegetation to be in a mid- to late-seral age class under the current Baker RMP (BLM 1989) has created open expanses of sagebrush that support adequate rodent populations, which has been beneficial to ferruginous hawk habitat (Schmutz 1995) and may have helped to stabilized populations within the Decision Area.

Greater Sage-grouse

Fragmentation of sagebrush habitats has been cited as the primary cause of the decline of greater sage-grouse populations (USFWS 2010a). Greater sage-grouse are a landscape scale species, requiring large expanses of sagebrush to meet all seasonal habitat requirements (Connelly et al 2000). The USFWS analyzed potential factors that may affect the habitat or range of the greater sage-grouse and determined that habitat loss and fragmentation resulting from wildfire, invasive plants species, energy development, and infrastructure development are the primary threats to the species (USFWS 2010). The negative effects of fragmentation on greater sage-grouse are diverse and include reduced lek (courtship site) persistence, lek attendance, winter habitat use, recruitment, yearling annual survival, and female nest-site choice. It has been estimated that sage-grouse habitat has been reduced by 44 percent from the species' historically occupied range (Stiver et al 2006). Federal lands (primarily BLM) make up about 72 percent of the current total range of the species. While this means that federal land management agencies are primarily responsible for habitat management (Connelly et al. 2004), privately owned lands provide critical seasonal habitats (e.g. wintering and nesting) for many populations. In Oregon, sage-grouse population data has demonstrated an overall decline since the 1940s (Connelly et al. 2000; Hagen 2005).

The greater sage-grouse population has been reduced by 44 percent from its historically occupied range (Stiver et al. 2006). Federal lands (primarily BLM) make up about 72 percent of the

current range of the species, which makes federal land management agencies primarily responsible for habitat management (Connelly et al. 2004); however, private lands provide critical seasonal habitats (e.g., wintering and nesting) for many populations (Hagen 2005). Sage-grouse populations in Oregon have been experiencing long-term declines in production (Fischer et al. 1997; Hagen 2005), with the data demonstrating an overall decline since the 1940s (Hagen 2005).

Greater sage-grouse is one of the few wildlife species for which the Baker FO and ODFW have population trend records. As discussed above, populations of sage-grouse have been experiencing a declining trend throughout the species' range. According to ODFW data, greater sage-grouse productivity has recently declined within certain watersheds within the Decision Area, such as Pritchard Creek watershed (N. Myatt, pers. comm., 2008). Monitoring data suggest that Oregon sage-grouse productivity has generally been in decline for the last three or four years. Only time can tell if this trend is simply a temporary cyclical change or a long-term decline throughout sage-grouse's range in Oregon (Aldridge and Bringham 2001; Crawford and Lutz 1985).

Because the sage-grouse is so closely tied to a functioning sagebrush ecosystem, altering this ecosystem's dynamics has resulted in reduced numbers of grouse over their original range. Habitat connectivity and habitat fragmentation are key factors that determine whether sage-grouse inhabit an area (Schroeder et al 2004). Habitat connectivity is important in supporting sustainable population numbers (Flather and Bever 2002; Schroeder et al. 2004; Aldridge et al. 2008), while increased habitat fragmentation leads to reduced population numbers. As identified in Sections B.5b (Vegetative Communities Trends) and B.8b (Wildlife Trends), sagebrush steppe habitats have been declining due to increased wildfire frequency and intensity, certain fire fuel treatments, juniper encroachment, improper grazing practices, and expansion of invasive annual plants (USFS and BLM 2000), all of which has fragmented sage-grouse habitats. In addition, sage-grouse may never reestablish lek sites that are lost through development or harassment, which leads to low recruitment numbers (Schroeder et al 2009; Johnson et al. 2002; Patten et al. 2005). Finally, land ownership patterns in the Planning Area have resulted in varying focuses in land management, thereby leading to further habitat fragmentation.

On a mid-scale level of analysis, the Planning Area has two sage-grouse subpopulations (i.e. Baker and East Central). The Baker subpopulation is a part of the Snake River Plain Management Zone and is separated geographically from other sage-grouse subpopulations by the topography of Lookout Mountain. The southern portion of the Decision Area contains the East Central sage-grouse subpopulation. The East Central subpopulation is a part of the Northern Basin Management Zone (Sriever et al 2010). Lek counts indicate that that the Baker subpopulation is stable to decreasing and the East Central subpopulation is stable to increasing (Nick Myatt ODFW pers. com. 2010). Radio telemetry data collected in 1993 and in 2009-2010 has shown no movement between the subpopulations. However, a small sample of wings analyzed by ODFW suggests that there is no significant genetic difference between the Baker and East Central subpopulations, indicating some degree of historic or current gene flow. For

this analysis the BLM assumes there is no or very low movement between subpopulations. The Baker Resource Area manages 26 percent of the Baker subpopulation (132,769 of 510,623 acres) and less than 2 percent of the East Central subpopulation (53,497 of 2,901,476 acres).

The BLM analyzed the effects of past land management on sage-grouse habitat fragmentation using FRAGSTATS 3.3. Due to landownership patterns within the Planning Area, both public and private lands were included in the analysis for the Baker and East Central Oregon subpopulations. The results of subpopulation analysis shows that the habitat for the Baker subpopulation is 38 percent more fragmented than the East Central Oregon subpopulation (see Appendix 3.4). The main contributing factors influencing the level of fragmentation were the conversion of sagebrush communities into non-native annual grass for agricultural and livestock purposes, juniper expansion, roads, and utility corridors. In addition to greater fragmentation, the Baker subpopulation has 20 percent higher edge density (.37 miles of edges / sq mile) and 5.7 times less interior area (510,623 acres) than the East Central Oregon subpopulation. Interior area is defined as the total area that is not affected by a non sage-grouse habitat edge. Increased fragmentation, edge density, and fewer acres of interior area in the Baker subpopulation may partly explain the current population trend of stable to declining when compared to the East Central Oregon subpopulation of stable to increasing. Therefore, the BLM assumes that adverse effects due to past habitat fragmentation are greater in the Baker subpopulation (moderate to major, adverse) than the East Central subpopulation (minor to moderate, adverse). The Natural Resource Conservation Service (NRCS) working together with private landowners has resulted in approximately 9,000 acres of juniper control in Baker County (Pers. Comm., Travis Bloomer, 2011). These juniper reduction treatments were located within the Baker subpopulation. This reduction in juniper encroachment will reduce the probability of converting native sagebrush community to non-native annual grass, thereby reducing future sage-grouse habitat fragmentation, and resulting in minor beneficial effects to the Baker subpopulation.

Livestock grazing has resulted in heavy utilization on riparian areas within the Baker and East Central Oregon subpopulations. Specifically, there is no minimum allowable riparian stubble height or maximum utilization targets set for both these subpopulations. This level of riparian utilization has been shown to reduce sage-grouse use (Beck 2000). Therefore, the adverse effect of not regulating riparian stubble height or utilization is expected to have a moderate, adverse effect to sage-grouse. Past, livestock grazing has also resulted in reduced late-seral native grass vigor by not tailoring grazing systems to plant growth stages (Brewer et al 2007). This reduces plant vigor and increases the probability of converting a native sagebrush community to non-native annual grass or lower stature Sandberg bluegrass, both of which are of poor quality for sage-grouse nesting habitat (Connelly et al 2000). The BLM suspects that these grazing systems are having a minor to moderate, adverse effect to sage-grouse. However, within the Decision Area, the Pritchard Creek and portions of the Powder River sub-basin, constituting approximately 51,315 acres or 6 percent of identified key habitat, is meeting stubble height for riparian areas in sage-grouse habitat. The BLM expects that this would have a minor, beneficial effect to sage-grouse use.

Fences have also been identified as a potential threat to sage-grouse (Connelly et al 2000). Current scientific recommendations (Christiansen 2009; Sage-grouse Conservation 2003) suggest that the risk of adverse effects is reduced if fences are at least 0.6 miles from a lek. Analysis by the BLM shows that there are a total of 124 miles of fence within 0.6 miles of a lek, of which 54.3 miles are located on private land and 69.7 miles are located on public lands. These fences would have a minor, adverse effect to sage-grouse. To reduce the effects of these fences, the BLM has worked with ODFW to place fence diverts on 3 miles of fence to reduce sage-grouse collisions. Much of the fence diverters are in preliminary stages of research (Christiansen 2009).

Utility corridors have also been identified as a potential threat to sage-grouse. The state strategy (2005) recommends that transmission corridors be placed at least 2 miles away from sage-grouse leks. Past land management on both public and private lands within the Planning Area has resulted in 22 miles of utility corridors within key sage-grouse habitat. Using a depth of edge effect of 50 feet (Mafla et al. 2008) on either side of utility corridors, results in 133 acres of habitat loss to sage-grouse habitat. Similarly, Holloran and Anderson (2005) concluded that to protect and maintain sage-grouse populations, land managers should minimize or halt actions that reduce suitability of nesting habitats within 3.1 miles of a lek, which would include utility corridors. There are 37 miles of utility corridors within the Decision Area, which equates to 224 acres. Therefore, the adverse effect to sage-grouse habitat due to utility corridors would be between 266-448 acres, which would result in a moderate, adverse effect to sage-grouse habitat. Utility corridor placement has a greater affect than the land that is directly impacted from utility line construction. For example, just because a utility corridor is placed outside of sage-grouse lek buffers does not mean that the utility corridor cannot fragment more sage-grouse habitat.

Holloran and Anderson (2005) conclude that sage-grouse nest density is greatest within 3.1 miles of a lek. Past management has resulted in 1,514 miles of roads on private and public lands within 3.1 miles from a sage-grouse lek within the Planning Area. Using a depth of edge influence of 50 feet on either side of these roads equates to 18,351acres being affected adversely, which has resulted in moderate, adverse effect to sage-grouse.

Past private land management has resulted in native vegetation along the Powder River, which is in the Baker subpopulation, to be converted to flood agriculture. Flood agriculture has been identified as having the highest risk for the spread of West Nile virus (Doherty 2007). However, no study has been conducted to determine the effects of West Nile on sage-grouse in the Baker subpopulation. Based on Doherty (2007) it is suspected that West Nile could be causing a negligible to minor, adverse effect to sage-grouse as a result of flood agriculture. Stock water troughs and small reservoirs (less than a half of an acre) within both subpopulations are not suspected to cause measurable increases in adverse effects due to West Nile virus infection rates within either of the subpopulations (Doherty 2007).

Lekking is a critical stage in the life history of sage-grouse (Hagen 2005). Leks are traditional strutting grounds where males gather to attract a mate. Both the BLM and ODFW conduct lek

surveys once a year from late February to early May. Because sage-grouse come to the same location to breed, lek surveys capture a snapshot-in-time of what the male recruitment was at a particular point. Lek surveys have been conducted in Baker County consistently since 1993. While only 4 leks were counted in 1996, 51 lek sites were identified in 2004 and 80 percent were active (Hagen 2005). Another survey use to determine recruitment is brood production surveys (i.e., brood routes). A brood survey provides a measure of annual reproductive success and trend in sage-grouse productivity (Hagen 2005), and can be used to calculate chicks per female, as well as other indices of surveyed population trends. Oregon is the only state that uses brood routes to estimate production and for setting harvest levels (Hagen 2005).

Another threat to sage-grouse populations is the West Nile Virus (Naugle et al. 2005; Clark et al. 2006. Since its introduction in 1999, West Nile Virus has been making its way across the United States, with mosquitoes being its primary vector (Marra et al. 2004). Because sage-grouse do not have any resistance to the virus, if a sage-grouse population is exposed to the virus, there would be an almost 100 percent kill-rate (Clark et al. 2006; Naugle et al. 2006). While West Nile has been detected within Baker County, no evidence has shown that local sage-grouse populations have been affected.

Yellow-billed Cuckoo

In western North America, yellow-billed cuckoo populations have undergone catastrophic declines. Direct loss and degradation of low-elevation riparian woodland habitats have been cited as the primary causes for the declines in yellow-billed cuckoos in the western portion of the range (Wiggins 2005). Low elevation riparian woodland habitats of the size needed for yellow-billed cuckoo are lacking within the Decision Area, so it is highly unlikely that yellow billed cuckoos would be found. There is no trend data for this species within the Decision Area.

Bobolink

There is no trend data for bobolink populations within the Planning or Decision Areas.

American Peregrine Falcon

Once listed as endangered by the USFWS due to low population numbers caused by habitat loss and pesticide use, the peregrine falcon has fully recovered and its populations throughout North America are actually increasing. Trend data within the Planning Area for this species is limited; however, it is suspected that populations will remain stable throughout the life of the revised RMP.

Bald Eagle

The primary factor that led to the decline and subsequent listing of the bald eagle was disrupted reproduction resulting from contamination by dichlorodiphenyltrichloroethane (DDT) pesticides. Other causes of death in bald eagles have included shooting, electrocution, impact injuries, and

lead poisoning. Loss of habitat and human disturbance continue to be potential threats. Habitat loss results from the physical alteration of habitat as well as from human disturbance associated with development or recreation (e.g., hiking, camping, boating, and OHV use). Activities that can and have negatively impacted bald eagles include logging, mining, recreation, overgrazing (particularly in riparian habitats), road construction, wetland filling, and industrial development.

The bald eagle's full recovery is threatened by habitat loss, disturbance by humans, pesticide and mercury contamination, decreasing food supply, electrocution, impacts with wind turbines, and illegal shooting. Even though such threats remain, breeding populations in most areas of the country are making encouraging progress. The recovery population goal for Oregon was set at 206 breeding pairs (USFWS 1986). This goal has been reached and exceeded since 1992. The number of occupied breeding territories in Oregon rapidly increased from 20 in 1971 to 456 in 2005 (Isaacs and Anthony 2006). Bald eagle populations are expected to stay stable and/or to increase in the future. Unity and Snake River Recovery Zones have met their breeding pair requirements designated by USFWS. Idaho Power continues to monitor the breeding pairs in Snake River along Hells Canyon, where eagle numbers appear to be stable.

Harlequin Duck

Trend information is not available for harlequin ducks in the Planning Area. The primary factors thought to be responsible for local declines in the number of harlequin ducks are the degradation of breeding streams, human disturbance during the breeding season, and, in some areas, mortality due to hunting during the winter season. Harlequin duck breeding success is known to decrease during years of high and early spring runoff. In addition, activities such as logging, road building, and mining may act to increase sedimentation along breeding streams, increase disturbance to nesting birds, and facilitate easier access to remote breeding sites. Mining may also lead to stream acidification and heavy metals pollution. There is no trend data for this species within the Decision Area. In addition to a lack of trend data, there is limited breeding habitat for this species within both the Planning and Decision Area.

Lewis's Woodpecker

The primary threat to the long-term persistence of Lewis's woodpecker populations is loss of habitat, especially in the form of recently burned pine forests, park-like ponderosa pine forests, riparian cottonwood stands, and oak woodlands. Primary causes of habitat degradation are timber harvest, fire suppression, cattle grazing, water regulation, and human development. These activities may result in the loss of nest and storage substrates, reduction in the understory shrub community, decrease in prey availability, or an increase in forest stand density, hence making it unsuitable for breeding habitat (Wisdom et al. 2000).

The current Baker RMP (BLM 1989) made some efforts to create habitat for wildlife species such as Lewis's woodpeckers, which included following forestry practices that maintained an allowable cut to benefit wildlife. While there is no population data that would help determine trends for Lewis's woodpeckers in the Decision Area, ongoing forest management actions have

helped to meet the habitat needs for this species, which suggests that populations have remained stable.

Mountain Quail

No trend data is available for mountain quail in the Decision Area. Habitat loss and degradation from forest succession, reservoir construction, fire, weed invasion, and human developments are all important factors in some areas (Gutierrez and Delehanty 1999). Riparian habitats in the Decision Area are not able to adequately support mountain quail habitat.

White-headed Woodpecker

Habitat loss and degradation are the primary threats to white-headed woodpeckers. Logging practices (such as clear-cutting, even-aged stand management, snag removal, and salvage logging) and forest fragmentation have contributed to local declines. Fire suppression over the past 50 years has altered fire regimes so that ponderosa pine forests are no longer maintained by frequent natural fires, but are being replaced by Douglas-fir and are susceptible to stand-replacement fire.

The current Baker RMP (BLM 1989) made some efforts to create habitat for wildlife species, including white-headed woodpeckers, including following forestry practices that maintained an allowable cut to benefit wildlife and to retain snags for cavity nesters. While there is no population data that would help determine trends for white-headed woodpeckers in the Decision Area, ongoing forest management actions have helped to meet the habitat needs for this species, which suggests that populations have remained stable.

Columbian Sharp-tail Grouse

Columbian sharp-tailed grouse were originally distributed throughout land west of the Continental Divide (Hoffman and Thomas 2007). The species is now more limited due to factors such as disturbance, fragmentation, and habitat alteration. There is no trend data for populations of this species within the Decision Area.

Sagebrush Lizard

There is no trend data for populations of this species within the Decision Area. Habitat changes and other factors may be adversely affecting this species, but lack of data precludes identification of specific problems and development of management recommendations.

Woodhouse Toad

Although the woodhouse toad is common throughout much of western North America, there is lack of knowledge of overall population trends. There is no trend data for populations of this species within the Decision Area.

Columbia Spotted Frogs

Although they do occur, there is no population trend data for the Columbia spotted frog in the Decision Area. In general, causes for the decline of the Columbia spotted frog include loss of habitat from altered hydrology due to agriculture, urbanization, and water development; predation by exotic fish and amphibians; and physiological effects from changes in water chemistry and ultraviolet radiation. In addition, impacts related to livestock grazing, trespass, and overgrazing may be, in part, responsible for population declines (Hayes 1997). Another probable cause of spotted frog decline is pesticides, herbicides, fertilizers and other chemicals that enter spotted frog habitat (Daszak et. al. 2004). Livestock occupying the same habitat as the frogs also causes concern. Pathogens of concern include frog virus 3, chytridiomycosis, the bacterium *Aeromonas hydrophila*, and the trematode *Ribeiroia spp*. These pathogens have been linked to amphibian die-offs and malformations in North America (Duffus et. al. 2008).

Northern Leopard Frog

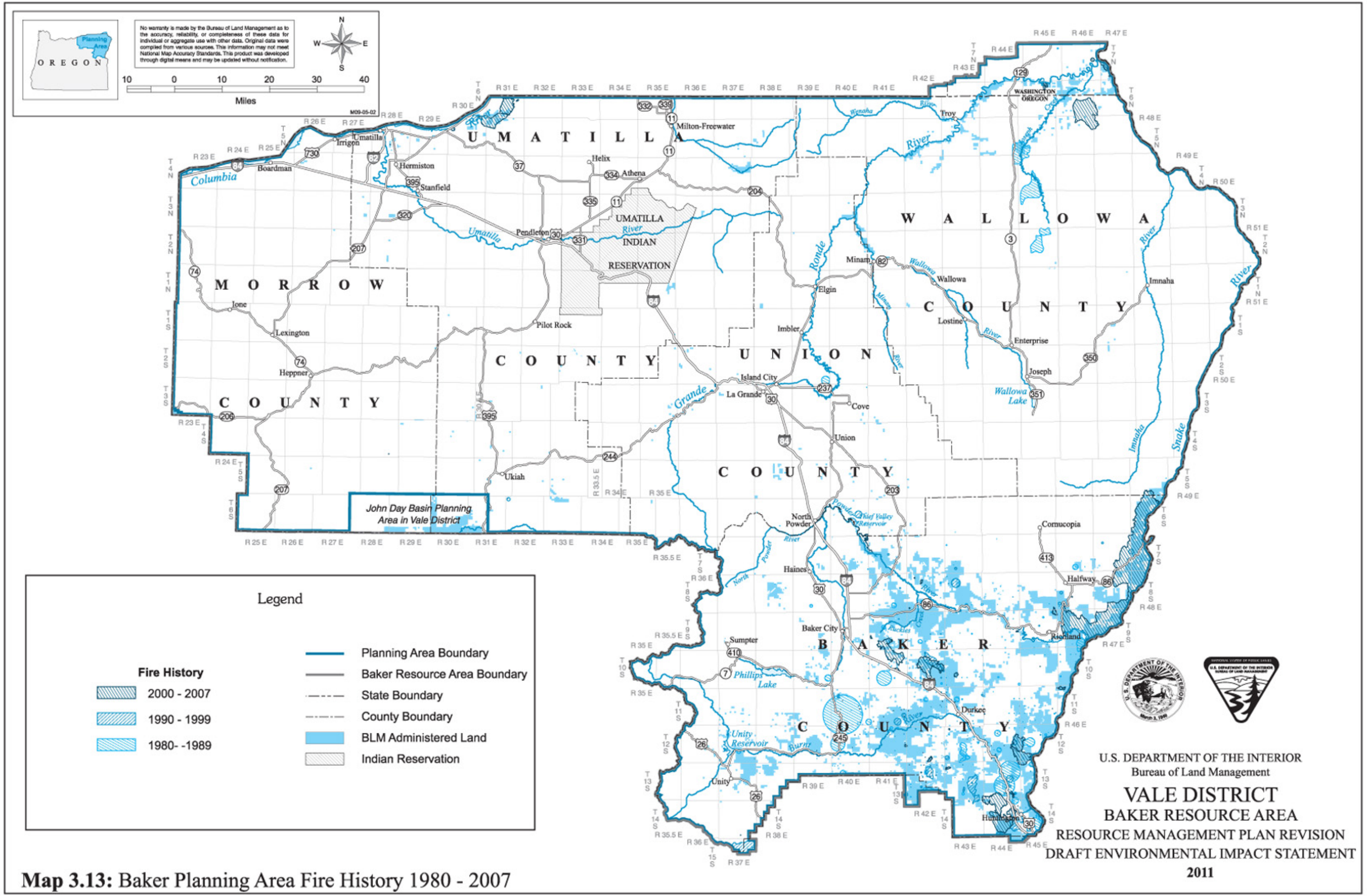
The northern leopard frog was formerly abundant but has experienced significant declines across its range. It is currently considered as endangered by the state in some locations, but as abundant in other areas (Smith and Keinath 2004). Threats to the species and the severity of such threats are variable across its range. All amphibians are particularly susceptible to pH levels, water temperature, bacteria/fungi, and introduced non-native fauna (e.g., American bullfrog). There is no population trend data for the northern leopard frog in the Decision Area and surveys in adjacent area have not found them to be present.

11. FIRE AND FUELS MANAGEMENT

National and state BLM fire policy requires current and desired resource conditions related to fire management be described in terms of five fire regimes (see Table 3-36) and three condition classes (see Table 3-37). The FRCC system measures the vegetation's degree of departure from reference conditions, or how different current vegetation is from a particular reference condition (Hann et al. 2008). This could result in changes to key ecosystem components such as vegetation characteristics, fuel composition, fire frequency, fire severity and pattern, and other associated disturbances, such as insect and disease mortality. The BLM uses the FRCC system to classify existing ecosystem conditions in order to determine priority areas for treatment as mandated by national direction.

Table 3-36. Historic Fire Regime Definitions

Historic Fire Regime	Fire Frequency	Severity
I	0-35 years	Low and mixed severity with less than 75% of the dominant overstory vegetation replaced.
II	0-35 years	Replacement severity with greater than 75% of the dominant overstory vegetation replaced.
III	35-200 years	Mixed and low.
IV	35-200 years	Replacement severity.
V	200+ years	Replacement and mixed severity.



Map 3.13: Baker Planning Area Fire History 1980 - 2007

Table 3-37. FRCC Descriptions

FRCC	Condition Class Description
1	Fire regimes are within historic timeframes, and the loss of key ecosystem components from the occurrence of fire is low. Areas are considered healthy and functioning adequately.
2	Fire regimes have been moderately altered from their historic timeframes by either increased or decreased fire frequency and are at moderate risk of losing key ecosystem components. Areas are considered unhealthy, and their rate of deterioration is expected to increase moderately to rapidly.
3	Fire regimes have been significantly altered from their historic timeframes, and the loss of key ecosystem components is high. Areas are considered to be unhealthy and nonfunctioning.

The FRCC system is not an appropriate indicator for wildland urban interface (WUI) areas since these areas may be maintained in an altered vegetative state to protect life and property. Map 3.12 (on CD) illustrates the Planning Area's FRCC and WUI areas.

a. Current Condition

Fire History

Between 1980 and 2007, an average of 2,490 acres burned in the Decision Area each year, with a total of 69,722 acres burning during that 28-year period. Table 3-38 presents the number of fires for each year between 1980 and 2007, while Map 3-13 illustrates the areas burned over this period.

Table 3-38. Baker FO Fire History

Fire Year	# of Fires	Acres burned		Fire Year	# of Fires	Acres burned
1980	16	1,340		1994	11	630
1981	15	4,083		1995	10	215
1982	8	62		1996	18	595
1983	16	1,468		1997	6	210
1984	8	11		1998	8	1,759
1985	11	379		1999	8	117
1986	14	2,000		2000	12	1,109
1987	12	627		2001	14	4,369
1988	15	2,640		2002	3	9
1989	14	584		2003	7	431
1990	17	604		2004	5	49
1991	19	871		2005	12	3,484
1992	16	2,991		2006	7	36,422
1993	3	0		2007	8	2,663
Total # of Fires (1980 - 2007) = 313				**Total Acres Burned (1980 - 2007) = 69,722**		

Source: BLM Wildland Fire Management Information System

Between 1980 and 2007, 6,465 acres within the Decision Area burned more than once (see Table 3-39).

Table 3-39. Fire Frequency, 1980-2007

Fire Frequency	Acres	Percent
Acres burned only once	59,875	90.25
Acres burned twice	6,041	9.11
Acres burned 3 times	421	0.63
Acres burned 4 times	3	< 1
Total	66,340	100

Between 1980 and 2007, lightning caused the majority of all fire starts within the Decision Area (see Table 3-40).

Table 3-40. Fire Ignitions by Source, 1980-2007

Cause	Number	Percent
Natural (Lightning)	175	55.91
Human	138	44.09
Total	313	100

Fuels Management

The number of fuels and restoration projects is increasing in order to help address vegetation issues within the Decision Area. Projects within the fuels program in the past five years have focused on achieving two goals: reducing fire hazards with an emphasis on WUI areas and restoring and/or improving FRCC within the Decision Area. Treatment types include chemicals, seeding, prescribed fire, and mechanical methods. These treatments were completed for a variety of reasons, including fuels reduction, protecting WUI areas, post-fire emergency stabilization and rehabilitation (ESR), and range infrastructure.

Emergency Stabilization and Rehabilitation (ESR)

An active ESR program exists within the Decision Area. The size of the ESR program is in proportion to the severity of the wildfire season. Emergency stabilization is defined as "planned actions to stabilize and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life and property resulting from the effects of a fire, or to repair/replace/ construct physical improvements necessary to prevent degradation of land or resources" (620 DM 3.3E). These actions must be taken within one year following containment of a wildfire. The objective of emergency stabilization is "to determine the need for and to prescribe and implement emergency treatments to minimize threats to life or property or to stabilize and prevent unacceptable degradation to natural and cultural resources resulting from the effects of a fire" (DM 620 3.4A).

Rehabilitation is defined as "efforts undertaken within three years of containment of a wildfire to repair or improve fire-damaged lands unlikely to recover naturally to management approved conditions, or to repair or replace minor facilities damaged by fire" (620 DM 3.3M). The objectives of rehabilitation are to:

1) Evaluate actual and potential long-term post-fire impacts to critical cultural and natural resources and identify those areas unlikely to recover naturally from severe wildfire damage.
2) Develop and implement cost-effective plans to emulate historical or pre-fire ecosystems consistent with approved land management plans, or if that is not feasible, to restore or establish a healthy, stable ecosystem in which native species are well represented.
3) Repair or replace minor facilities damaged by wildfire (620 DM 3.4B).

Restoration is the continuation of post-fire rehabilitation beyond the initial three years following a wildfire and is outside the scope of the ESR program (620 DM 3.3N)

Fire Management Plan

The Vale District Fire Management Program covers BLM, USFS, and state lands within the Planning Area, as well as fires on private land. The fire staff handles fire management responsibilities such as preparedness, prevention, and response to unplanned fires (wildfires), with dispatching occurring from the Vale Dispatch Center, in Vale, Oregon, and Northeast Oregon Interagency Dispatch Center in La Grande, Oregon.

The response strategy for each ignition that occurs within the Planning Area is based on the likely consequences to firefighter and public safety and welfare; potential effects to natural and cultural resources, both adverse and beneficial; and values to be protected, including adjoining lands that are not managed by the BLM. The protection of human life is the single overriding priority, with the other priorities being communities, property and improvements, natural and cultural resource values, human health and safety, and the costs of wildfire response. The response strategy can vary from aggressive initial action to monitoring with the intent of halting or slowing fire spread, altering potential effects, or "herding" the fire away from a specific value at risk of damage. Naturally ignited wildfires can be used to support movement towards or attainment of RMP goals and objectives.

The BLM's Fire Management Plan (FMP), which the BLM updates periodically, provides the implementation direction for managing fires to meet RMP goals and objectives. As such, it provides guidance for the appropriate response to a given wildfire, describes fire and fuels management and prevention/education activities in the Planning Area, and provides guidance for protection of firefighter and public safety during wildfire responses and prescribed fire projects. The FMP identifies values to protect and public health issues, describes fuels and restoration projects, and is consistent with resource management objectives. Potential response strategies and tactics outlined within the Vale District FMP vary by vegetation type and resource values at risk. Land use management direction from the Baker RMP (BLM 1989) influenced the portion of the FMP that includes lands managed by the Baker FO.

Fire Ecology

The Decision Area has seen an increase of annual grasses (cheatgrass and medusahead rye), as well as an accelerated fire return interval and frequency in annual grass infested areas. Fires that historically would occur in lower elevation sagebrush-perennial grass communities at a return interval of 50 to 85 years have shown a downward trend to the 5- to 25-year range in some locations. This has resulted in more aggressive suppression efforts by the Vale District in attempt to keep the remaining intact sagebrush communities from burning.

In contrast to the lower elevation sagebrush-perennial grass communities, there has been a significant lengthening of the historic fire return interval (> 100 years) within conifer forest, woodland, and higher elevation sagebrush perennial grass communities. As a result, there has been an increase in live and dead fuel loading within conifer forest stands and an increase in conifer encroachment into sagebrush and aspen plant communities. This situation has the potential to result in uncharacteristic fire size and/or fire severity should a wildfire occur. Fires would historically occur in the conifer forests and higher elevation sagebrush-perennial grass communities at a return interval of 5-35 years with a result of low- and mixed-severity fire effects.

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but includes the influence of aboriginal burning. The five natural (historical) fire regimes within the Planning Area are classified based on the average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on dominant overstory. Table 3-41 describes the natural fire regimes within the Planning Area.

Table 3-41. Natural Fire Regime in the Planning Area

Fire Regime	Frequency (years)	Severity	Number of Acres
I	0-35	Low and Mixed	34,868
II	0-35	Replacement	123,638
III	35-200	Mixed and Low	27,580
IV	35-200	Replacement	225,025
V	200+	Replacement and Mixed	17,314

Table 3-42 describes the dominant potential vegetation types within the Planning Area and the historical fire regime they occupy by using Landscape Fire (LANDFIRE) and Resource Management Planning Tools Project Biophysical Settings (BpS). The BpS represents the vegetation that may have been dominant on the landscape prior to Euro-American settlement and is based on both the current biophysical environment and an approximation of the historical disturbance regime.

Table 3-42. Dominant Vegetation/BpS Historic Fire Regimes

Potential Vegetation Type	BpS	Historic Fire Regime
Bluebunch Wheatgrass/Mountain Big Sagebrush	Inter-Mountain Basins Montane Sagebrush Steppe	II
Idaho Fescue/Mountain Big Sagebrush	Inter-Mountain Basins Montane Sagebrush Steppe	II
Idaho Fescue Grassland	Columbia Plateau Steppe and Grassland	II
Bluebunch Wheatgrass/Wyoming Big Sagebrush	Inter-Mountain Basins Big Sagebrush Steppe	IV
Bluebunch Wheatgrass Grassland	Columbia Plateau Steppe and Grassland	II
Idaho Fescue/Wyoming Big Sagebrush	Inter-Mountain Basins Big Sagebrush Steppe	IV
Sandberg's Bluegrass/Rigid Sagebrush	Columbia Plateau Low Sagebrush Steppe	IV
Basin Big Sagebrush	Inter-Mountain Basins Big Sagebrush Steppe	IV
Wetlands/Riparian Areas/Sedges/Willows/Rushes	Inter-Mountain Basins Montane Riparian Systems	IV
Aspen	Rocky Mountain Aspen Forest and Woodland	III
Dry Mixed Conifer Forest	Northern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest	I
Moist Mixed Conifer Forest	Northern Rocky Mountain Mesic Montane Mixed Conifer Forest	III
Ponderosa Pine	Northern Rocky Mountain Ponderosa Pine Woodland and Savanna – Xeric	II
	Northern Rocky Mountain Ponderosa Pine Woodland and Savanna – Mesic	I
Juniper Woodland	Columbia Plateau Western Juniper Woodland and Savanna	V

Altered wildfire regimes are believed to be a significant influence on loss of sagebrush and habitat available to fish and wildlife and special status species (e.g., sage-grouse) in the Planning Area. Fire kills most species of sagebrush and repeated wildfires, fueled by encroachment by other vegetation communities (e.g., juniper) and exotic annual grasses and other exotic species, alter vast acreage of sagebrush in the Planning Area. Annual grasses alter fire frequency from historic intervals of 35 to 100 years to shorter cycles of five or fewer years.

Coarse-scale FRCC classes have been defined and mapped by Schmidt et al. (2002) and include three condition classes for each fire regime. The classification is based on a relative measure describing the degree of departure from the natural (historical) fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (e.g., composition, structural stages); fuel composition; fire frequency, severity, and pattern; and other associated disturbances (e.g., insect-induced and diseased mortality, grazing, and drought).

The three condition classes within the Planning Area are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the natural (historical) regime. Low departure is within the natural (historical) range of variability, while moderate and high departures are outside of that range. To determine FRCC for Decision Area, an analysis of LANDFIRE National Data was completed. Currently, approximately 85 percent of the Decision Area is moderately to highly outside the historical range of variability (FRCC 2 and 3). This

means that the historic fire regimes have been moderately to highly altered from their historic timeframes by either increased or decreased fire frequency and are at moderate to high risk of losing key ecosystem components.

Fire Management Units

Fire Management Units (FMUs) are specific land management areas defined by fire management objectives, management constraints, topographic features, access, values to protect, political boundaries, and fuel types. The FMUs were created based on similarities of the specific resource objectives identified in the Baker RMP (BLM 1989). The FMUs will be revised pending approval of this RMP.

An Interdisciplinary (ID) team within the Decision Area developed nine FMUs that serve to define public land fire management objectives, physical characteristics, resource values, and treatment actions necessary to achieve resource management objectives, as identified in the current Vale District land use plans. These FMUs, which are listed below, have dominant management objectives and pre-selected fire response strategies assigned to accomplish these objectives, based on the Baker RMP (BLM 1989) direction.

A-2 - Baker Scattered Tracts FMU

These lands are located throughout the Planning Area and consist of scattered public land parcels, intermixed with private, USFS, Bureau of Reclamation (BOR), Bureau of Indian Affairs, and state lands. The Columbia and Snake rivers are the northern and eastern boundary of this FMU, respectively. The Baker scattered tracts extend to the town of Pendleton to the west and to the Planning Area boundary to the south. Vegetation is sagebrush, mixed conifer, annual rangelands, and juniper woodland.

Over the last 28 years (1980 to 2007), 166 fires in the Baker Scattered Tracts FMU have burned 14,650 acres of public lands, with the average fire size being 88 acres. Communities at risk in the FMU include Asotin, Baker City, Cove, Durkee, Halfway, Huntington, Keating, Pleasant Valley, Sticies Gulch, LaGrande, Minam, Milton-Freewater, Rogersburg, Troy, and Richland-Sparta.

A-3 - Pedro Mountain and A-3a - Hunt Mountain FMUs

The Hunt Mountain FMU is located approximately 10 miles to the northwest of Baker City. The area is bordered to the west by the Wallowa-Whitman National Forest. The Pedro Mountain FMU is located approximately 25 miles southwest of Baker City and 10 miles south of the town of Durkee. These polygons are predominantly timber types, with scattered areas of mixed conifer and juniper, and are more than 95 percent surrounded by private property.

Over the last 28 years (1980 to 2007), 18 fires have burned 1,468 acres of public, with the average fire size being 82 acres within the A-3 and A-3a FMUs. No communities have been identified as being at risk in these FMUs.

B-5 - Farewell Bend, B-5a - Table Rock, B-5b - Burnt River, B-5c - Iron Mountain, B-5d - Powder River FMUs

Collectively, these five FMUs lie in a band along Interstate 84 (I-84), between Ontario and Baker City and consist of scattered public land parcels, intermixed with private, USFS, and state lands. These FMUs are surrounded on three or more sides by private lands. The Farewell Bend FMU is located southwest of Huntington, Oregon, primarily on the south side of I-84. The Table Rock FMU is a few miles northwest of the Farewell Bend FMU, also on the south side of I-84. The Burnt River FMU starts approximately 5 miles southwest of the town of Durkee and lies entirely on the west side of Burnt River. The Iron Mountain FMU lies directly north of Durkee, almost entirely on the north side of I-84. The Powder River FMU sits a few miles north of the Iron Mountain FMU, and south of the Powder River. Vegetation is sagebrush, mixed conifer, and juniper woodland.

Over the last 28 years (1980 to 2007), 74 fires have burned 14,655 acres of public land, with the average fire size being 198 acres within the five FMUs. Communities identified as being at risk in these five FMUs include Durkee, Huntington, Keating, and Pleasant Valley.

B-6 - Brownlee FMU

The Brownlee FMU occupies most of the land on the Oregon side (west bank) of Brownlee, Oxbow, and Hells Canyon Reservoirs. This polygon begins at the town of Huntington, Oregon, and continues north to the Hells Canyon Wilderness. The western edge is bound by private lands in the southern portions and the Wallowa-Whitman National Forest to the north. This FMU ranges from high elevation grasslands to low river bottom areas of grass with scattered brush.

Over the last 28 years (1980 to 2007), 53 fires have burned approximately 38,496 acres of public land in the Brownlee FMU, with the average fire size being 726 acres. Communities at risk include Halfway, Huntington, Oxbow, and Richland.

B-7 - Big Lookout Mountain FMU

This FMU surrounds Big Lookout Mountain, approximately 10 miles east of Durkee and 5 miles northeast of Weatherby, Oregon. The Big Lookout FMU is bounded by the Brownlee Reservoir FMU to the south and east and by private lands to the west and north. This polygon is predominantly a timber area with granitic soils and steep terrain. The timber type is predominantly Douglas-fir, with some juniper encroachment on the perimeters. This area is a high recreational use area, thus the threat of human caused unplanned ignitions is greater than natural caused ignitions. Steep terrain greatly limits access to aerial tactics and road-based tactics.

Over the last 28 years (1980 to 2007), five fires have burned 14 acres of public lands, with the average fire size being 3 acres. No communities have been identified as being at risk in this FMU.

b. Trends

From 1980 to 2007, 313 wildfires have burned approximately 69,722 acres (17 percent) of the Decision Area. The average yearly occurrence of fires in the Decision Area is 11 fires having burned 2,490 acres between 1980 and 2007.

Although there has not been a significant increase in the annual number of fire ignitions or acres burned over the past 28 years, the potential for more acres to be burned exists. Fire frequency and fire severity are expected to be higher than what occurred historically since the majority of the Planning Area is FRCC 2 and 3. Invasion of annual grasses and conifer woodlands into shrub and grassland BpS, as well as increased live and dead fuel loads within conifer stands, are the primary factors for this potential trend.

Wildland fire management options for the Baker FO typically include fire suppression; prescribed fire; non-fire fuels treatments that include mechanical, biological, chemical, and biomass removal; post-fire rehabilitation and restoration; and community protection, assistance, and rural fire assistance. In an effort to minimize the impact of wildfire and reduce the spread of invasive and noxious weeds, the Baker FO makes extensive use of the ESR program. Collectively, the fire management program addresses current FRCC and impacts to other resources. It is expected that due to the current fire regime conditions within the Planning Area and factors outside the control of the fire program (e.g., invasive weed control, vegetation management issues, drought, grazing), FRCC would continue to deteriorate.

Based on prolonged drought conditions and the establishment of invasive species, the BLM anticipates that the potential for uncharacteristic wildfire effects will continue under present management in the lower elevation sagebrush plant communities. The BLM has also anticipated that under continued management, live and dead fuel loadings within forest stands and conifer/juniper encroachment into aspen and higher elevation sagebrush communities will continue to occur, increasing the risk for wildfires with potentially uncharacteristic fire effects. Management actions to reduce fire severity, which include green strips, hazardous fuel reductions, and rehabilitation, could slow the decline of ecological functioning.

12. CULTURAL RESOURCES

a. Current Condition

This section provides a description of the cultural resources known or expected to be present in the Decision Area and provides a summary of the documented condition of recorded cultural resources and projected trends in cultural resource conditions using available data.

Cultural resources are locations of human activity, occupation, or use. They include expressions of human culture and history in the physical environment such as prehistoric or historic archaeological sites, buildings, structures, objects, districts, or landscapes. These resources are generally divided into two groups, either "above ground" (buildings, structures and objects) and "below ground" (archaeological sites), with consequent differences in identification and treatment for each resource type. “Below ground” resources form over time, as cultural items are lost, discarded or left behind and are covered by a series of earth layers or strata laid down over a period of time. The sequential order of the strata from bottom to top of the deposit shows the relative age of any object contained in the various layers (Aikens 1986).

Cultural resources can also include traditional life ways and practices. These resources can be natural features or places with plants and animals that are considered important to a culture, subculture, or community.

The term “cultural resources” is a broadly used term that refers to a diverse array of resources described in a series of laws and associated regulations. These include the National Historic Preservation Act (NHPA) that requires consideration of “historic properties” determined to be eligible for or listed in the National Register of Historic Places (NRHP). Historic properties as defined in the NHPA can include places of traditional cultural/religious significance. The Native American Graves Protection and Repatriation Act provides a process for protecting human remains, associated funerary objects, objects of cultural patrimony, and sacred items located on federal lands. The Archaeological Resource Protection Act passed in 1979 extends protection to archaeological resources determined to be over 100 years of age. The American Indian Religious Freedom Act and EO 13007 directs federal agencies to safeguard access to areas needed for the practice of American Indian’s religious practices and to protect the integrity of sites considered sacred to Native Americans. Other statutes and regulations also provide for the consideration of resources and areas under the broadly defined term of “cultural resources.” (See Appendix 1.1 further description of laws, regulations, and policies related to the management of cultural resources.)

The vast majority of cultural resources within the Decision Area have been identified during field surveys conducted for the purposes of complying with Section 106 of the NHPA. In accordance with the requirements of the NHPA, identified cultural resources require evaluation in order to determine their eligibility to be listed in the NRHP. Eligibility is determined based on criteria established by the 1966 NHPA implementing regulations (36 CFR Part 60). Those cultural resources found to be eligible for the NRHP are referred to as “historic properties.” It is important to note, however, that most cultural resource sites in the Decision Area have not been recently or formally evaluated for their eligibility for listing on the NRHP. Formal evaluations often require archaeological test excavation, analyses, and more in-depth reporting to be conducted. Due to financial considerations, this work is not currently being undertaken and, consequently, archaeologists have relied on surface evidence to assess NRHP eligibility potential of many of these sites. Quite commonly, archaeological sites judged on their surface evidence to

contain the potential to yield important information are typically considered eligible and are avoided during surface-disturbing activities.

The BLM's land use and cultural resource planning directives require categorizing known and expected cultural resources according to their nature and relative preservation value. Resource types are allocated to appropriate use categories that include scientific use, conservation for future use, traditional use, public use, experimental use, or discharged from management. The BLM has established six use categories, which are as follows:

- **Scientific Use:** Any cultural resource determined to be available for scientific or historical study using currently available research techniques.
- **Conservation for Future Use:** A cultural resource included in this category is deemed worthy of segregation from all other land or resource uses, including cultural resource uses that threaten the maintenance of its present condition or setting.
- **Traditional Use:** Any cultural resource known to be perceived by a specified social and/or cultural group as important in maintaining the cultural identity, heritage, or well-being of the group.
- **Public Use:** May be applied to a cultural resource found to be appropriate for use as an interpretive exhibit in place or for related educational and recreational uses by members of the general public.
- **Experimental Use:** May be applied to a cultural resource judged well suited for controlled experimental study to be conducted by the BLM or others concerned with the techniques of managing cultural resources that would result in the property's alteration, possibly including loss of integrity and destruction of physical elements.
- **Discharged from Management:** Assigned to cultural resources that have no remaining identifiable use, such as small surface scatters of artifacts or debris.

As noted above, rather than being initiated by BLM's cultural resources program, almost all cultural resource inventories that have been conducted within the Decision Area are project-specific and have been re-conducted for the purposes of complying with Section 106 of the NHPA. Thus, the BLM has not necessarily conducted surveys in areas of high site potential or in order to provide a representative sample of cultural resources within specific locations of the Decision Area. In total, approximately 10 percent or less of the Decision Area has been inventoried for cultural resources. Pedestrian surveys of the entire Baker Resource Area are cost prohibitive given current funding. Additionally, environmental changes over time make these surveys out of date after a relatively short period, approximately ten years. Thus, proposed projects are surveyed and consulted on with the State Historic Preservation Office and local and regional, federally recognized Native American Tribes on a project by project basis prior to project implementation, and in conformance with cultural resource laws and regulations, including Section 106 of the NHPA.

The BLM is developing predictive modeling efforts on the allotment level in association with grazing permit renewal. These models should be helpful for targeting and identifying areas with high probability for containing important cultural sites that could subsequently be inventoried.

The Baker FO currently administers 487 identified cultural resource sites in the Decision Area. These sites range in surface area from several acres to as little as a few square yards. These include sites from the "pre-contact" or prehistoric period when Euro-Americans first visited the native peoples of northeast Oregon (early 1800s), and the historic or post-contact period that contains evidence of prehistoric and historic occupation/use (referred to as multi-component sites).

Of the 487 known sites, 16 percent have unknown condition. This is due to the existence of legacy data, where site condition was not described, or insufficient data about site condition during documentation. The condition of the remaining sites, as indicated by site records, is as follows: 54 percent were reported to be in excellent to good condition (for example, at least 60 percent of the site surface appeared little disturbed) and 30 percent were reported to be in fair to poor condition (more than 60 percent of the site surface appeared disturbed).

Since 1976, archaeologists have identified site condition based on evidence of prior surface disturbance at the time of site recording. However, because few archaeological sites have been formally tested by subsurface investigations, past surface condition may not necessarily be an indication of the present potential of a site to retain deposits that would inform upon prehistoric or historic use and, thus, be potentially eligible for the NRHP. Updated information and re-evaluation of cultural resource sites may be necessary if impacts to a site are proposed.

Prehistoric Sites

The record for American Indian occupation of the Columbia Plateau and Great Basin extends back at least 11,500 years. Most of the public lands in the Planning Area are located at the interface of these two broad geographic areas, including the Blue Mountain Physiographic Province and the Umatilla Plateau. Although the archaeological record for the Blue Mountains and adjacent regions provides evidence of occupation during the early Paleo-Indian period, most archaeological sites recorded in the Decision Area likely date from 7,600 to 200 years ago.

At the time of Euro-American contact, peoples of the southern Columbia Plateau and northern Great Basin areas occupied and used the Planning Area on a seasonal basis. These peoples included the Umatilla, Cayuse, Walla Walla, Nez Perce, Northern Paiute, Northern Shoshone, and Bannock. Today, these tribal Nations have reservations in Oregon, Idaho, and Washington.

In general, the settlement and subsistence patterns of Columbia Plateau cultural groups was tied to a variety of riverine and upland resources, including fish, large and small game, and root resources. A settlement pattern of semi-permanent houses at low elevation winter villages, with temporary subsistence camps in the uplands at traditional fishing, hunting, and plant gathering grounds, dates back thousands of years. Annual subsistence activities were strategic and

complex, as people moved over large areas to procure resources when they became available for harvest in geographically localized environments.

Great Basin peoples were highly mobile gatherers and hunters, following a seasonal cycle of movements designed to exploit available plant and animal resources in the most efficient manner. The fusion and fission of small groups during particular seasons in response to resource availability was characteristic of the Northern Paiute. Gathering seed and root plants and hunting were the main subsistence activities. Animals, especially hares, pronghorn antelope, mule deer, bighorn sheep, and insects formed a major aspect of subsistence. Anadromous or resident fish were taken from the Snake River, interior drainages, and lakes.

Common prehistoric archaeological site types in the Decision Area are lithic artifact scatters and toolstone procurement localities. Less common site types are rock shelters, rock art, rock features (i.e., pits and cairns), and housepits.

Historic Sites

National events helped mold the nature of historic resources within the Planning Area. Early explorers and fur traders traversed the Planning Area, followed by missionaries, emigrants, and military expeditions. Historic features and sites include early emigrant trails, historic wagon routes, pack trails and stage roads; historic gold mining sites, including entire mining districts; and homesteads, ranches, and irrigation ditches. These sites are related to national events that attracted Euro-Americans to the region between 1840 and the first half of the 20th century.

The Oregon Trail became a key transportation route from the Snake River to the Columbia River for emigrants traveling to the Willamette Valley in western Oregon. Between 1843 and 1855, approximately 60,000 emigrants traveled along the trail through northeast Oregon. In 1978, Congress designated the Oregon Trail as a national historic trail. In addition to the Oregon Trail, routes of several stage and wagon roads dating from the early 1860s to 1900 are present in the Planning Area. A network of freighting and stage roads was established and improved from Umatilla Landing on the Columbia River to gold mining camps, hamlets, and towns on the Grande Ronde and Powder rivers. The railroad was completed through the Planning Area in the 1880s, facilitating the growth of communities all along the railroad line from Huntington to Hermiston. At the turn of the century, a railroad line was built along the western shore of the Snake River to reach mines near Homestead. Most of the railroad route was inundated when Brownlee Reservoir was filled in the 1950s.

Within the Decision Area, the Baker FO has designated seven locations on the Oregon Trail as an ACEC. Two interpretive sites on the Oregon Trail include the National Historic Oregon Trail Interpretive Center (NHOTIC) at Flagstaff Hill, and the Echo Meadows Interpretive Wayside. These Oregon Trail locations were identified using maps published in 1981 by the NPS and were designated high potential sites and segments within the Oregon-California Trail Interagency Comprehensive Management Plan. Oregon Trail route locations on public lands have wagon swales or unimproved traces that vary from about 1/4 to 1 mile in length. To date, no emigrant

camps have been identified in the Decision Area. Four locations (Echo Meadows, Flagstaff Hill, Chimney Creek, and California Gulch) have wagon ruts or historic trace features in good condition. Other Oregon Trail resources in the Decision Area include the trail route at White Swan, historically altered by wagon and motorized vehicle travel, and two gradually eroding route segments west and northwest of Straw Ranch Creek. Volunteers have also initiated studies of alternate early emigrant routes.

Early prospecting in the area occurred in 1861 when a party of miners discovered gold in gulches southwest of present day Baker City. A gold rush to the Blue Mountain region ensued, and the mining camp of Auburn was quickly established in Blue Canyon. Within three years, mining districts had been established throughout the present day Baker County region, in the Powder, Burnt, and Snake river drainages. These historic mining districts still contain remnants of past activities including prospects, shafts, adits, mining ditches, structures, foundations, and debris scatters. Historic placer and lode mining sites date from the late 1860s to the 1940s. Good condition features of the historic Auburn site and the El Dorado Mining Ditch are located partly on public lands.

By the late 1860s through 1870s, cattle and sheep were driven into the region and ranches and homesteads were established within the Planning Area. Large sheep operations were established in Umatilla County. Remnants of ranch or homestead operations include corrals, fences, line shacks and cabins, foundations, and debris scatters. Those who took up the earliest land and water claims in the lowlands built irrigation systems to water fields and grain crops. At the turn of the century in Umatilla County, the federal government launched a program to promote reclamation homestead settlements by developing major irrigation facilities to water dry uplands near the lower Umatilla River.

Common historic sites in the Planning Area that relate to homesteading and historic mining, dating from the late 1800s and early 1900s, include the remains of historic wagon roads, homestead and mining cabin sites, placer mines, ditches, and unassociated trash dumps. Less common historic sites include inscribed aspen trees, historic cemeteries, historic mining camps or buildings, and former sawmill sites. Documentation and monitoring of these sites have been ongoing, however today restoration and stabilization projects of historic resources have been limited within the Planning Area.

Prehistoric and historic archaeological sites are distributed across all watersheds in the Planning Area. Sites are commonly found in environmental locations influenced by the existing terrain and availability of water or resources of interest. For example, there is a high potential to find prehistoric and historic sites near any water bodies such as rivers, streams, springs, and lakes. Evidence of past use and occupation may also be found on ridges and areas with abrupt changes in topography, as these areas often provide a view of the surrounding resources. Although there are exceptions, cultural resources are less likely to occur on steep slopes and rocky exposures.

Prehistoric and historic archaeological properties are located on public lands within the boundaries of the Nez Perce-Snake River National Register District and along Joseph Creek in Oregon. Properties in the National Register District include rock art, lithic scatters, and probable pit house or storage features in good condition. Cultural resources are among the important and relevant values identified for management in the Grande Ronde ACEC and the Powder River WSR Plan. The Oregon Trail and portions of the Auburn site and El Dorado Ditch, which are on public lands, are some examples of important historic properties in the Decision Area.

b. Trends

Historic and prehistoric sites are nonrenewable resources affected by both natural factors and human actions. Sites are susceptible to natural processes such as weathering, water and wind erosion, and animal activity. Human activities that can affect cultural resources include intentional and unintentional actions. As such, these irreplaceable resources tend to deteriorate over time.

The degree to which natural processes and human activities affect a site depends upon the site type, the site setting, and the nature, intensity, and duration of the impacting process/activity. Natural processes are dynamic and therefore have a constant influence on sites. Sources of change to condition listed on site forms in the Decision Area include livestock or wildlife trampling, recreation use, motorized travel including OHV use, stream bank and reservoir shoreline erosion, historic and contemporary mining, vandalism or looting (i.e., unauthorized collection), animal burrowing, natural erosion, weathering, and decay.

Based on available data, most cultural resources identified through compliance activities associated with Section 106 of the NHPA are in stable condition because current management measures typically avoid or mitigate potential impacts. In these cases, the trend is towards a desired condition of protection.

Qualitative observations indicate that ground disturbance associated with recreational activity such as OHV use and concentrated grazing use in riparian areas contributes to a downward trend for some cultural resources. For example, continual OHV use on a small parcel of public land near Hermiston Oregon has led to impacts associated with physical crushing and erosion of three previously document historic sites. Shovel testing would be necessary to determine the extent of site damage. Protective fencing would protect sites from further damage, but cannot restore site integrity lost due to past physical impacts of OHV use. Another type of impact to cultural site integrity occurs when cultural resources such as lithic scatter or historic refuse are located around a natural or developed water source. Cattle congregate near water, especially during hot weather, creating a disturbance area (sometimes called a sacrifice area) defined by a visible lack of vegetation. When disturbance areas are located on top of cultural resources, site integrity is impacted by physical crushing, horizontal and vertical movement, and erosion of protective soils (Coddington 2008; Ozborn et. al. 1987). Qualitative observations also indicate the trend is downward for archaeological sites affected by natural stream or riverbank erosion, and for historic structural remains subject to ongoing weathering and decay.

Projected increases in public land use may contribute to inadvertent and intentional damage to cultural resources. Sites will continue to be susceptible to natural wind and water erosion, looting, and vandalism. Impacts to traditional cultural landscapes may occur during future energy developments. The current lack of a well-defined travel management plan (TMP) for OHV uses has the potential to result in impacts to archaeological sites. However, a TMP will be completed following the RMP and will address areas of potential impacts by OHVs to archaeological resources. Until the TMP is completed, conflicts between OHVs and archaeological resources will be resolved on a case-by-case basis. In addition, interim measures that restrict motorized travel to existing road and trails would reduce impacts to cultural resources until the completion of the TMP.

13. RESOURCES OF IMPORTANCE TO NATIVE AMERICAN TRIBES

a. Current Conditions and Trends

Tribes with Interests in the Planning Area

Seven federally recognized Native American tribes have indicated interest in public lands managed by the Baker FO, including the following:

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

Because the BLM manages lands ceded under treaties, or that are within the historical and traditional use areas, it has a responsibility to consult with Tribes to consider the conditions necessary for Indian tribal members to satisfy treaty rights and continue traditional uses in areas of interest. Currently, tribal members may use some public land resources for subsistence and cultural purposes, although the BLM may not know specific locations of such resources.

Tribes with off-reservation treaty rights and traditional interests within the Planning Area include the Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, and Confederated Tribes of the Warm Springs Reservation. The Shoshone-Bannock Tribes of the Fort Hall Reservation also have treaty rights for hunting on unoccupied federal lands. The Burns Paiute Tribe, Confederated Tribes of the Colville Reservation, Shoshone-Bannock Tribes, and Shoshone-Paiute Tribes have traditional interests in the Planning Area that need to be considered during land use and project planning under various federal laws, regulations, and EOs.

Treaty Rights and Interests

Native American interests in lands of the Decision Area include a wide range of economic, social, traditional, and religious practices. For example, these can range from the protection of burial and sacred sites, to access and sustainability of root gathering or fishing locations, or interest in water quality and ecological health that sustains fishery and wildlife habitat. Providing habitat requirements for treaty resource and access to traditional procurement locations is essential to the exercise of treaty rights and tribal interests.

Treaty rights are not rights granted from the United States, but rather are rights specifically reserved (retained) by the tribes under the terms of treaties or agreements. Examples of off-reservation reserved treaty rights on unoccupied federal land include plant gathering, hunting and fishing rights at usual and accustomed places, and grazing rights.

In the latter half of the 19th century, the Federal government negotiated treaties and agreements with specific tribes and bands that historically occupied the region, though the Federal government did not ratify or honor all treaties, and not all Tribes or bands agreed with such treaties. Historically and prehistorically, Tribes and bands used and occupied portions of the Planning Area.

The United States and its agencies, including the BLM, have a trust responsibility to Indian Tribes. As a federal land managing agency, the BLM has the responsibility to identify and consider potential impacts of BLM plans, projects, programs, or activities on Indian treaty rights and resources and areas of traditional cultural interest for maintaining the cultural practices, continuity, and identity of tribal communities. The BLM has the responsibility to ensure that meaningful consultation and coordination is conducted on a government-to-government basis with federally recognized tribes. Through the consultation process, the BLM and tribes identify issues and concerns about treaty rights and resources, sacred sites, traditional uses, and properties of traditional religious and cultural importance that need to be considered in land use or project plans.

An MOU between the Vale District Office and the Nez Perce Tribe provides for cooperative wildlife management on public land parcels adjacent to the Nez Perce Tribe's Precious Lands Management Area in northeast Oregon. Memorandums of understanding also exist for coordination and consultation on RMPs and issues between the BLM and the Confederated Tribes of the Umatilla Indian Reservation, Burns Paiute Tribe, and Confederated Tribes of the Warm Springs Reservation.

Geographically, areas of interest can be approximated to encompass broad areas of tribal interests and concerns. According to ICBEMP (USFS and BLM 1997), tribal interest areas are open to ongoing interpretation, discussion, and consultation with tribes on a project-by-project basis. Interest areas, which may be overlapping, have sometimes been called a tribe's aboriginal territory, subsistence range, traditional use area, or zone of influence. By contrast, the term

"usual and accustomed area" refers to Steven's treaty language rights and interests, which may help define the spatial extent of a tribe's interest area (USFS and BLM 1997).

Since the signing of treaties and agreements, the availability and opportunity for access to natural resources and culturally significant places used by tribes has changed. There has been a general decline in native fish, game, and plant species or their habitat, while land ownership patterns and extractive resource uses have dramatically altered the pre-contact landscape. The loss of resources or access to traditional places can affect Native American socio-cultural activities associated with plant, fish, or animal procurement or traditional cultural practices.

Traditional Use and Sacred Sites

The Decision Area provides habitat for fish, wildlife, and plants of cultural importance to tribes. There is little information available on specific traditional use locations or traditional practices by Native Americans exercising their rights and interests in the Decision Area. Identification of traditional use or properties of traditional religious and cultural importance is an ongoing process addressed during BLM and tribal consultation on individual projects. With only a few exceptions, the BLM is not aware of ongoing, current use of specific locations for resource gathering or religious and ceremonial practices in the Decision Area. Representatives of several tribes have previously identified concerns about specific development projects or land tenure adjustments in the Decision Area.

Cultural plant habitat exists on public lands in the Decision Area, but the condition, distribution, abundance, and trend of cultural plant communities is often unknown. Various historical factors since European contact have affected the availability of cultural plants for tribal use within the Decision Area. The invasion of noxious weeds, exclusion of fire, impacts from resource extraction, road building, and other factors have contributed to declines and dislocations in many of the plant species important to tribes within the interior Columbia Basin region.

Cultural plants are those plants important to tribal groups for subsistence, economic, medicinal, and ceremonial purposes. Ethno-habitats are plant habitats defined by tribal people as having importance. Table 3-43 presents several cultural plant ethno-habitats, with some examples of key cultural plants.

Table 3-43. Cultural Plant Ecological Groupings (Ethno-Habitats)

Habitat	Cultural Plants
Lithic soils	Sagebrushes and roots such as; biscuit root , bitterroot, and yampa
Wet/Moist Meadows	Camas, bistort, sedge, tobacco root, cow parsnip
Riparian	Chokecherry, currant, serviceberry, willow, red osier dogwood, elderberry, hawthorn, rose, Indian hemp
Wet Woodlands	Western spring beauty, yellow bell
Dry slopes and Grasslands	Wild onion, sego or mariposa lily, balsamroot, hyacinth
Forested Areas	Huckleberry, black tree lichen, mushrooms, pine species

Cultural plants occurring in non-forested habitats may be at risk from decreases in habitat quality that could influence harvestability and result in a decline in the availability of cultural plants for collecting. Plants such as biscuit root, bitterroot, yampa, and other cultural plants are important to the maintenance of tribal culture. The ethno-habitat described as "wet meadows" is another community of concern to the tribes as it contains specific plants of interest to the tribes. However, "wet meadow" habitat is not common within the Decision Area, making it very unlikely that Baker FO will have a substantial effect on the availability of these types of cultural plants. The occurrence of culturally important plant species may be measured through linkage with existing dominant overstory categories or associated soil types. Informal observation suggests that shallow lithosol soil types in the Decision Area are likely habitat for geophytic plants (see cultural plants associated with "Lithic soils" in Table 3-43)

In 2008, the BLM and the Confederate Tribes of the Umatilla Indian Reservation began working on a collaborative project to model areas of potential habitat for traditional plants. This project has resulted in the identification of 122,139 acres of potential habitat within the Burnt River and Powder River watersheds. Future data collection and monitoring should provide valuable data on abundance, type, distribution, and trends within the areas of modeled habitat.

Traditional cultural properties are also present within the Planning Area, which are defined as those sites associated with the "beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices" (Parker and King 1990).

Historic properties of religious and cultural significance to tribes, commonly known as Traditional Cultural Properties, are also present within the Planning Area. Traditional Cultural Properties have been defined as those sites associated with the "beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices" (Parker and King 1990). Historic properties of religious and cultural significance to tribes are specifically mentioned as a type of historic property in the NHPA and include sites and areas for which the knowledge of their presence and significance is largely only known by the tribe.

The tribes have formally identified only a few sacred sites to the BLM; however, this may be due in part to tribal representatives' preference to protect these locations through nondisclosure. Tribes often consider traditional village locations and/or subsistence procurement localities to be important properties of traditional religious and cultural importance. Due to confidentiality concerns, the BLM may be unaware of a number of sacred sites or traditional resource procurement sites that may occur in the Decision Area.

14. VISUAL RESOURCES

The BLM visual resource management (VRM) system consists of the visual resource inventory (VRI) phase, the VRM planning phase, and the subsequent VRM plan implementation phase, where project proposals are analyzed using the visual contrast rating system. The inventory phase involves identifying the visual resources of an area and assigning them to VRI classes. The BLM's VRI process (described in detail in BLM Handbook H-8410-1) involves rating the visual appeal of a tract of land, measuring public concern for its scenic quality, and determining whether the tract of land is visible from travel routes or observation points:

- **Sensitivity**: Measuring public concern for its scenic quality. This concern is captured as High, Medium, or Low.
- **Distance zones**: A subdivision of the landscape into zones (foreground, middleground, background, and seldom seen) as viewed from an observer position. Distance zones are captured as being Foreground/Middleground, Background, or Seldom Seen areas.
- **Scenic Quality**: Involves rating the visual appeal the relative worth of a landscape from a visual perception point of view using key factors of landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications during evaluation for determining quality. This value is depicted as Special Areas, “A”, “B”, or “C” ratings, with “A” constituting the higher value of the alphabetized quality ratings.

Through BLM’s Resource Management Planning process, VRI results are considered in multiple use analyses when designating VRM Classes. VRM Class designations may be similar to or different from the VRI Class assignments, depending on the multiple-use resource management priorities of the RMP. The VRM Classes established visual management objectives, as follows:

- **Class I Objective**: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
- **Class II Objective**: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- **Class III Objective**: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.
- **Class IV Objective**: To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

During RMP implementation, project proposals are assessed for impacts to visual resources and conformance with assigned VRM class objectives through use of the visual resource contrast rating system, which also informs potential mitigation of visual impacts to bring proposals within VRM Class objectives or to further reduce impacts where VRM objectives are being met.

a. Current Condition

The most valued VRI class, VRI Class I, is associated with previously made management decisions (congressional or administrative) in order to preserve the natural landscape. Examples include wilderness areas, WSAs, some WSRs, and some ACECs. Visual Resource Inventory Class II and III areas are generally the scenic mountain ranges near communities and along high use waterways, interstates, state highways, and other well-traveled corridors in the Planning Area, as well as some of the remaining ACECs, such as the Oregon Trail ACEC. The remainder, more develop portions of the Decision Area contains low quality scenery, or is seldom seen falls into VRI Class IV landscapes. These areas are determined not to have significant or unique views by comparison to other landscapes in the Planning Area. The BLM analyzes all proposed projects in the Decision Area for their impacts to VRI values and conformance with the VRM classifications and includes, where possible, mitigation measures to design structures that blend in with the natural background to minimize disturbances and reduce the visual contrast with the landscape. While following the visual guidelines for each VRM class maintains or enhances the Decision Area's visual resources, changes in the boundaries of the VRM classification areas due to disposal or acquisition of lands over the last 20 years (primarily in the northern end of the Decision Area) has created the need for more up-to-date descriptions and mapping of these areas.

Table 3-44 reflects only the acreages and classifications for the Decision Area at the completion of the Baker RMP (BLM 1989), which are also identified on Map 2-1 in Chapter 2. Since that time, there have been changes to these statistics in the form of land acquisition/disposal, and designation of WSRs and ACECs.

Table 3-44. Current VRM Management Classes in the Decision Area (Baker RMP 1989)

Class	Acreage	Percent of Decision Area
I	17,923	4%
II	142,915	34%
III	57,354	13%
IV	208,698	49%
Total	426,890	100

Previously inventoried public lands were designated VRM classes with established objectives through the Baker RMP (BLM 1989) and subsequent plan amendments, or through specific management plan development. Since then, the Decision Area has been re-inventoried according to BLM VRI guidelines (Manual H-8401) with emphasis in areas of high public use and visibility, such as those along interstate and state highways, rivers, reservoirs, highly desired recreational areas and major community centers. Utilizing distance zones, scenic quality, and sensitivity, along with other key features of the visual landscape that receive greater public attention, which include unique landforms, historic components, pristine areas, and large solid blocks of public lands, an inventory classification for the Decision Area was established. The acreage associated with the VRM Inventory is shown in Table 3-45:

Table 3-45. Current VRI Inventory Classification in the Decision Area 2010		
Class	**Acreage**	**Percent of Decision Area**
I	18,543	4%
II	241,779	56%
III	142,764	33%
IV	25,338	6%
Total	428,425	

Public perception of and concern for visual resources is critical in land-use planning. The visual character of the Decision Area is valuable to a spectrum of residents, recreational users, and sightseeing travelers. Receptors sensitive to visual resources on public lands include people recreating and areas of human settlement. Recreation activities on public lands include, but are not limited to, picnicking, wildlife watching, camping, biking, hiking, OHV use, fishing, driving for pleasure, hunting, rafting, power boating, and photography. The primary areas of human settlement in the Planning Area exist along I-84 and state highways, and include Baker City, La Grande, Pendleton, Milton-Freewater, Hermiston, and Enterprise. Numerous smaller towns also exist throughout the Planning Area and were identified and considered during the inventory process. The condition of visual resources is more noticeable from these areas of high public use and visibility and, therefore, makes the sensitivity for visual resources near these community areas "high."

Along with communities and major transportation systems, the Snake, Powder, Wallowa, Grande Ronde, South Fork of the Walla Walla river canyons, as well as Joseph Creek canyon, are key visual elements of the Decision Area. These canyons are generally primitive and undeveloped and offer few access points. These and other rivers and streams in the Decision Area slice through the Grande Ronde Basalt Plateau of the Columbia River Flood Basalt Province, winding alternately through occupied and unoccupied valleys, deep canyons cutting through thick layers of basalt cliffs, and steep rugged hills. Riparian vegetation at the river and stream edges contrasts with hills of grass, sagebrush, and pockets or stringers of timber that provide distinct color changes associated with the seasons.

The erosion of the thick layers of basalt in conjunction with the unique lava dikes of the area have created unusual and interesting formations that add to the special uniqueness of the Decision Area and serve as scenic landmarks for canyon visitors. For example, OPRD identified the Wallowa and Grande Ronde rivers as containing “special attributes” for inclusion into the state scenic waterways system.

Vegetation in the Decision Area ranges from fir and pine trees in the uplands to high desert communities of sagebrush and hackberry in the lowlands. Ranches intermingled with public lands also add an interesting contrast to the landscape.

The Blue and Eagle Cap ranges of the Cascade and Wallowa mountains are also prominent landscape features in the Decision Area. These landscapes are towering landforms that have weathered over time and are visible, at least in part, from most locations within the Decision

Area. The remaining public lands contain important visual elements and contribute to providing open space views on plateaus and rolling hills.

b. Trends

While much of the Decision Area still consists of areas with relatively undisturbed characteristics, decades of logging, grazing, fire suppression, road building, mineral extraction, uncontrolled motorized use, and the creation of infrastructure such as roads and utilities have left an imprint on the land and on the overall scenic quality. In general, portions of the Decision Areas that are not easily accessible have retained a higher level of natural appearance, due to either a lack of legal public access or terrain characteristics. In areas accessible by motorized use, increased and, in some cases, unauthorized OHV use has created a proliferation of new routes and trails, affecting scenic quality in some areas. The degree of such impacts varies with the amount of use, accessibility of the areas, as well as the characteristic quality and location of the area. For the most part, however, the sparse population and relatively small population centers have left much of the region appearing in a relatively natural state.

The general condition of visual resources within the Decision Area can be considered stable. However, current trends in the demand for facility developments, both large and small scale, on public lands (i.e., communication sites, power transportation lines, wind energy development) is creating more impacts to the visual integrity of the landscapes of the Decision Area. Although some of these facilities currently exist on public lands, they have had little impact on visual resource values due to placement, number, size, or visual mitigations associated with the development area. However, the current demand and direction for renewable energy projects is threatening the visual character of the lands both directly and cumulatively, as more private lands are being developed and more applications for public lands are pursued.

15. LANDS WITH WILDERNESS CHARACTERISTICS

Section 201(a) of the Federal Land Policy and Management Act (FLPMA) directs the BLM to "prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values," which includes wilderness characteristics. The BLM must keep this inventory current to reflect changes in conditions and to identify new and emerging resource and other values. Consistent with FLPMA and other applicable authorities, the BLM will consider the wilderness characteristics of public lands, other than existing wilderness areas and wilderness study areas (WSAs), when undertaking land use planning. The BLM will use the land use planning process to determine how to manage lands with wilderness characteristics as part of the BLM's multiple-use mandate. An area contains wilderness characteristics if it possesses sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation (see definitions below). Such identified lands also may possess supplemental values, such as ecological, geological, or other features of scientific, educational, scenic, or historical value.

- **Size**: The size of an area is sufficient to contain wilderness characteristics if it is one of the following:
    1. A roadless area with over 5,000 acres of contiguous BLM lands, excluding state or private land.
    2. A roadless area of less than 5,000 acres of contiguous BLM lands that has one of the following characteristics:
        a. The area is contiguous with lands that have been formally determined to have wilderness or potential wilderness values, or any Federal lands managed for the protection of wilderness characteristics (e.g., designated wilderness, BLM WSAs, USFWS areas proposed for wilderness designation, USFS WSAs or areas of recommended wilderness, and NPS areas recommended or proposed for designation).
        b. It is demonstrated that the area is of sufficient size as to make practicable its preservation and use in an unimpaired condition.
        c. The area is a roadless island of public lands. The BLM must determine whether or not at least one of the size criteria are met by lands within the inventory unit and document in writing the rationale for arriving at this determination.
- **Naturalness**: Lands and resources exhibit a high degree of naturalness if they are affected primarily by the forces of nature and are areas where the imprint of human activity is substantially unnoticeable. The BLM has authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which, taken together, are an indication of an area's naturalness. These attributes may include the presence or absence of roads and trails, fences and other improvements, the nature and extent of landscape modifications, the presence of native vegetation communities, and the connectivity of habitats.
- **Outstanding Opportunities for Solitude or Primitive and Unconfined Types of Recreation**: Visitors may have outstanding opportunities for solitude, or primitive and unconfined types of recreation when the sights, sounds, and evidence of other people are rare or infrequent; where visitors can be isolated, alone or secluded from others; where the use of the area is through non-motorized, non-mechanical means; and where no or minimal developed recreation facilities are encountered.
- **Supplemental Values**: These include ecological, geological, or other features of scientific, educational, scenic, or historical value.

a. Current Condition

Twenty years of open classifications for OHV use, as well as concentrated local uses (e.g., grazing, timber harvest, recreation, etc.), have left few landscapes in the Decision Area that have not been impacted by roads, primitive roads, and trails, as well as other human-related impacts. To determine if areas of public lands that contained wilderness characteristics exist outside of WSAs, the BLM developed a GIS model to determine the presence of areas that could meet the minimum size requirement of 5,000 acres. This model identified continuous BLM land ownership patterns in conjunction with federal, state, county, BLM, and USFS road systems

layers, as well as occupied ROWs to determine boundary features for areas that could meet the minimum size requirement. The lower limit of the GIS model was set to identify public lands that were in blocks of 4,500 acres or more, which is 500 acres below the minimum required. Due to the checkerboard ownership pattern of public lands in the Decision Area, combined with the extensive road network, the BLM identified four areas that met the minimum size requirement and were not adjacent to existing WSAs or other federal lands with identified wilderness characteristics: Hooker Gulch (OR-035-014), French Gulch (OR-035-015), Spring (OR-035-016), and Ruth Gulch (OR-035-017). In addition to these units, the BLM reviewed lands adjacent to existing WSAs for wilderness characteristics, including lands adjacent to Sheep Mountain (OR-035-018), Homestead (OR-035-019), and McGraw Creek (OR-035-020) WSAs. The results for these inventories are present in Table 3-46.

Table 3-46. BLM Wilderness Characteristic Inventory Units

Unit Name/#	Acres	Size	Naturalness	Solitude	Primitive/Unconfined Recreation	Other	Meets Requirements
Hooker Gulch OR-035-014	6,125	Yes	Yes	No	No	No	No
French Gulch OR-035-015	5,891	Yes	Yes	No	No	No	No
Spring OR-035-016	6,759	Yes	Yes	No	No	Yes	No
Ruth Gulch OR-035-017	7,873	Yes	Yes	No	No	No	No
Sheep Mountain Contiguous OR-035-018	961	Yes	Yes	No	No	No	No
Homestead Contiguous OR-035-019	2,170	Yes	Yes	No	Yes	No	Yes
McGraw Contiguous OR-035-020	1,210	Yes	Yes	No	Yes	Yes	Yes

Although the forces of nature predominantly affected the seven BLM inventory units identified in Table 3-46, thereby meeting the "naturalness" criterion, the BLM determined that all but two failed to possess wilderness characteristics by failing to provide “outstanding opportunities for solitude” or “primitive and unconfined types of recreation." The inventory units that passed the criteria for possessing wilderness characteristics were two of the three inventory units adjoining BLM WSAs (the Homestead contiguous unit [1,942 acres] and the McGraw Creek contiguous unit [1,210 acres]).

Two national forests adjacent to the Decision Area (Wallowa-Whitman and Umatilla National Forests) are currently revising their forest plans as part of the Blue Mountain Forest Plan revision, which involves identifying USFS lands as potential wilderness areas. The USFS provided data to the BLM for lands identified as potential wilderness areas, several of which are adjacent to the Decision Area. The BLM found that eight areas of BLM-administered lands possess wilderness characteristics in association with adjoining USFS potential wilderness areas. The eight USFS potential wilderness areas are listed in Table 3-47, as are the associated BLM

units, human imprints, and supplemental values noted on the BLM lands. Four of the eight BLM units adjacent to the USFS potential wilderness areas also fall within ACEC, WSR, and/or suitable WSR boundaries.

Table 3-47. USFS Potential Wilderness Areas and Adjoining BLM Units

USFS Potential Wilderness Areas	USFS Acres	Adjacent BLM Units/Acres	Human Imprints on BLM Public Lands	Existing BLM Designations	Supplemental Values
Twin Mountain	55,783	OR-035-022 2,630	Motorized primitive trail (MPT) – 2.7 mile	Hunt Mountain ACEC	Indian Paintbrush American Thorow Wax
South Fork Tower	15,826	OR-035-021 548	Cherry stem road – 2.3 mile	N/A	N/A
North Mount Emily	5,501	OR-035-023 200	Cherry stem road – 1.7 mile	N/A	N/A
Walla Walla River	33,859	OR-035-030 623	MPT – 0.1 mile Cherry Stem road – 0.3 mile	South Fork of the Walla Walla River ACEC	N/A
Grande Ronde	23,394	OR-035-029 3,156	MPT – 1.2 mile Cherry stem Road – 1.9 mile	Grande Ronde WSR Grande Ronde River ACEC	Public Lands contain Nez Perce Mariposa Lily
Joseph Creek	6,750	OR-035-027 2,189	MPT – 0.6 mile Fences – 0.6 mile	Joseph Creek "Suitable" segment for WSR	N/A
Deadhorse	17,808	OR-035-026 214	MPT – 4.4 mile	N/A	N/A
Little Creek	2,812	OR-035-032 283	Veg. Manipulation – 4 treatments including, piling, burning and thinning	N/A	N/A

The Record of Decision (ROD) for the final Blue Mountains Forest Plan will decide whether all or part of the USFS potential wilderness areas will be "proposed" or "recommended" for wilderness designation. At that time, the inventory findings for the adjacent BLM units would be subject to reconsideration should the final Blue Mountains Forest Plan recommend against wilderness designation of any of their potential wilderness areas.

The current condition of wilderness characteristics in the Decision Area thus includes the presence of ten areas that possess lands with wilderness characteristics: two areas adjoining BLM WSAs and eight areas adjoining USFS potential wilderness areas. To date, the BLM has not received citizen input regarding any additional areas containing wilderness characteristics.

b. Trends

Natural, undeveloped areas, such as lands with wilderness characteristics, are becoming increasingly rare and, therefore, more important to both the public and managing agencies throughout the region and state. Public concern along with agency efforts to ensure adequate

protection of areas like those that contain wilderness characteristics continue to increase. Future inventories are anticipated with the passage of time, other agency wilderness determinations, or when ownership patterns change (e.g., land exchanges) to potentially create areas that meet the minimum wilderness characteristics criteria.

C. RESOURCE USES

1. FACILITIES

a. Current Conditions

Existing facilities throughout the Decision Area include numerous capital improvements such as campgrounds, interpretive sites, boat ramps, trailheads, staging areas, interpretive centers, potable water developments, and toilet facilities. Most facilities developed within the Decision Area are associated with recreational or administrative activities. Additional "improvements" in the form of cattle guards, fencing spring developments, and gates are not generally considered "facilities." See Section C.3, Livestock Grazing, for a discussion of these improvements.

Fully developed facilities are situated throughout the Decision Area including NHOTIC, the Co-located BLM/USFS office and ware yard in Baker City, and one fully developed campground (Spring Recreation Site) located on Brownlee Reservoir of the Snake River. Other developed but somewhat primitive campground sites contain combinations of such amenities as restrooms, fire rings, tables, bulletin boards/kiosks, and potable water. Most of these sites are located near water sources, such as those on the Snake River reservoirs (Airstrip, Bob Creek, Copper Creek, Spring Recreation Site, Swedes Landing, and Westfall) or along rivers (Heller Bar, Minam Station, Mud Creek, Palmer Junction, Rogersburg, and South Fork of the Walla Walla). Other developed facility areas include Echo Meadows, Bassar Diggins (on Lookout Mountain), and the Virtue Flat OHV Play Area.

Table 3-48 lists these developed and semi-developed recreation areas and the facilities they provide. In addition, the BLM manages the Spring Recreation Site Guard Station, which is an administrative site established for fire suppression activities as well as assisting with the Spring Recreation Site. This site contains barracks for seasonal firefighters, water, and septic systems.

Table 3-48. Developed/Semi-developed Recreation Areas in the Decision Area

Name	Boat Ramp	Camp ground	Picnic Area	Rest-rooms	Drinking Water	Trailhead	Fishing Access	Other
Airstrip		X					X	
Bassar Diggins		X		X	X			
Bob Creek		X		X			X	
Copper Creek				X		X	X	
Echo Meadows						X		Interpretive site on the Oregon Trail
NHOTIC			X	X	X	X		Interpretive site and trail/fee area

Table 3-48. Developed/Semi-developed Recreation Areas in the Decision Area

Name	Boat Ramp	Camp ground	Picnic Area	Rest-rooms	Drinking Water	Trailhead	Fishing Access	Other
Spring Recreation Site	X	X	X	X	X		X	Fee area
Swedes Landing		X		X			X	
Westfall		X		X			X	
Heller Bar	X	X		X			X	On state land but BLM manages facilities
Minam Station				X				Visitor Information
Mud Creek	X	X		X			X	
Palmer Junction	X	X					X	
Rogersburg							X	
South Fork Walla Walla			X	X		X	X	
Virtue Flat OHV Play Area				X				OHV Staging area

In addition, a number of locations throughout the Decision Area support a variety of dispersed recreational activities with high concentrations of use. Although no areas in these dispersed settings have been identified for capital improvements, as demand for recreational activities on public lands increases, developed campgrounds and day-use areas could improve recreation experiences and provide necessary resource protection.

b. Trends

Overall trends show a gradual increase each year in the demands for and upon facilities throughout the Decision Area. Technological improvements, population growth, as well as national direction all pressure the need for various facility developments. This use and the continued demand for facility developments on public lands, as well as on the existing facilities, is only expected to increase as the population of Oregon and surrounding states increases. Although public use patterns and demands, as witnessed during resource monitoring and management, fluctuate due to economic conditions, population patterns, seasonal weather patterns, or technological improvements, it is reasonable and foreseeable to expect that the demand for facilities or the improvement of existing facilities will continue to increase over time. Areas expected to require facility developments or that contain recreation facilities that may or may not meet future needs at their current levels, include access points along the Wallowa, Powder, and Grande Ronde rivers; facilities at the South Fork of the Walla Walla River trailhead; Virtue Flat OHV Play Area; and the sites located along the Snake River reservoirs.

2. FORESTRY AND WOODLAND PRODUCTS

a. Current Conditions

Most of the Decision Area's forestlands are in scattered parcels, many of which are 40-acre isolates. Because of this, some of these lands are essentially unmanaged due to difficulty in gaining access across private lands. In most cases, private landowners willingly cooperate with

the BLM and have granted either permanent, or more frequently, temporary access across their lands. These landowners typically have their own private timber holdings, or have a home or cabin on adjacent wooded land, and they are generally eager to have the BLM improve forest health and reduce fuel hazards that could ultimately affect their forest holdings. Access has been granted both formally (reciprocal ROWs and road use agreements) and through informal means, such as a letter of permission signed by the landowner. There are, however, occasional landowners who are simply unwilling to grant the BLM access, leaving the BLM parcel inaccessible and thus unmanageable. There are a few "blocks" that make up the preponderance of BLM forestland where ownership is contiguous (i.e., the parcels are grouped together), such as the Lookout Mountain and Burnt River blocks. In these areas, access is generally not an issue because most of the roads are controlled by the BLM, USFS, and Baker County.

The current Baker RMP (BLM 1989) provides for the harvest and sale of various products, including timber (saw logs and clean chips) and special forest products (SFPs) such as firewood, posts, and poles. The RMP stated an allowable sale quantity (ASQ) of 24 MMBF of timber per decade to be harvested from a commercial-forest land base of 25,353 acres. The RMP also restricted commercial harvest on 3,914 acres and excluded commercial harvest on 3,977 acres to emphasize other resource values.

The total forested land base within the Decision Area under the current Baker RMP (BLM 1989) was estimated to be 62,626 acres. This figure includes both the 25,353-acre commercial land base and 37,273 acres considered woodlands. Woodlands are comprised of juniper and less productive coniferous forest incapable of producing a minimum of 20 cubic feet per acre of new growth per year. The BLM further defines woodlands as forestland that produces trees not typically used as saw timber products and not included in calculation of the commercial forestland ASQ. Woodlands are considered for the production of SFPs, but not timber products. Map 3-5 shows the location of forests and woodlands in the Planning Area.

The recent forest inventory completed for this RMP revision estimates the current forested land base to be 85,599 acres (see Table 3-49). The new inventory classifies these lands as 36,738 acres of dry and moist forests, 756 acres of hardwoods and mountain shrubs, and 48,105 acres of juniper woodlands. For the purpose of this RMP revision, no distinction is made between commercial forest and woodland as it pertains to dry and moist forests. The classification of woodland will pertain exclusively to juniper woodlands. Inevitably, some areas classified as forest will contain some juniper, while some areas classified as woodland will contain some non-juniper trees. It should also be noted that the 756 acres classified as hardwood and mountain shrub is a low estimate. This is due to the scale of the inventory and the fact that many of these plant communities have been encroached upon by either forest or woodland species.

Table 3-49. Results of Baker RMP Forest Inventory

Forest Type	Dominant Existing Cover	Acres
Warm Dry	Ponderosa Pine	10,405
Cool Dry	Douglas-fir	20,950
Total Dry Forest Acres		31,355

Table 3-49. Results of Baker RMP Forest Inventory

Forest Type	Dominant Existing Cover	Acres
Warm Moist	Grand Fir	3,785
Cool Moist	Lodgepole Pine/Western Larch	1,062
Cold Wet	Engelmann Spruce/Subalpine Fir/Whitebark Pine	536
Total Moist Forest Acres		5,383
Hardwoods	Quaking Aspen/Black Cottonwood	454
Mountain Shrub	Various	302
Juniper Dominated	Western Juniper	48,105
Total Current Forested Land Base in the Decision Area		85,599

The percentage of commercially viable forestland in the Decision Area is minimal (less than 1 percent) in relation to the total commercial forestland within the Interior Columbia Basin, in which the BLM oversees management of approximately six million acres of commercial forestland (USFS 1996).

At the time the Baker RMP was approved in 1989, the Baker FO had a very active timber management and sale program. From 1950 to 1989, records indicate that approximately 111 MMBF of timber was harvested from the Decision Area (formerly the Baker District) for a decadal average of 28 MMBF. This volume was achieved through even-age management and/or overstory removal of the large, old-growth trees. The current Baker RMP (BLM 1989) suggested continuing the time-tested method of even-age management as the preferred silvicultural management strategy to be accomplished primarily through selection, shelterwood, and clear-cutting regeneration systems.

Soon after the current Baker RMP (BLM 1989) was implemented, the approach to public lands forestry experienced a paradigm shift, which has been called by many names, including “new forestry,” “ecosystem management,” and most recently “managing for forest health.” This shift in forest management reflects the public’s recent demands that their forests be managed for a variety of resource values and not just as a timber crop. As a result, the goal of harvesting 24 MMBF per decade of timber from the Decision Area has not been achieved since the RMP’s inception.

While forest products are still being produced from the Decision Area’s forests, they are mainly a by-product resulting from the greater goal of forest health. This management strategy uses silvicultural prescriptions designed to restore forests to something reminiscent of their historic range of variability. These prescriptions concentrate on reducing understory stocking, while leaving the large, older tree component of the forest canopy intact. This type of management has yielded approximately 12 MMBF, or an average of 600 thousand board feet (MBF) per year, of smaller diameter logs over the past twenty years. The amount would have been smaller when considering that some of this volume has come from fire salvage.

Baker County was once a thriving timber community with as many as five mills operated solely by Ellingson Lumber Co., and other mills in the area ran by its competitors. However, Baker County’s timber industry, like many counties throughout the west, is now a thing of the past.

There are numerous reasons for this downturn, including the paradigm shift in forest management on public lands, but much of it simply had to do with the harvest levels of the past and the resulting scarcity of large logs. While there are no longer commercial lumber mills operating in Baker County, a small infrastructure remains for timber harvesting and logs harvested from the Decision Area, which are trucked to neighboring counties where a few mills still operate. These mills have retooled and have the capacity to operate primarily on small diameter log feedstock.

Special Forest Products

The SFP program is currently a minor component of the Decision Area's forestry program. This program primarily consists of fuel wood harvesting, with occasional permits sold for the harvesting of juniper posts or lodgepole posts and poles. Since BLM forestlands tend to be intermingled with USFS lands, most people tend to acquire these products from the latter. A productive year of SFP sales for the Decision Area amounts to approximately 60 cords of fuel wood and 200 posts.

b. Trends

Access will continue to be an issue for forest management within the Decision Area. As the WUI continues to expand, more people continue to move into forested areas. Many of these people did not grow up in forested communities and, thus, lack an understanding of the way in which forested ecosystems evolved and the hazards that overstocked, unhealthy forests present to both themselves and their property. While some people become educated quickly about the realities of life in the woods, others continue to reject the notion that active forest management is critical to their safety and the safety of their property. It is this latter group that may prove challenging when the BLM attempts to acquire access through their private lands. The trend will likely be to increase efforts at obtaining formal, permanent access during project planning, rather than relying on temporary access that a future, new landowner may be unwilling to grant.

Timber harvest volumes have declined across the Planning Area since the early 1990s, with the decline having been the most pronounced on federal lands. However, as mentioned above under Current Conditions, forest management does continue in the Decision Area. In fact, there is likely more forest and woodland acreage being actively managed today than before 1990, although the direction of management is much different. While current management includes some commercial timber harvest, the emphasis is now on restoring forest health through thinning of smaller trees and reduction of fuels to reduce wildfire hazards. Therefore, it can be anticipated that this form of forest management will continue over the next few decades.

Demand for timber, while currently at a level below historic demands, should continue in the foreseeable future. However, it is unlikely that the Decision Area will have an ASQ any time in the near future; instead, a Proposed Sale Quantity (PSQ) is a more likely scenario. Unlike an ASQ, which is intended to be a hard target, a PSQ is not a commitment to offer for sale a specific level of timber volume. A PSQ is merely a guide for attempting to maintain a sustainable harvest

level and recognizes the uncertainty in forest management, with the understanding that some years will require adjustments in sale offerings, including the possibility of having no offerings at all. Active management should continue in the present manner of forest restoration and fuels reduction. While changing political demographics affect forest policies on public lands, it is unlikely that the pursuit of healthy forests and the reduction of hazardous fuels will be abandoned.

Special Forest Products

The availability of fuel wood material is expected to increase due to the increase in mortality from insects and diseases. As stressed trees die, they lose their commercial value and are often available for fuel wood; however, only a small percentage of these dying trees are within a reasonable distance of open roads and accessibility for fuel wood use. Demand for fuel wood is often linked to energy costs, with the Baker FO having sold over double the fuel wood in FY 2008 compared to the previous five years. Even with this in mind, the overall demand for fuel wood in the Planning Area has remained minimal and is not expected to increase dramatically over the next few decades.

While on a national scale the demand for woody biomass for use as fuel in the renewable energy arena has increased, there is currently little demand at the local level. This lack of demand will not likely change unless the infrastructure needed to process and utilize this material is becomes locally available.

3. LIVESTOCK GRAZING

a. Current Conditions

At the time of the 1989 RMP, there were 374 livestock grazing allotments encompassing 418,061 acres. Since then, these numbers decreased for various reasons, including consolidation of allotments, land sales, and shifts in jurisdiction. There are currently 352 livestock grazing allotments encompassing 392,801acres of public lands in the Planning Area (388,342 acres of which are included in current grazing authorizations). Map 3-14 (on CD) illustrates the location of these allotments, while Map 3-15 (on CD) provides detail for the area containing the majority of the allotments. These are located in the southern portion of the Planning Area (primarily in Baker County).

Management Categories

All grazing allotments in the Decision Area have been assigned to one of three management priority categories so management efforts and funding can be directed to areas of greatest need. These categories are “Improve” (I), “Maintain” (M), and “Custodial” (C). The I-category allotments are usually areas with a potential for resource improvement where the BLM controls enough land to implement changes. The M-category allotments are usually where satisfactory management exists and major resource conflicts have been resolved. Most C-category

allotments are small, unfenced tracts intermingled with larger acreages of non-BLM managed lands, thus limiting BLM management opportunities. There are presently 65 I, 73 M, and 214 C allotments in the Decision Area. Approximately 223,500 acres (57percent) are I allotments, 116,000 acres (29percent) are M allotments, and 53,300 acres (14 percent) are C allotments. As rangeland conditions and site-specific objectives change, allotments are shifted from one category to another. See Appendix 3.5 for the current list of allotments, management categories, and additional details on allotment categorization.

Allotment Management Plans

Allotment Management Plans (AMPs) have been developed for selected allotments (usually the larger I and M allotments). An AMP prescribes the manner and extent that livestock grazing is conducted to meet multiple use, sustained yield, economic, and other objectives. A grazing system is generally incorporated into the AMP. An AMP is implemented when it is incorporated into the permit and accepted by the permittee, and it is operational when supporting range improvements and the grazing system have been initiated. Roughly, 40 percent of the acres involved with grazing are in allotments where an AMP has been developed, with 30 AMPs having been completed as of the 1989 Baker RMP. Eleven of these AMPs were evaluated and revised between 1989 and 1999. In 1999, the standards and guidelines process was implemented (see below), which resulted in a shift of emphasis from AMPs to determinations of rangeland health and environmental assessments for permit renewal. As a result, some AMPs are now outdated. Old AMPs are still being followed to some extent, but changes to AMPs are now being implemented through the standards and guides/permit renewal process.

Rangeland Health Standards

The BLM, through the development of grazing regulations in 1995, was directed to develop state or regional standards and guidelines for rangeland health. The objectives of these regulations are to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy rangelands. Following a process involving public participation and assistance from the Resource Advisory Councils, the BLM developed the Standards for Rangeland Health and Guidelines for Grazing Management for Oregon and Washington (BLM 1997), which are referred to as the "Standards and Guides" throughout this RMP. Appendix 3.6 lists the standards for rangeland health identified in the Standards and Guides, which include the following:

- Standard 1 - Upland Watershed Function: Upland soils exhibit infiltration and permeability rates, moisture storage, and stability that are appropriate to soil, climate, and landform.
- Standard 2 - Riparian/Wetland Watershed Function: Riparian-wetland areas are in properly functioning physical condition that are appropriate to soil, climate, and landform.
- Standard 3 - Ecological Processes: Healthy, productive, and diverse plant and animal populations and communities that are 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 groundwater quality, influenced by agency actions, complies with state water quality standards.
- Standard 5 - Native 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) that are appropriate to soil, climate, and landform.

About 62 percent of the Decision Area has been evaluated using the standards for rangeland health. The tables in Appendix 3.7 show the results of evaluations/determinations of rangeland health conducted between 1999 and 2009 by allotment. The tables in Appendix 3.7 demonstrate that the allotments that met all standards (mostly C and M allotments) constituted 48 percent of the area assessed, allotments that did not meet one or more standards where livestock grazing was a significant factor constituted 49 percent of the area assessed (these are mostly I allotments), and the allotments that did not one or more standards where current livestock grazing practices were not a significant factor constituted 3 percent of the area assessed (see Map 3-16 [on CD]).

Riparian/wetland watershed function (Standard 2) is the most common standard for rangeland health not being met (as of 2009, approximately 90 percent of the allotment acreage not meeting standards had been attributed at least in part to Standard 2 not being met). Riparian areas within the Decision Area create a particular problem for grazing management because such areas tend to attract livestock due to available water and consistently green vegetation. Willows, aspen, cottonwoods, and other trees also provide shade that is attractive to livestock. Proper Functioning Condition is a method used to assess riparian areas within the allotments (see Chapter 3, Water Resources, for more information on the PFC method).

In accordance with BLM regulations and policy, including Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington (BLM 1997), whenever a determination is made that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines, the BLM takes appropriate action as soon as practicable, but not later than the start of the next grazing year. As mentioned previously, approximately 62 percent of the Decision Area has been evaluated using standards for rangeland health and guidelines for livestock grazing management. Ongoing standards for rangeland health and guidelines for livestock grazing management evaluations will continue to be completed on the remaining portion of the Decision Area, as is required by BLM regulations and policy. This RMP revision is being written while the evaluation process is ongoing but not complete. These evaluations will continue regardless of which alternative is selected.

Authorized Use

The total active grazing preference for the Decision Area is approximately 47,000 AUMs. One AUM, as defined in BLM grazing regulations, is the amount of forage necessary to sustain one cow or its equivalent for one month. Of the 47,000 AUMs available for use in the Decision Area, the percentage that has been authorized for use has ranged between 77 and 87 percent (36,289 to 41,297 AUMs) over the ten years between 1999 and 2008 due to factors such as drought, financial limitations on operators, market conditions, and implementation of grazing practices to improve range conditions. In the 2009 grazing year, approximately 39,000 AUMs were actually authorized for use and in the 2010 grazing year, approximately 41,000 AUMs were authorized, while the rest were in nonuse each year. Rangeland monitoring information is utilized to make necessary adjustments. As shown in Table 3-50, there are 179 grazing permits administered under Section 3 of the Taylor Grazing Act (i.e., they are within a grazing district which was established under the provisions of the Taylor Grazing Act). These Section 3 permits are in Baker and Malheur counties, and a small part of southeastern Wallowa County. There are 71 grazing leases administered under Section 15 of the Act (i.e., they are outside of any established grazing district), which are within the Grande Ronde and Blue Mountain GUs identified in the current Baker RMP (BLM 1989). These leases are located in the six northern counties of the Planning Area (north of Baker County, including two counties in Washington) and are scattered among 7 million acres of private land, state land, and land managed by other agencies.

Table 3-50. Section 3 Grazing Permits and Section 15 Grazing Leases

	Number of Permits or Leases	AUMs (Active Grazing Preference)	Acreage Currently Authorized for Grazing
Section 3 Permits	179 (72%)	44,030 (94%)	361,716 (93%)
Section 15 Leases	71 (29%)	2,954 (6%)	26,626 (7%)

Forage Quality

The quality of forage for livestock use corresponds closely to the ecological condition of the rangeland as measured by a similarity index using NRCS ecological site guides (NRCS 2008). Generally, the higher the ecological condition, the greater the abundance of high-quality forage grasses for cattle, such as bluebunch wheatgrass, Idaho fescue, and Thurber's needlegrass. Around 25 percent of the Decision Area is in the highest two ecological condition classes, corresponding to excellent and good condition for livestock (BLM 2009). Steep slopes are commonly in the best conditions. Conversely, lower ecological condition sites may be dominated by unpalatable shrubs or by grass species that have only a short period of palatability before drying out or becoming less grazeable due to sharp-awned seeds or harsh textures (Laca et al. 2001). Generally, vegetation containing high proportions of species such as sagebrush, juniper, rabbitbrush, Sandberg or bulbous bluegrass, cheatgrass, medusahead, or noxious weeds consists of lower-quality forage for cattle. Over 52 percent of the Decision Area falls in the lower two ecological condition classes, corresponding to fair and poor condition for livestock. Seedings of introduced grasses, such as crested wheatgrass and intermediate wheatgrass, provide

high quality, reliable forage for cattle and constitute another 6 percent of the resource area (BLM 2009). Approximately 16 percent of the Decision Area is undetermined as to its condition.

Rangeland Improvements

The BLM continues to construct rangeland improvements including fences, cattleguards, water pipelines, wells, spring developments, and stock ponds in the Decision Area, but limited funding has allowed only a few projects each year. Permittees privately fund a few more projects, but most rangeland improvement expenditures are currently going into maintenance of existing projects. Rangeland manipulation projects, including seedings and prescribed burns, are occasionally implemented for rangeland rehabilitation or improvement.

b. Trends

Identified economic trends that affect livestock grazing include: (1) higher costs of alternative forage, such as hay or private land grazing (USDA 2007b), (2) higher costs of grain, resulting in long-term trends to minimize time in feedlots and rely more on rangelands (Oregonian 2009), (3) higher costs of fuel, lessening opportunity to truck cattle away to distant locations for alternative forage (Oregonian 2009), and (4) loss of agricultural land to urban development (Huntsinger and Hopkinson 1996). The demand for public land grazing to help make local livestock operations viable will probably be stronger in the future than it is today, but at the same time, other natural resource concerns argue for reduced livestock grazing, and collisions between competing interests are inevitable. There has been a definite decline in the total number of AUMs authorized in the Decision Area over the last 20 years due to management changes designed to bring about more resource protection. Management has trended toward changes in seasons of use, with less grazing during midsummer (the primary reason being to reduce riparian zone grazing impacts), more fall grazing, and shorter periods of use. The trend toward a warmer climate contributes to further needs for modifying periods of use (e.g., possibly shifting grazing to earlier in the spring or later in the fall, or varying precipitation patterns affecting dates of livestock use). Trends in rangeland conditions, quantitatively verified by range monitoring, generally are upward; however, invasions of weeds and undesirable plants, accelerated by climate change, continue to reduce forage production in some areas. Trends towards reduced availability of good water sources for livestock are expected to accelerate because there is more competition for water for other uses (Chambers and Pellant 2008).

4. MINERALS

a. Current Conditions

Leasable Minerals

Leasable minerals are regulated by a series of regulations found at 43 CFR 3100 through 3500. These regulations describe how to obtain leases, fees for leases, and royalties on mineral production from leases; how the government manages leases; and the responsibility of the lessee.

All minerals on acquired lands except for salable minerals are leased. The General Leasing Act of 1920, as amended (30 USC 181 et seq.), provides that deposits of coal, phosphate, sodium, potassium, oil, oil shale, native asphalt, solid and semisolid bitumen, and bituminous rock (including oil-impregnated rock or sands from which oil is recoverable only by special treatment after the deposit is mined or quarried) or gas, and lands containing such deposits owned by the United States may be acquired only though a leasing system. The most recent volume of Title 43 of the CFR contains the most up-to-date detailed information and requirements concerning federal leasable minerals, which are under constant revision. Federal leasable minerals are covered in the following parts of the CFR:

- Part 3100: Oil and Gas Leasing
- Part 3200: Geothermal Resource Leasing
- Part 3300: Outer Continental Shelf Minerals
- Part 3400: Coal Management
- Part 3500: Leasing of Minerals other than the above

The Eastern Oregon and Washington Province is located within a complex geologic setting east of the western continental margin of North America. Much of the province is overlain by the Columbia River Basalt Group, which ranges from 4,000 to as much as 13,800 feet thick in the Richland, Wash., area (Reidel and others, 1989). In addition, the southernmost part of the province is overlain by non-CRBG Miocene to Quaternary volcanic and volcaniclastic rocks. These volcanic rocks have limited the current understanding of the underlying stratigraphy and structural geology.

Between 5,000 to 10,000 feet of arkosic sandstone, mudstone, lacustrine shale, and coal are known to be present below the basalt in north-central Oregon and central Washington. The only discovered commercial gas accumulation in the province is the presently abandoned Rattlesnake Hills gas field, which produced an estimated 1.3 billion cubic feet of gas. Numerous other gas shows are known within the province but as of 2006, there have been no new commercial accumulations found (Brown and others 2008).

There are currently no fluid or solid mineral leases in the Planning Area; however, coal and geothermal resources are known to occur. Coal is limited to the Troy Basin in the northwest part of the Planning Area, where it occurs as low-grade lignite within the Columbia River basalts. Currently, there is no coal production, nor are there any geothermal leases or expression of interest in exploration or leasing these energy commodities. Geothermal development is presently restricted to direct use applications (e.g., space heating) pending new technological development for use of low temperature binary systems.

Locatable Minerals

Locatable minerals can be staked by mining claims under the 1872 mining laws, as amended (30 USC §22). Locatable minerals are regulated by regulations found at 43 CFR 3800. These

regulations describe how to locate and maintain mining claims, the requirements for working on federal lands, and how BLM prevents unnecessary and undue degradation of the public lands.

The Federal regulations (43 CFR 3812.1) define a locatable mineral as:

> Whatever is recognized as a minerals by the standard authorities, whether metallic or other substance, when found in public lands in quantity and quality sufficient to render the lands valuable on account thereof, is treated as coming within the purview of the mining laws.

This definition is somewhat vague and could be applied to almost any mineral with sufficient value that it could be extracted and marketed at a profit. There is no such thing as a list of locatable minerals because of the requirement for value. Whether or not certain mineral deposits are locatable depends on such factors as quality, quantity, mineability, demand, marketability, and other factors.

Locatable mineral operations are governed by regulation found at 43 CFR 3800. Subpart 3809, Surface Management, defines operations conducted on BLM administer lands as the following:

- **Casual use**, for which an operator need not notify BLM. (You must reclaim any casual-use disturbance that you create. If your operations do not qualify as casual use, you must submit a notice or plan of operations, whichever is applicable. See §§ 3809.11 and 3809.21.)
- **Notice-level operations**, for which an operator must submit a notice (except for certain suction-dredging operations covered by § 3809.31(b))
- **Plan-level operations**, for which an operator must submit a plan of operations and obtain BLM's approval

The approval process for the plan of operation is used to determine if the plan will result in unnecessary or undue degradation on public lands. According to BLM regulation 3809.411(d), the miner may be required to write an EA and a possible EIS as part of their plan of operation to determine mitigating measures and proper operating and reclamation procedures. The approval of a plan of operations is not a discretionary action. While the BLM has the authority to require that miners and prospectors conduct their operations in a manner so as not to cause undue and unnecessary degradation, as long as operations are conducted in compliance with the regulations, the BLM has little authority to disprove the plan of operation.

Most of the Decision Area is open to mineral entry under the mining laws. These areas may include split-estate lands in which the surface estate has become segregated from the mineral estate. The Planning Area contains 3,316,671 acres that includes both federal surface and federal mineral estates and 408,119 acres of split-estate lands that are composed of private surface and federal mineral estates. The BLM administers 428,425 acres of surface estate with minerals reserved to the United States.

A congressionally mandated mining claim patent moratorium is currently in place. While mining claims can continue to be located, and exploration and mining is still authorized, the BLM cannot accept or process mineral patent applications for mining claims while the moratorium is in effect.

The eastern Oregon mineral belt is a zone of mineralization that is approximately 150-miles long and approximately 30-miles wide that extends from Canyon City on the south to the Snake River to the north. This area is the most conducive to locatable minerals in the Planning Area.

The metallic resources that occur within the Planning Area include gold, silver, copper, lead, zinc, tungsten, manganese, antimony, and chromium. Currently, small amounts of gold and chromium are mined in the Decision Area. There is also clay that is used in the manufacturing of cement being mined. This clay is mined for the aluminum that it contains, thus making it a locatable mineral under the mining laws.

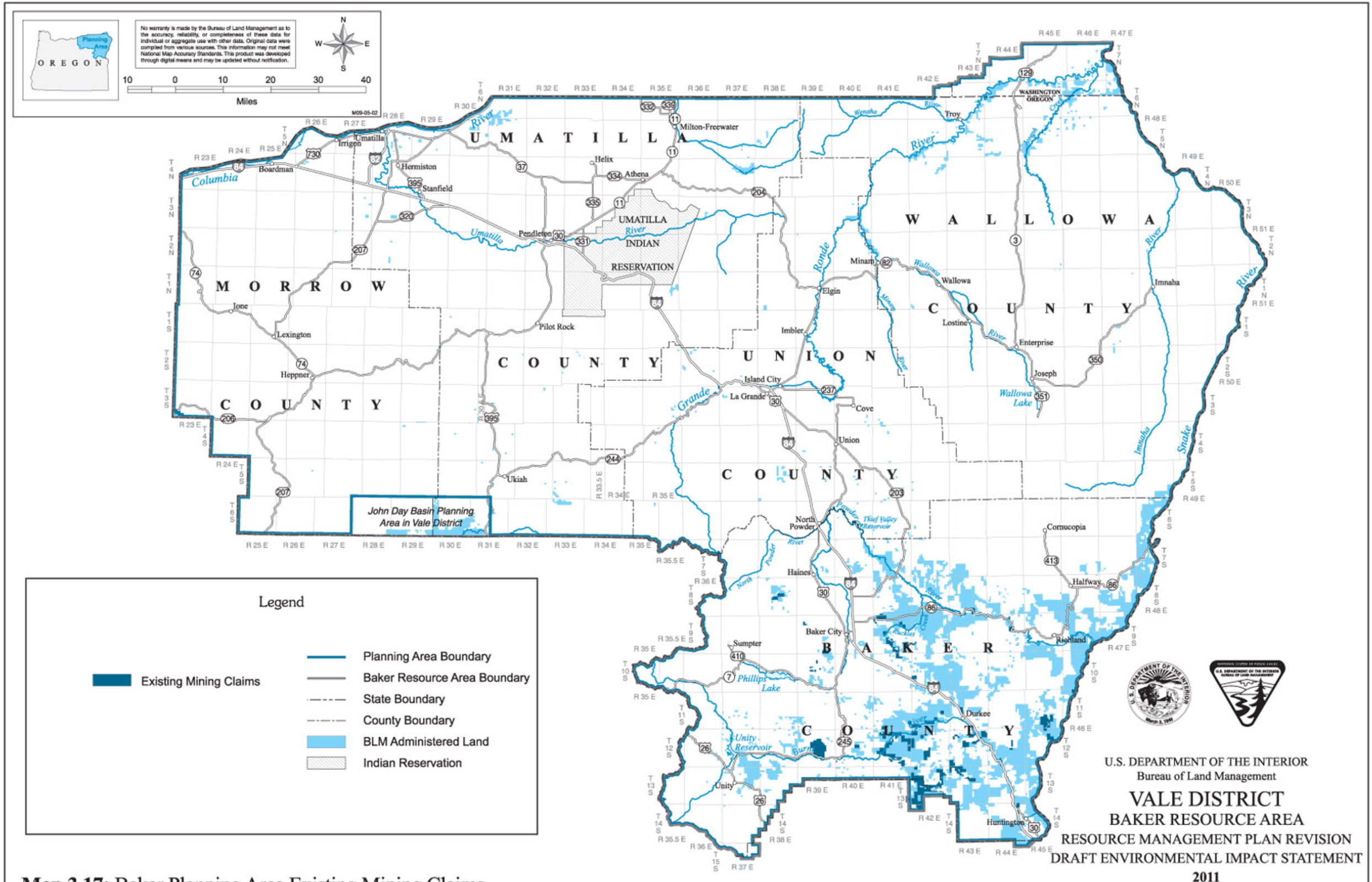
Recorded production from the various historic mining districts located in northeastern Oregon is approximately 3.5 million ounces of gold and 3.5 million ounces of silver. In addition, approximately 10,000 tons of copper were produced discontinuously from the Iron Dyke Mine (7,200 tons of copper was produced, between the years 1910 and 1937) on private lands near the Snake River between 1897 and 1987, and approximately 2,000 tons of copper were produced from the Motherlode mine near Keating (Poorman/Balm Creek area) between 1907 and 1939.

Currently, there are 629 active mining claims, 29 active notices, 27 pending notices, and 7 plans of operations pending in the Planning Area. Map 3-17 shows the location of all active mining claims in the Planning Area, while Map 3.18 (on CD) depicts areas with historic mining interests.

Salable Minerals

Salable minerals, otherwise known as mineral materials, include common varieties of sand, gravel, rock, pumice, pumicite, clay, and cinders. Salable minerals regulations are found under 43 CFR 3600, which describe how to obtain mineral materials from public lands.

On July 31, 1947, Congress passed the Materials Act (61 Stat 681), which granted the Secretary of the Interior the broad authority, “under such rules and regulations as he may prescribe,” to dispose of materials including sand, stone, gravel, and common clay on public lands of the United States if the disposal of materials (1) is not otherwise expressly authorized by law,



Map 3.17: Baker Planning Area Existing Mining Claims

including the United States mining laws, (2) is not expressly prohibited by laws of the United States, and (3) would not be detrimental to the public interest. The BLM can dispose of mineral materials by sale at fair market value, or on a free use basis to governmental agencies and non-profit organizations. The 1947 Act did not bring clarity to the question of whether mineral materials were locatable. In an effort to address the problems relating to the improper use of mining claims and to provide for the multiple use of the surface of a mining claim, Congress passed the Surface Resources Act of 1955. This Act removed from the purview of the Mining Law "common varieties" of sand, stone, gravel, pumice, pumicite, and cinders (30 USC. 611).

There are two types of mineral material disposals: exclusive and nonexclusive disposals. Under exclusive disposals, the purchaser has an exclusive right to the materials and sole responsibility for development and reclamation of the site or designated portion of the site. There are three types of exclusive disposals: negotiated sales, competitive sales, and free use permits.

Nonexclusive disposals are made from sites to which the public has access and more than one party has the right to remove materials. There are two types of nonexclusive disposal sites: the community pit and the common use area. The distinction between the two is that common use areas are normally broad geographic areas, which do not require reclamation after the removal of the material.

The common-variety mineral resources known to occur within the Planning Area include aggregate materials, pumice, limestone, marble, cinders, basalt, stone, sand and gravel. Currently, small amounts of cinders and basalt are being mined in the Decision Area. Two authorized community pits occur within the Decision Area. These are open to the public for the purchase of small quantities of aggregate. One is located at Magpie Butte in Baker County and the other is located near Rogersburg, Washington. In addition, there are three free use permit sites for mineral material removal by state and county road departments.

b. Trends

Leasable Minerals

While coal occurs in the Troy Basin, there is no anticipation of production over the life of the revised Baker RMP due to the low quality of the resource and cost to produce it. The Planning Area is not in a coal production area. No federal coal leases would result from the revised RMP. Any federal coal leasing would be done in accordance with the federal coal management regulations found at 43 CFR 3420 and subpart 3425.

Oil, gas, and geothermal development are dependent on present and future discoveries and technology. Presently there are no geothermal leases within the Planning Area and no known interest in leasing. No large-scale applications are anticipated during the life of this plan. If applications are received, they will most likely be small scale.

Locatable Minerals

The economics of locatable mineral resources vary over time, and can range from stable to volatile. For example, the value of gold tends to rise (a) when the dollar weakens relative to international currencies, (b) during periods of political unrest, and (c) as a hedge against inflation. The historic price trend for gold and other precious and base metals has been upward and it is likely that this trend will continue into the near future. The interest in small-scale commercial and recreational prospecting and mining is expected to increase correspondingly.

Salable Minerals

In the near future, the demand for salable minerals will probably increase slightly within the Planning Area. In general, increases in the Planning Area's population drive the demand for salable minerals, which has only increased slightly over the last seventy years. Increases in the price of fuel will place more pressure on cash-strapped county resources, while public demands for road maintenance remains the same or increases with continued population growth that will further increase demand for salable minerals. Such demands require material sources that are closer to the use area in order to reduce transportation costs. Based on historic trends, the BLM expects that the demand for salable minerals will remain flat or slightly increase over the life of the revised RMP.

5. RECREATION

a. Current Conditions

Public lands in the Decision Area provide opportunities for a wide variety of outdoor recreation activities and related benefits. While most recreational users participate in dispersed recreation activities, individually or in small groups, others enjoy more developed opportunities or participate in organized events or commercial recreational pursuits as participants or spectators. Many types of dispersed, developed, and organized recreational uses provide for a diverse range of visitor needs and expectations. Although the BLM manages a small percentage of the land base in the Decision Area, these public lands are an important resource for providing recreational opportunities to visitors. Opportunities to participate in unique recreational activities such as whitewater rafting, hunting/fishing, and OHV uses attract visitors from local, regional, and in some cases, from across the country.

Table 3-51 shows visitation estimates for the Decision Area based on BLM 2009. Approximately 254,966 recreational users visited the Decision Area in 2009. This estimate was derived from the Recreation Management Information System (RMIS), a BLM recreation database. Although the Baker FO has been collecting recreational use data since the late 1980s, the recreation data used in the RMIS program only goes back to the early 1990s, when the program was developed.

Table 3-51. Recreation Visitation (2009) - Number Recreation Area Annual Visitors	
Recreation Area	**Annual Visitors**
1 Decision Area Total (includes all sites and dispersed uses)	254,966
2 Baker Extensive Recreation Management Area (ERMA)	59,768
3 Grande Ronde WSR, Special Recreation Management Area (SRMA)	87,233
4 Powder WSR, SRMA	4,148
5 Snake River Pools Complex, ERMA	89,182
6 Wallowa WSR, SRMA	14,635

Table 3-52 shows total visitation to the Decision Area over a ten-year period by visits and visitor days (BLM 2009). A visit represents one person's trip or visit, while a visitor day represents one person engaging in an activity for any part of one day. As Table 3-52 illustrates, the Snake River Pools Complex Extensive ERMA accounted for over half of recreation visits and visitor days.

Table 3-52. Ten-Year Visitation in the Decision Area (1998-2009)		
Recreation Area	**Visits**	**Visitor Days**
Baker ERMA	1,032,461	1,861,434
Grande Ronde WSR, SRMA	564,992	674,691
Powder WSR, SRMA	35,073	65,858
Snake River Pools Complex, ERMA	1,761,763	3,921,820
Wallowa WSR, SRMA	110,052	107,624
Decision Area Total	3,504,341	6,631,427

Table 3-53 summarizes the percentage of use that people spent in 2009 engaging in various recreation activities while visiting the Decision Area (BLM 2009).

Table 3-53. Visitation by Type of Use (2009)			
Visitor Use Activity Groupings	**Number of Participants**	**Visitor Days**	**Percentage of Use by Participants***
Boating/Motorized	137,205	35,045	54%
Fishing	101,644	80,026	40%
Hunting	32,996	25,222	13%
NHOTIC visitation	66,098	17,912	26 %
Camping & Picnicking	69,767	110,156	27%
Non-Motorized Travel	65,516	17,973	26%
Driving for Pleasure	34,634	13,580	14%
Interpretation, Education & Nature Study	55,296	9,789	22%
Swimming & Other Water-based Activities	40,564	6,395	16%
Specialized Non-Motor Sports, Events & Activities	24,857	2,467	10%
Boating/Non-Motorized	12,128	5,930	5%
OHV Travel	9,022	2,618	4%
Unspecified	9,467	789	4%
Winter/Non-Motorized Activities	1,921	327	1%
Snowmobile & Other motorized Travel	939	313	0.004%
Totals	662,054	328542	129.00%*
*The percentage reflects participants being involved in multiple activities occurring together, resulting in use totaling more than 100%.			

Developed Recreation Activities

While the BLM places an emphasis on resource-based versus facilities-based recreation activities, developed facilitates do occur within the Decision Area, primarily in high use recreation zones. These "developed" facilities vary in the form of the amenities associated with the site, ranging from primitive developments (e.g., an area with a kiosk or sign to identify the site) to fully developed sites (e.g., campgrounds with potable water and toilets). See Table 3-48 for more details on the specific recreation facilities in the Decision Area.

The most popular recreation destinations include areas that contain water resources, developed facilities, play areas, and motorized trails, as well as places that are easily accessible yet provide a primitive experience. Other features that attract visitors include areas with high game populations, fishing opportunities, and areas open to OHV use. These kinds of areas make them a high priority for recreation use. Management of recreation in some of these areas is implemented through activity level/management plans; however, several of these plans are either incomplete or in need of revision to address new issues or needs.

Developed and semi-developed recreation areas within the Decision Area are few, with most of the sites occurring along the Hells Canyon, Oxbow, and Brownlee reservoirs of the Snake River, and the Wallowa and Grande Ronde WSRs. The remainder of developed sites occurs at Lookout Mountain, South Fork of the Walla Walla River, and along the Oregon Trail Echo Meadows site outside of the city of Echo, Oregon.

Dispersed Recreation Activities

Dispersed recreational activities are activities that occur on public lands but are not located at developed sites or locations. These dispersed activities include OHV use, camping, hunting, fishing, visiting interpretive and educational exhibits, touring historic trails, sightseeing, pleasure driving, rock hounding, photography, picnicking, hiking, mountain biking, snowmobiling, rafting, power boating, and general water play. This wide range of activities is possible because the lands within the Decision Area are generally accessible and offer a variety of settings suitable for different recreational activities.

The BLM has little information about the areas and resources that represent some of the most popular destinations for dispersed uses in undeveloped areas. Although these dispersed sites and resources significantly contribute to the overall recreational opportunities available in the Decision Area, the BLM does not actively manage them for recreational uses and benefits. The use of dispersed sites continues to be a source of desired recreation due to the primitive nature of these areas and the feeling of isolation and discovery that they instill.

<u>Water-based Activities (Motorized and Non-Motorized Boating, Swimming, etc.)</u>

Within the Decision Area, water-based activities are common in the form of both motorized and non-motorized recreation and include motor boating, whitewater rafting, canoeing, kayaking,

fishing (see section below), and swimming. Many recreationists also seek areas near water for picnicking, camping, and viewing nature. With the creation of the Snake River Pools Complex (Brownlee, Oxbow, and Hells Canyon reservoirs), along with designated WSRs, water-based activities on public lands in the Decision Area are plentiful. Such activities are much sought after pursuits in the arid setting of eastern Oregon.

Visitors participating in motorized boating comprised the greatest number of those recreating in the Decision area in 2009 (see Table 3-53). Most of these boaters visit the Snake River Pools Complex and are day users usually in the pursuit of fishing-related activities. The environment created by the Snake River Pools Complex gives a unique opportunity for water-based recreation that extends over a large area, beginning approximately at Farewell Bend, Oregon to the Hells Canyon Dam. The consolidation of these large bodies of water allows for settings of remoteness to boaters seeking seclusion in areas where roads do not parallel the reservoirs, as well as the convenience of using the reservoirs in areas where access is readily available. Use on a pool-by-pool basis varies due to seasonal conditions and water levels of the reservoirs. Most of the motorized boating use that occurs in the Decision Area is documented at the Spring Recreation Site boat launch on the Brownlee Reservoir of the Snake River. Use data, however, does not reflect the number of launches from other locations on private or public lands, nor does it take into account the number of boaters who access the reservoirs from adjacent states. In addition, while the reservoir is used all year long, the collection of use data collected between November and April in any given year is minimal.

Each year, the Grande Ronde and Wallowa rivers receive thousands of visitors who access the river corridors primarily by means of non-motorized watercraft, such as inflatable rafts, drift boats, canoes, or kayaks. In 2009, the BLM's boater self-issue permit system recorded that 1,167 boats and 5,168 people floated the Grande Ronde River. Approximately 75 percent of these users floated the Wallowa River, which is the 10-mile long gateway to the Grande Ronde River. These rivers offer rare, multi-day primitive float experiences for individuals with beginning to moderate skill levels. The primary boating season extends from early mid-February to mid-July, except during low water years when low flows shorten the season. The most popular segment used begins at Minam, Oregon, on the Wallowa River and continues downstream to the Mud Creek take-out on the Grande Ronde River. Although non-motorized floating is the primary form of access to these river systems, a small but steady increase in motorized jet boat use has been seen on the authorized sections of the river. This use has had historical occurrences on the Wallowa and Grande Ronde rivers and was considered an appropriate activity in the river sections identified in the river management planning process. However, in recent years more jet boat use, primarily associated with the early steelhead-fishing season, has been occurring. Primarily on the Wallowa River, the increase in use pressure from motorized access in conjunction with the narrow river system, limited pools for boats to get up on plane, and flow levels has affected the quality of the recreational experiences of float boats or shore-based river users.

Fishing and Hunting

Fishing is a popular recreational activity in the Planning and Decision Areas. Fishing for bass, crappie, catfish, salmon, steelhead, and trout occurs primarily on the larger rivers in the Decision Area such as the Grande Ronde, Powder, Wallowa, and Snake rivers. Other rivers and streams in the Decision Area see fishing use as permitted during open seasons. While fishing for catfish, crappie, and bass primarily occurs on the Snake River reservoirs, concentrated use for the pursuit of salmon, steelhead, and trout occur on the larger rivers. The variety of warm and cold-water fish species occurring within the Decision Area offers anglers opportunities to enjoy the challenge of targeting a specific species, or enjoying a variety of many species within the same general area. The seasons regulated by the state allow for fishing enjoyment throughout the year.

Big game hunting is a major recreational activity and opportunities exist for hunting deer, antelope, elk, bighorn, mountain goat, bear, and cougar. The area also provides opportunities for almost all other small game and bird species (resident and migratory). Local, regional, statewide, and out-of-state hunters utilize the public lands in the Decision Area to hunt these game species, as well as for hunting and trapping a variety of predator and varmint species.

Camping and Picnicking

Camping and day-use activities such as picnicking occur throughout the Decision Area in both developed and dispersed sites and at all times of the year. Such activities are often associated with other forms of recreation, such as boating, hunting and fishing, and OHV use, which partially explains the large number of campers in the Decision Area (see Table 3-53). For many individuals, however, camping or picnicking in the Decision Area is their main recreational pursuit. These individuals are attracted by the large amount of federally-managed lands in the Decision Area that offer a variety of settings from arid high desert to timbered forest conducive to many camping and picnicking opportunities.

Interpretation, Education, and Nature Study

The development of NHOTIC has prompted an increase in the number of visitors in search of interpretation and education opportunities in the Decision Area. In addition to NHOTIC, universities and special interest groups use the unique and varied characteristics found in the Decision Area for educational opportunities, nature studies, and historical studies. Finally, the Decision Area offers many opportunities for novices to enjoy and study the natural and historic surroundings of eastern Oregon.

Specialized Non-Motor Sports, Events, and Activities

Other activities, including archery shoots, historical re-enactments, mountain bike races, volunteer events, photography, wildlife viewing, rock hounding, and rock climbing occur within the boundaries of the Decision Area. These activities are usually dispersed in nature and occur throughout the Decision Area.

OHV Use

The Decision Area has some outstanding opportunities for recreational OHV use on system roads, un-maintained ways, and "open" OHV-use areas. The precise percentage of the visitors to the Decision Area who use OHVs at some point during their time spent on public lands is unknown. According to the RMIS data (BLM 2009), only 4 percent of those visiting the Decision Area engage solely in OHV travel (see Table 3-53); however, this estimate is derived from the use that occurs only at the 4,918-acre Virtue Flat OHV Play Area located east of Baker City. All other OHV use in the Decision Area is not specifically documented and is often associated with other forms of recreation ranging from hiking, camping, hunting, fishing, driving for pleasure, and sightseeing. Taking into account that Oregon, Washington, and Idaho account for 5 percent of OHV participants across the country (Cordell 2005 p. 14, Table 6), it can be assumed that OHV use is higher throughout the Decision Area than those numbers currently documented within the RMIS data based on Virtue Flat OHV Play Area use alone.

With the exception of the designated Virtue Flat OHV Play Area, OHV use is dispersed throughout the Decision Area. Most visitors use OHVs to access recreation destinations by road and to tour remote jeep and historic trails. A large percentage of OHV use, however, occurs as support for other recreational pursuits. For instance, campers often bring along an OHV to explore or access otherwise inaccessible sites. Only a small number of OHV users are believed to travel cross-country (off roads or ways) as part of their recreation activity, such as to retrieve game or for challenging, off-road play.

Increasing concern among management agencies, as well as among public land users, is developing over the lack of access to public lands. Historical "good neighbor" access of the past, whereby private landowners allowed casual use across their property to access public lands, is not as common as in past decades. Public lands that are surrounded by private lands have become more unavailable as the private land access is lost and gated. In addition to public use being eliminated on these lands, agency management is also impacted unless private uses such as grazing permits authorize agency access. Motorized uses on these lands via private access are currently un-controlled and, in most cases, un-monitored due to privately controlled access points. Therefore, the recreational impacts of private use of public lands are unknown and unrestricted.

With the growing trend of motorized use of public lands, concerns by the public are often raised as to the continuation of this legitimate use as access is lost or eliminated, as well as concerns regarding the cumulative impacts over time of this use on public land conditions and resources.

OHV Designations: Under the current Baker RMP (BLM 1989), most of the public lands (approx 67 percent) were classified as "open" for OHV use. The RMP classified OHV use as limited to existing roads and trails in some specially designated areas (e.g., Lookout Mountain, Burnt River Canyon, ACECs, and WSRs). Areas classified as "closed" include NHOTIC, WSAs, wild sections of WSRs, and where resources have been threatened or have required additional protection. Additional discretionary closures can and have been made in emergencies,

such as cases of imminent resource damage or for fire rehabilitation; however, these emergency closures are usually for short durations until the situation causing the need for the closure is resolved.

The Virtue Flat OHV Play Area was established in 1980 and encompasses 4,918 acres of public lands, including 3,500 acres designated as "intensive use," and over 61 miles of trails. This area provides outstanding opportunities for all classes of OHV use (Class I [ATV], Class II [Jeeps, SUVs, Utility Terrain Vehicles, and the like], and Class III [motorcycles]) and every possible skill level. A growing number of Class II "rock crawlers" have discovered this area and the technical challenges it contains.

Within the identified areas of the current Baker RMP (BLM 1989), off-road or overland travel is allowed to occur on 67 percent of the Decision Area. When these OHV designations were made in the late 1980s, motorized uses were in their infancy and occurred primarily in the form of jeep or trail bike activities. However, the advent of technological improvements and inventions has pushed this form of activity to the forefront of recreational uses. The increased amount of use, whether solely motorized, or where motorized use is associated with some other recreational pursuit, has grown in concern for both agencies and public alike.

Winter Activities (Motorized and Non-Motorized)

The Decision Area offers a variety of winter activities in the form of cross-country and downhill skiing, all forms of motorized winter use, scenic driving, sightseeing, and general snow play. All of these activities occurring on BLM-managed public lands are dispersed in nature. Numbers of users in the pursuit of these types of recreational activities are not well documented within the Decision Area. The wide variety of elevation changes and mountainous terrain across the Decision Area allow for recreational winter uses to begin earlier in the winter months, and to continue later into the spring.

Concerns over the motorized winter use activities are very much the same as identified under OHV use. Impacts from motorized access still occur to specific resources of the Decision Area, even during winter use periods. With growing technological improvements to and capabilities of over-snow vehicles, areas once unreachable are now easily accessed. Like other motorized uses, regardless of their season of use, concerns about access for the enjoyment of these pursuits, as well as the impact this increasing use is having on resources, is a concern for both members of the public and managing agencies.

Commercial, Competitive, and Organized Group Recreation Uses

The BLM issues special recreation permits (SRPs) in the Decision Area that allow specified commercial uses of public lands and related waters. On average, only 30 such permits are issued each year. The BLM and the USFS Walla Walla Ranger District jointly manage most of these SRPs for rafting on the Wallowa and Grande Ronde WSR systems. The remaining permits issued by the BLM within the Decision Area are primarily for hunting or fishing.

The SRP program also administers a variety of commercial, competitive, and organized group uses within the Decision Area. While some of these SRPs, such as those issued to hunting outfitters and guides, can be issued for use throughout the Decision Area, most are area or activity specific, such as those issued for fishing, whitewater rafting, and horse packing. Permits for competitive events and special events are seldom requested, with only a few such events occurring in the Decision Area during the last 20 years. Some of these specialized events have included wagon trains, archery shoots, and a few OHV races. Currently, there is a cross-jurisdiction permitting system for commercial SRPs; however, no known permits have been issued for the Decision Area from other districts.

For the past 20 years, the Baker FO has been concerned with unauthorized commercial uses that should be captured under the SRP program. There continues to be a number of non-permitted outfitters within the boundaries of the Decision Area who avoid obtaining legal authorization for commercial activities, which primarily consists of hunting, boating, and fishing ventures. Therefore, the impacts from these activities or the quality of service, safety, or appropriateness of events provided to customers are unknown.

b. Trends

Recreation use in both the Planning and Decision Areas is expected to increase due to a combination of social and environmental conditions in Oregon and neighboring states and the overall growing trend of people seeking out public lands and the opportunities they contain. Without active management, natural resource conditions and the quality of recreational experiences would decline with increased recreational use. Providing recreational opportunities for all recreational endeavors in the Decision Area will continue to be a priority. Resulting impacts from these forms of use, whether positive or negative in nature, will always be a concern as technology enables new forms of recreational use, and managing agencies react to find balance between the resources of the public lands and recreational demands.

Developed Recreation Activities

Developed recreation sites are primarily concentrated in high-use areas along the Snake River reservoirs, WSRs, Virtue Flat OHV Play Area, and NHOTIC. While information on the amount of use for these areas has been collected, actual use continues to fluctuate based on seasonal conditions, water flows, fuel costs, and accessibility. Generally, use patterns seem to be increasing in these areas as more people seek out recreational opportunities on public lands. Improvements made to developed sites in the Decision Area also aid in drawing both local and non-local recreational users to these areas and are expected to aid in the continued increase of users on these sites. There is also an increased demand for the development of additional facilities, including campgrounds, trails, and interpretive and education opportunities, in specific high-use recreation areas.

Dispersed Recreation Use

Recreation use in the Decision Area is increasing annually and is predicted to continue. A number of factors contribute to past and anticipated future increases in use, including the following:

- An increase in the population of Oregon
- Displacement from other recreation areas due to loss of opportunity or change in management
- Increasing leisure time and disposable income for the working population
- Increasingly active retired population with more disposable income
- Rapidly evolving forms of recreation and new vehicles/gear for pursuing recreational activities
- A focus on the importance of natural resource-based recreation due to the population becoming increasingly urbanized
- Increasing importance of recreation as a component of the local and regional economic base, surpassing traditional industries in many areas
- Increasing popularity of outdoor recreation as a family-oriented activity

Taken together, these factors will likely increase recreation usage and demands on natural resources. Camping, fishing, hunting, visiting parks, boating, OHV use, hiking, and biking are generally the major outdoor recreational pursuits, with their associated use areas often located on public lands outside of local communities.

<u>Water-based Activities (Motorized and Non-Motorized Boating, Swimming, etc.)</u>

With the special designated areas, as well as the numbers and size of reservoirs within the Decision Area, water-based activities have seen an increase in use over recent years and are predicted to increase into the future. Most every recreational activity on public lands is, in some way, associated with water, which serves as a magnet for a variety of recreational activities. Use patterns along reservoirs, lakes, rivers, and streams in the Decision Area indicate fluctuating, yet steady, increases in recreational pursuits associated with those areas. Activities range from jet boat use, whitewater rafting, fishing, hunting, camping, or general water play (e.g., water skiing, jet skiing, swimming, sail boarding, and floating). Again, as stated in earlier sections, technological improvements or inventions have driven an increase in water-based types of recreation. This increase of activities is most evident in the development of recreational sites along the reservoirs to meet public demands, or from imposing regulations in other water-based areas to offset impacts from the increasing use. Although the number of water-based users throughout the Decision Area varies based on season, economic conditions, and water levels, the general increase in numbers is still evident and is expected to continue.

Hunting and Fishing

The state fish and game agencies (i.e., ODFW and WDFW) who manage the game and fish species within the Decision Area, as well as the numbers of tags issued for their take, partially influence the use numbers for hunting and fishing on public lands. Throughout Oregon, the number of resident deer hunters has declined over the past 30 years, while sales of elk tags have remained relatively constant (BLM 2008, p. 312). However, the number of non-resident elk hunters has increased. Overall, the sale of both resident and nonresident deer and elk tags are anticipated to decline over the next five years. Nevertheless, hunting for deer and elk will likely remain popular recreational activities in the Decision Area as they are historic and fundamental activities related to being in the "great outdoors." In addition, EO 13443, issued on August 17, 2007, directed the BLM, as well as other federal agencies, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. Over time, this new direction could help reverse the trend in declining deer hunts and increase general hunting and fishing activities in both the Planning and Decision Areas.

Camping and Picnicking

Overnight camping, as well as day-use activities such as picnicking, represent some of the primary uses of public lands. These pursuits are both developed and dispersed in nature and usually associated with other recreational activities such as fishing, hiking, or driving for pleasure. Camping and day-use activities are a primary method of bringing members of the public to the outdoors and to the resources and activities available on public lands. These activities will likely show a steady upward trend over time as the both the population and their desire for recreational experiences increase.

Interpretation, Education, and Nature Study

The public demand for the maintenance or improvement of educational facilities will likely increase with time. However, these pursuits are usually associated with more developed facilities, and are often in conjunction with the activities of scholastic organizations, historically significant resources, or unique natural resources. Like all other recreational activities in the Decision Area, an increase in the demand for these forms of activities is expected to increase over time; however, these endeavors usually increase at a much slower rate than other recreational activities.

Specialized Non-Motor Sports, Events, and Activities

Little data are available that would lead to speculation on the future use levels associated with specialized non-motor sports, events, and activities. The BLM does expect that, as technology improves for traditional, non-motorized uses or new forms of non-motorized use develops, there will be a slight, but steady, increase in such uses.

OHV Use

Recreational OHV use in particular has increased throughout the Decision Area. As a whole, trail systems, touring routes, and OHV play areas are in high demand. Vehicle tours of various locations within the Decision Area are another popular activity for both casual recreation users and organized groups.

In 1960, when the first National Survey on Recreation and the Environment was conducted for the Outdoor Recreation Resources Review Commission, off-highway motorized recreation was not even considered a recreational activity. From 1982 to 2000/2001, driving motor vehicles "off-road" became one of the fastest growing activities in the country, growing in the number of participants over 12 years old by more than 100 percent (Cordell 2005). Data on OHV use gathered by the 1999/2000 national recreation survey showed a 32 percent increase in such use when compared to data collected during the 1982/2000 survey. This represented a growth from about 27.3 million OHV users in 1994/1995 to about 36.0 million in 1999/2000. In addition, the proportion of people age 16 and older who said they participated in OHV recreation increased from 16.8 percent in 1999/2000 to 23.8 percent in 2003/2004. This resulted in a 42 percent increase in the number of OHV participants over the four years that elapsed between surveys, from 36.0 million to 51.0 million. Based on the latest data, more than 1 in 5 Americans (39.7 million people) age 16 and older participated one or more times in OHV recreation within the past year. Of these 39.7 million OHV users, Oregon, Washington, and Idaho accounted for 1.9 million users (Oregon 581,500, Washington 1,010,900, Idaho 320,800), or about 5 percent.

According to Motorcycle Industry Council reports, OHV annual sales more than tripled between 1995 and 2003, to more than 1.1 million vehicles sold in 2003 (Cordell 2005). Recreational enthusiasts are buying OHVs at a rate of 1,500 units per day nationwide, with nearly one-third of them doing so as first-time buyers of such vehicles. All-terrain vehicles (ATVs) continue to account for more than 70 percent of the OHV market. The number of OHVs in the United States grew nearly as fast, increasing 174 percent between 1993 and 2003. In just ten years, the number of OHVs grew from fewer than 3 million vehicles to more than 8 million in 2003. Similar to sales, the number of ATVs in the United States represents about 70 percent of the total number of OHVs, not counting four-wheel-drive vehicles (Cordell 2005).

The trends documented in the United States suggest that OHV use and sales in and around the Decision Area will continue to increase into the future.

Winter Activities (Motorized and Non-Motorized)

Winter activities in the Decision Area, both motorized and non-motorized, have been on an increase over the past decade. Much like OHV uses, over-snow vehicles have seen technological developments that make this activity more desirable by a larger proportion of the public. These developments, ranging from tracked OHVs and snowmobiles that are more powerful to lighter and more user-friendly snowshoes and skis, continue to draw recreationists into winter activities and, subsequently, to the public lands. Non-motorized forms of winter activities are expected to

experience a moderate increase in use, while motorized winter pursuits are expected to experience a moderate to large increase in use over the next few decades.

Commercial, Competitive, and Organized Group Recreation Uses

Although the demand for SRPs to perform commercial services on public lands has not significantly increased over the past 10 years, those activities are anticipated to increase in the future as the population continues to spend more time on public lands. The SRP activities often offer a specialized opportunity for the recreating public to experience activities that they themselves do not have the skills, equipment, or financial abilities to perform independently. Such commercial activities primarily consist of hunting, fishing, and boating.

According to the BLM recreation report:

> [T]here has been a "growth" of tourism and recreation in the western states, especially on public lands. Region wide, tourism is one of the fastest, and in many cases, one of the few growing industries. In response to this economic reality, state and local initiatives to promote tourist attractions involving BLM administered lands are being developed with the stated objectives of attracting regional, national, and international visitors. (BLM 2000, p. 48)

In the Decision Area, an example of the above-mentioned response to the growth in tourism and recreation is the SRP process used for competitive and/or commercial events. Through the SRP process, the BLM has authorized mountain bike races, as well as historical reenactment events; however, the main emphasis within the Decision Area is still for “commercial” SRPs. The BLM will probably receive more such permit applications for similar activities in the future, and new forms of commercial use not currently identified could be seen in coming years.

Special Designations

Designated special areas such as WSRs, wilderness, and WSAs will continue to attract recreational visitors to the region. Increased advertising and marketing for these popular destinations will contribute to an increase in recreation use across the Decision Area. The potential for additional designated special areas, such as WSRs, or areas containing wilderness character will also boosts the potential for increased recreation in the area. Although the users of such areas are limited in number throughout the Decision Area, it is expected that the uniqueness of these special areas will draw more use as recreationists seek to experience the primitive nature or unique qualities of public lands.

6. TRANSPORTATION AND ACCESS

a. Current Condition

Roads, Primitive Roads, and Trails

Several highways cut across the Planning Area, traveling in various directions (see Maps 3.18, 3.19, and 3.20). Traveling north to south from Asotin, Washington in the northern border of the Planning Area, through La Grande near the center of the Planning Area, south through North Powder, Baker City, and Huntington, Oregon near the southern end of the Planning Area involves several highways, including Highways 129, 3, and 82 and Interstate (I)-84. Traveling West to East from Boardman through Pendleton, La Grande, Baker City, Richland, and Halfway, and ending at Oxbow Reservoir on the Snake River, which is the eastern edge of the Planning Area boundary along the Oregon/Idaho border, involves the use of I-84 and Highway 86. Numerous other highways cut across various sections of the Planning Area, including Highway 244, which travels east from Ukiah and La Grande; Highway 3, which travels north from Enterprise to the Oregon/Washington state line turning into Washington Highway 129 to Asotin; Highway 86, which travels east from Baker City to the Oxbow Reservoir on the Snake River; and Highway 30, which travels southeast from Baker City towards Huntington. Due to the scattered ownership patterns of the Decision Area, numerous highways are used to access the majority of public lands that make up the Decision Area.

In addition to the paved highways that cut across the Planning Area and provide access into portions of the Decision Area, a number of secondary roads contained within county, BLM, or USFS road systems, some paved and some gravel/dirt, also run through the Planning and Decision Areas. There are also numerous, primitive roads and trails open for motorized and/or non-motorized use that allow access into the Decision Area. Table 3-54 provides the historical number of miles of highways, roads, primitive roads, and trails that are currently found in the Decision Area and those that cut across public lands (i.e., cut through the Decision Area). Map 3-19 (on CD) illustrates the existing transportation network in the northern portion of the Planning Area, Map 3-20 (see CD) shows the existing transportation network in the southern portion, while Map 3-21 (see CD) shows the existing transportation network in the western portion of the Planning Area.

Table 3-54. Miles of Roads, Primitive Roads and Trails in the Planning and Decision Areas

Location	Highways	Roads	Trails
Planning Area	1,526.87 miles	29,782.22 miles	2,360.43 miles
Decision Area	48.49 miles	1,005.65 miles	96.55 miles

The definition of roads, primitive roads, and trails are as follows:

- **Road**: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

- **Primitive Road**: A linear route managed for use by four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standards.
- **Trail**: A linear route managed for human-powered, stock, or off-highway vehicle forms of transportation, or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

These roads and trails have been re-inventoried, although the BLM assumes that there could be some trail systems unknown or undiscovered by BLM staff that could be identified by members of the public in the future. Road density for the Decision Area is based 428,425 acres of public lands, which is approximately 669 square miles. Current mileage and road densities are shown in Table 3-55. Within this table, those roads identified as "unknown" are a combination of primitive roads and trails that exist on public lands, but for which the existence of legal easements or ROWs remains unclear. The BLM assumes that they have authority over these primitive roads and trails, unless other legal documents can be produced to prove otherwise.

Table 3-55. Road Mileage and Density within the Decision Area-2010

Road Ownership	Owner designation	Miles	Miles of road per Square Mile on Public Lands
BLM	Inventoried Roads	569	0.9
County	BLM/County	123	0.2
USFS	BLM/USFS	15	0.0
BLM Unknown	Inventoried Primitive Roads or Trails	500	0.7
Total		**1207**	**1.8**
Total road/density controlled by BLM		**1069**	**1.6**

The maintenance levels of Decision Areas roads, primitive roads, and trails can vary in degree. Currently, maintenance levels are identified as "maintenance intensities," which are divided into removal, primitive, low, medium, and high. Removal roads, primitive roads, or trails are those segments of the transportation system that are classified to be removed from the transportation network entirely. Primitive maintenance intensities for roads, primitive roads, or trails are those segments that rarely receive physical maintenance or are needed to mitigate situations to ensure public health and safety. Low, medium, and high maintenance intensities can occur at each level across the range of roads, primitive roads, or trails to meet use demands, access requirements, or resource objectives.

Access to these road/trail networks is dependent upon OHV area designations or identified special area restrictions. In general, the BLM considers roads and trails across the Decision Area to be shared multi-use systems for all methods of use (e.g., motorized, mechanized, foot, or equestrian).

Access

The BLM cannot effectively administer public lands without legal and physical access. Methods used to acquire legal rights that meet resource management needs include negotiated purchase,

donation, exchange, and condemnation. Acquisition alternatives include purchase of fee or less-than-fee interest above, on, and below the surface, as well as perpetual exclusive and permanent or temporary nonexclusive easements. Acquisitions of road or trail easements are probably the most frequently encountered access needs. Types of easements that can provide some method of public access (e.g., motorized, mechanized, or pedestrian) include permanent forms of road easements, scenic or conservation easements, as well as hunting and fishing easements.

Currently, access needs are prioritized and subsequently worked on when there are landowners willing to sell either easements or portions of their private lands. These opportunities to provide access to public lands are primarily dependent upon funds available to secure the access. Many of the easements acquired in the Decision Area are short-term access easements to administer project activities (i.e. forestry projects) and do not secure permanent public access. Additionally, a large number of the isolated parcels of public lands in the Decision Area lack legal public access. Public complaints and inquiries regarding access to these lands within the Decision Area have increased significantly within the last ten years. Not only is the public's access to these parcels limited or non-existent, the BLM also occasionally lacks access. This lack of legal access greatly restricts the agency's ability to manage or monitor resource values, authorized uses, or unauthorized activities occurring on those lands.

b. Trends

Public demand on the existing transportation system, including interstates, highways, roads, and trails, will likely increase in proportion to the number of users of public lands. The combination of all the existing road systems serves as conduits that directly benefit the multiple use and enjoyment of the public lands in the Decision Area. Increased travel across public lands by motorized and non-motorized equipment will increase the need to manage, maintain, and, in some cases, improve the current transportation system.

With the increased pressure on public lands by motorized recreational use, the need to address where, when, and how to manage this use will be essential. The level of production and sales of motorized recreational vehicles in the Pacific Northwest will likely continue its steady increase, which will mirror the amount of motorized recreational use that occurs on public lands. Scenic driving and motorized vehicle exploration by recreational users will increase the need to provide appropriate areas or road/trail systems to support this kind of use. Acquiring access to public lands will also provide for increased opportunities of other recreational activities such as hunting, camping, and fishing on lands that have been historically inaccessible. Within the Decision Area, key areas that contain a high priority for access needs are the larger tracts of public lands; areas that already contain existing road or trail systems or that create continuity or connectivity to road and trail systems managed by state, private, or other federal entities; and areas that have lost access over time due to private land closures, which have made numerous tracts of public lands unavailable for public use.

7. LAND TENURE

a. Current Conditions

The Planning Area contains a mixed-ownership land pattern with state, private, and other federal lands interspersed among the BLM managed public land. Although the potential for resource values may be high on some public land parcels, lack of access or isolation from other resources of these parcels can make them very difficult to manage. Land tenure adjustments within the Planning Area help to resolve split mineral estate situations, consolidate public lands (through sale, exchange, or acquisition), acquire access, and resolve unauthorized use cases. Such adjustments are also important to local and state governments to consolidate ownership and to make lands available for public purposes.

Public lands within the Decision Area contain split mineral estate situations, which involve private surface ownership and federal subsurface ownership. Through various acts, the federal government has retained mineral values, while encouraging settlement. As late as the 1980's, BLM policy concerning mineral estates was to reserve all oil and gas rights, as well as any other mineral values. Those lands for which the U. S. has reserved minerals where they contain valuable mineral resources are generally kept in federal ownership. Management of the existing split estates can be complex. Land tenure adjustment proposals that would either create split estates, including reservation of minerals in the Federal land proposed for disposal, or fail to take advantage of consolidation opportunities are discouraged to reduce possible management conflicts. The surface estate is subservient to the mineral estate, and unless the mineral rights attached to a property have been subordinated, mineral development will take precedence over surface uses and could cause significant conflicts with resource management objectives.

As mandated by Section 102(a) of FLPMA, public lands are to be retained in federal ownership unless, under the land use planning procedure provided for in the Act, it is determined that disposal of a particular parcel will serve the national interest. Land may be identified for disposal by sale, exchange, state indemnity selection, or other authorized methods. Land types will be identified for acquisition based on public benefits, management considerations, and public access needs. Specific actions that meet land tenure adjustment criteria established in the Baker RMP will occur with public participation and will be made in consultation with local, county, state, and tribal governments.

Land Disposal

In the current RMP, public lands in the Planning Area have been placed into two land tenure classification zones (see Map 2-14 in Chapter 2). These zones categorize public lands for potential land tenure adjustments. The lands were identified for retention and acquisition or for disposal by authorized means.

Zone 1: Contains the lands identified for retention and acquisition. These are lands that best serve the management missions of the BLM and have higher public values including

multiple use, management efficiency, and public access to resources or have national, statewide, or regional resource values.

Zone 2: Contains lands that are inefficient to manage because of their small size or isolated location, or have no known or lower resource values. Those lands are available for disposal actions pending a site-specific environmental analysis. The preferred order of disposal mechanisms is as follows:

1. Federal agency jurisdictional transfers
2. Transfers to state and local agencies
3. State exchanges
4. Private exchanges to acquire lands in Zone 1 that would enhance resource management programs or improve public service
5. Public sales

Public lands have potential for disposal when they are isolated and/or difficult to manage or have no known or lower resource values. Disposal actions are usually in response to public request or applications that result in a title transfer, wherein the lands leave the public domain.

The BLM manages public land sales under the disposal criteria set forth in Section 203 of FLPMA. Public lands are unavailable if they are classified, withdrawn, reserved, or otherwise designated as not available or subject to sale. Any lands to be disposed of by sale that are not identified in the Baker RMP (BLM 1989) require a plan amendment before that sale can occur.

The preferred method of disposal is land exchange. Exchanges of public land are conducted under Section 206 of FLPMA, which requires a determination that the public interest will be well served by making an exchange.

The BLM completed land exchanges in the 1990s in Wallowa, Umatilla, Union, Baker Counties, Oregon and Garfield and Asotin Counties, Washington. The Windswept Land & Livestock Company exchange conveyed approximately 1,097 acres to private ownership and approximately 1,000 were transferred into public ownership. The Clearwater I and Clearwater II land exchanges involved willing owners, transferred approximately 6,122 acres from public ownership to private ownership, and transferred approximately 5,972 acres into public ownership. The majority of lands acquired were along the Grande Ronde River in both Oregon and Washington. The Northeast Oregon Land Exchange was a partnership with BLM's Prineville District and exchanged public lands in Umatilla and Morrow counties for lands along the North Fork of the John Day River. Through this exchange, approximately 1,740 acres were conveyed to private ownership and approximately 13,553 acres were transferred into public ownership. These lands are now managed by the Prineville District.

Land Acquisition

Acquisition of private land is authorized under section 205 of FLPMA and can be pursued to facilitate various resource management objectives. Acquisitions (including easements) can be completed through exchange, purchases, or donation. In 1964, Congress established the Land and Water Conservation Fund (LWCF) (PL 88-578) to provide for the acquisition of public lands to meet the needs of all Americans for outdoor recreation and open space.

The Baker FO acquired 3,459.20 acres of lands within and adjacent to the Grande Ronde WSR Corridor and the Grande Ronde ACEC with LWCF funding. This nationally recognized LWCF project area has received funds since 1992. Table 3-56 identifies the lands acquired along the Grande Ronde River from LWCF monies.

Table 3-56. Lands Acquired Along the Grande Ronde River from LWCF Monies

Date	Acres	Serial #	Grantor	Title Accepted by US on
FY 1992	2,112.75	WA 47601	Trust for Public Land	01/29/1993
FY 2004	360.00	OR57957	The Conservation Fund	09/29/2004
FY 2008	986.45	WA63496	The Conservation Fund	09/16/2008
To Date	3,459.20			

The Baker FO also received LWCF funding and acquired lands within the Snake River Recreation Management Area and along the South Fork of the Walla Walla River. Along the South Fork of the Walla Walla River, 64.70 acres were acquired in 1991. In 2006, the BLM acquired 225 acres in Baker County, Oregon, in the area of Swedes Landing, located between Huntington and Richland, Oregon. The purpose of the acquisition was for the protection of critical deer habitat and threatened vegetation.

b. Trends

The BLM engages in land tenure adjustments in order to enhance public resource values and improve land patterns and management capabilities of public lands within the Planning Area by consolidating ownership and reducing the potential for conflicting land use. Land tenure adjustments within the Planning Area help to resolve split mineral estate situations, to consolidate public land (through sale, exchange, or acquisition), to acquire access, and to resolve unauthorized use cases.

Because of the mixed ownership land pattern within the Planning Area, and the lack of access to many parcels of public land, an increase in requests from private individuals and communities to acquire public lands is expected.

8. LAND USE AUTHORIZATIONS

a. Current Conditions

Land Use Authorizations are issued for a variety of purposes, both short and long term. Short-term uses include temporary staging areas, commercial filming, apiary sites, and other uses involving minimal land improvements or disturbances. Long-term uses include ROWs for power lines, energy development, roads, pipelines, communication sites, and irrigation. Applicants can be federal, state, and local governments or private individuals and organizations.

The BLM encourages and generally prefers consolidation, co-location, and the use of established utility and transportation corridors for compatible land uses.

Rights-of-Way

An ROW is an authorization to place facilities over, on, under, or through public lands for construction, operation, maintenance, or termination of a project. Energy development has emerged as an issue of concern from the public. Energy development, both renewable and non-renewable, would be authorized through the issuance of an ROW and will be analyzed within the land use authorization section.

Public lands within the Decision Area are available for ROWs unless within an exclusion area. Avoidance and exclusion areas are currently identified within the Decision Area to protect resources and prevent unnecessary or undue environmental damages. Right-of-way exclusion areas include wilderness areas and wild river segments. Right-of-way avoidance areas include WSAs, ACECs, and scenic and recreation river segments.

Currently, the Baker FO administers approximately 450 ROWs, issuing an average of ten new ROWs each fiscal year. These authorizations include such uses as roads, water pipelines, natural gas pipelines, power lines, telephone lines, fiber optic cables, and communication sites. See Map 3-22 (on CD) for the location of ROWs in the Decision Area.

The Baker FO currently has one authorized ROW for wind testing and monitoring, five pending wind energy testing and monitoring applications, and two pending development project applications. Map 3-23 (on CD) shows the areas with the greatest potential for wind development in the Planning Area. To date, there have been no applications submitted for other renewable energy developments such as solar or geothermal.

The Decision Area has two major communication sites within its boundaries: Lime Hill and Gold Hill. There are four other smaller communication and single-use sites: Big Lookout Mountain, Halfway/Richland Hill, Sheep Mountain, and Hermiston Butte. See Appendix 3.8 for details on these sites.

Transportation system authorizations include reservations made for state and federal highways and ROWs granted to counties and individuals for access roads. The Baker FO also issues ROWs to the Federal Highway Administration to a public land appropriation for highway ROWs and sources of materials for the federal-aid highway system. There are approximately 30 ROWs issued for material sites.

The Western Utilities Group designated several ROW corridors within the Decision Area. The corridors designated in the Baker RMP (BLM 1989) were routes of existing powerlines, pipelines, and communication sites. These corridors are also in conjunction with interstate highways, state highways, and railroads. Applicants are encouraged to use the existing corridors where feasible. The designated corridor widths vary depending on the number of parallel facilities, but are a minimum of 2,000 feet (1,000 feet either side of existing centerlines, unless adjacent to areas identified as exclusion/avoidance areas).

The Approved RMP Amendments/ROD for Designation of Energy Corridors on BLM Administered Lands in the 11 Western States (BLM 2009a) are consistent with the requirement of Section 368 of the Energy Policy Act of 2005. This document amended the Current Baker RMP (BLM 1989) by designating one Section 368 Energy Corridor (250 – 251) on public lands along I-84 (see Map 3-22 [on CD] for the location of this corridor).

Land Use Permits and Leases

Permits are authorized when uses of public lands will be short-term and involve little or no land improvement, construction, or investment. There are currently four permits authorized for uses such as croplands and rock stockpile sites.

A lease is an authorization to possess and use public land for a fixed period of time. A lease is issued when there is going to be substantial construction, development, and improvement and there is an investment of large amounts of capital that will be amortized over time. There are currently two long-term leases issued for the Decision Area.

The Recreation and Public Purposes (R&PP) Act allows state and local governments, as well as qualified nonprofit organizations, the opportunity to lease (and potentially patent) public land where there is a strong public need for a particular use. The Baker FO has four leases authorized under this authority for purposes of a sportsman shooting range, rest area, and interpretive signs.

b. Trends

The requests for ROWs throughout the Decision Area are expected to increase. On August 8, 2005, President Bush signed the Energy Policy Act of 2005. The legislation was written to promote dependable, affordable, and environmentally sound production and distribution of energy for America's future. The Secretary of the Interior issued Order No. 328, which established the development of renewable energy as a priority for the DOI. Section 211 of the Energy Policy Act calls for the Secretary of the Interior to approve non-hydropower renewable

energy projects located on public lands with a generation capacity of at least 10,000 megawatts (MW) of electricity before the end of the 10-year period, beginning on the date of the Act's enactment. The demand for alternative energy-related ROWs is predicted to increase nationally, as well as within the Decision Area.

According to current BLM guidance and the President's National Energy Policy Act of 2005, the BLM's objective is to continue to make public lands available for needed ROWs where consistent with national, state, and local plans, and use ROWs in-common to minimize environmental impacts and proliferation of separate ROWs.

Applications for R&PP leases are expected to increase as communities expand, necessitating the need for more public purpose areas.

9. PUBLIC ACCESS

a. Current Conditions

Due to the scattered land ownership pattern in the Decision Area, there is no access to many public lands. Acquisition of access is simplified when there are landowners willing to grant an easement or sell land to the BLM in order to provide access to public lands. Public complaints and inquiries regarding the lack of access to public lands within the Decision Areas have increased significantly within the last 10 years. Not only does the public have limited access to public lands for recreation, often the BLM does not have administrative access to manage or monitor BLM lands.

b. Trends

Public demand for access is expected to continue as the use of public lands, particularly from motorized used, increases and access continues to be limited.

10. WITHDRAWALS

a. Current Conditions

Withdrawals are formal actions that set aside, withhold, or reserve federal land by statute or administrative order for public purposes. There are three major categories of formal withdrawals:

1. Administrative
2. Congressional
3. Federal Power Act or Federal Energy Regulatory Commission (FERC) Withdrawals

Congressional withdrawals are those made by Congress in the form of public laws (i.e., Acts of Congress). Administrative withdrawals are made by the President, Secretary of the Interior, or

other authorized officers of the executive branch of the federal government. Federal Power Act or FERC withdrawals are power project withdrawals established under the authority of the Federal Power Act of 1920. Filing an application for hydroelectric power development with FERC automatically creates such a withdrawal.

Withdrawals accomplish one or more of the following:

- Transfers total or partial jurisdiction of federal land between federal agencies
- Segregates (closes) federal land to some or all of the public land laws and/or mineral laws
- Dedicates land for a specific public purpose

Withdrawals are established for a wide range of public purposes such as military reservations, administrative sites, and power site reserves. Withdrawals are often used to preserve sensitive environmental values, protect major federal investments in facilities or other improvements, support national security, and provide for public health and safety.

By EO dated April 17, 1926 (Public Water Reserve 107), all public lands of the United States containing a spring or water hole needed or used for public purposes were included in a blanket withdrawal without identification of the lands affected. According to the EO, the land is "withdrawn from settlement, location, sale, or entry." Not all lands withdrawn under Public Water Reserve 107 have been identified on master title plats; therefore, their location is not always known, which makes protection and management under this EO difficult.

Under Section 204(l) of FLPMA, withdrawal reviews are mandated for the majority of withdrawn lands in the western states. Certain identified withdrawals could then be modified, extended, or revoked according to the processes outlined in Section 204(a) of FLPMA and further process guidance provided in the BLM Washington Office IM No. 96-145. The current Baker RMP provides direction for the review of withdrawals (BLM 1989, p 54) and for continuation of the withdrawal review program.

b. Trends

There has been an increased interest in retrofitting existing irrigation dams with hydroelectric generating facilities in the Planning Area. Several applications are pending with FERC. The BLM will need to evaluate potential project impacts and participate in the licensing process to assure that appropriate mitigations for public resources are achieved.

Section 204 of FLPMA gives the Secretary the authority to make, modify, extend, or revoke withdrawals and mandates review of withdrawals. The BLM, in cooperation with other federal departments and agencies, is responsible for the periodic review of withdrawals. After review, withdrawals identified could then be modified, extended, or revoked according to the processes outlined in Section 204(a) of FLPMA and further process guidance provided in BLM WO IM No. 96-145. When it appears that a withdrawal no longer serves its original purpose, the need

for an appropriate revocation order shall be considered. The BLM will manage the withdrawn lands in accordance with the objectives of the RMP whether the withdrawals are continued, modified, or terminated.

D. SPECIAL DESIGNATIONS

1. AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Federal Land Policy Management Act and BLM policy (BLM Manual 1613 [BLM 2005a]) requires the BLM to give priority to the designation of ACECs and RNAs during the land use planning process. This RMP revision reviews current lands designated as ACECs and RNAs and evaluate others to determine if they meet the criteria for designation.

Federal Land Policy Management Act Section 103 (43 USC 1702[a]) and 43 CFR 1601.0-5(a) describes ACECs as "areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards." Some ACECs can be Research Natural Areas (RNA) or Outstanding Natural Areas (ONA).

Research Natural Areas are where natural processes predominate and are managed for research and education. Designation of an RNA does not automatically prohibit or restrict other uses in the area. The one exception is that a mining plan of operation is required for any proposed mining activity within a designated RNA.

Outstanding Natural Areas are areas of outstanding scenic quality, natural wonder, or scientific importance that merit special attention and care in management to insure their preservation in their natural condition.

In the Baker Decision Area, the ONA and RNAs are areas within ACEC boundaries. Only public lands are included in ACEC designations. The BLM evaluated each nominated area to determine if it met the relevance and importance criteria listed in BLM Manual 1613. A potential ACEC nomination must meet one or more of the relevance criteria and the importance criteria listed below in order to be considered for nomination and designation.

- **Relevance Criteria (Does the area contain one or more of the following values?):**
    1. A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).
    2. A fish or wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).

3. A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features).
4. A natural hazard (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the RMP process that it has become part of a natural process.

- **Importance Criteria (Does the value, resource, system, process, or hazard have substantial significance or value? Does it meet one or more of the following criteria?):**
    1. Does it have more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource?
    2. Does it have qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change?
    3. Has it been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA?
    4. Does it have qualities that warrant highlighting in order to satisfy public or management concerns about safety and public welfare?
    5. Does it pose a significant threat to human life and safety or property?

Management actions are designed to protect the relevant and important values. These actions may restrict other resource uses. Designation serves a reminder that significant values or resources exist that must be accommodated when future management actions or land use proposals are considered near or within an ACEC. The ACEC designation is an administrative designation that is accomplished through the land use planning process. It is unique to the BLM in that no other agency uses this form of designation.

This analysis and the resultant findings for ACEC, RNA, and ONA relevance and importance criteria has been performed pursuant to FLPMA Section 202 (43 USC 1712[c] [3]), 43 CFR 1610.7-2 and BLM Manual 1613 (BLM 2005a).

a. Current Condition

The Current Baker RMP (BLM 1989) designated nine areas totaling 38,988 acres as ACECs. The BLM designated 80 acres in the Keating ACEC located in Balm, Clover and Sawmill canyons as RNAs. A plan amendment in 1992 added the South Fork of the Walla Walla ACEC to the list of ACECs. Updated GIS information and land acquisitions increased the acreage within some of the ACECs. Table 3-57 displays the names of the ten ACECs, the number of acres for each, and the importance and relevance criteria for which they were designated. Map 2.26 in

Chapter 2 illustrates the location of these ACECs. A brief description of each ACEC follows the table.

Table 3-57. Existing ACECs in the Baker FO Planning Area

ACEC Name	Acres when Designated (1989)/ Current Acres (2010)	Relevance and Importance Criteria
Joseph Creek ONA (Outstanding Natural Area)/ ACEC	3,360 / 3,497	• Natural riparian communities, wildlife habitat, scenic qualities, and geologic system • Managed as ONA to protect riparian, wildlife, scenic, geologic values, recreation and education opportunities
Grande Ronde ACEC	9,715 / 16,960 (2,570 acres are WSR designation)/(2,845 in Wild and Scenic)	• Area's unique natural, scenic, geologic, ecologic, cultural resources, and wildlife habitat • Enhanced recreation opportunities • Visual resources/river viewshed • Goosenecks National Natural landmark
Keating Riparian RNA/ACEC	2,173 / 2,223 (includes 80 acres for Clover Creek, Balm Creek. and Sawmill Creek RNAs)	• Riparian areas and wildlife habitat for research and education • RNAs also have upland vegetation communities represented by Wyoming big sagebrush/wild crab apple step • Fills Oregon Natural Heritage Plan Riparian cell
Powder River Canyon ACEC	5,880 / 5,906 (2,385 acres within Powder WSR) /(2,416 WSR)	• Raptor habitat, wildlife habitat, cultural resources • Scenic qualities
Unity Reservoir Bald Eagle Nest Habitat ACEC	360 / 356 (200 BLM/160 BOR)	• Habitat for bald eagle as described in the USFS Bald Eagle Management Plan
Hunt Mountain ACEC	2,230 / 1,231	• Habitat for mountain goats and big game • Habitat for sensitive plant species
Oregon Trail ACEC	1,901 / 1,901 (7 parcels)	• Historic resource and visual qualities on 7 parcels of public lands with remnants of the National Historic Oregon Trail
Sheep Mountain ACEC	5,398 / 5,289 (includes portion of Sheep Mountain WSA 5,209)	• Outstanding scenic qualities • Wildlife and bald eagle winter habitat
Homestead ACEC	8,537 / 8,750 (5893 in Homestead WSA)	• Outstanding scenic qualities • Wildlife, bald eagle, and sensitive plant habitat
South Fork of the Walla Walla River ACEC Plan Amendment	1,273 / 2,040	• Fisheries, riparian, and wildlife habitat • Allow transplant of bighorn sheep • Special status species of plants and animals and cultural resources

Joseph Creek ONA/ACEC

In the current Baker RMP (BLM 1989), the BLM designated 3,360 acres of public lands on Joseph Creek between Tamarack and Cottonwood creeks as an ONA/ACEC, primarily to protect the natural riparian plant communities of Joseph Creek, and to protect wildlife habitat, high

scenic qualities, and outstanding geologic system values for educational and recreational purposes. A MOU with WDFW was established to have their staff assist the BLM to maintain and improve wildlife habitat in the lands adjacent in the Chief Joseph Wildlife Management Area and identified public lands within the ACEC. The Nez Perce Tribe has purchased lands adjacent to public lands in the ACEC. Deer, elk, bighorn sheep, and raptor habitats are managed in the ONA/ACEC. Aquatic habitat for anadromous fish has been maintained in a natural condition. Added attention has been paid to Joseph Creek due to the ESA listing of steelhead and subsequent consultation with NOAA Fisheries. Current figures (resulting from updated GIS information) show Joseph Creek ONA/ACEC contains 3,497 acres of public land.

The BLM has applied grazing restrictions within the canyon to protect Joseph Creek ONA/ACEC resource values. There is no grazing allowed within the canyon on the west half of the ACEC, while the east half of the ACEC uplands are leased with a stipulation limiting excessive grazing use. The grazing lease includes approximately 2 miles of riparian area that is essentially inaccessible to livestock due to the greatly incised creek channel caused by steep adjacent uplands. As a result, the riparian area associated with Joseph Creek is currently in good condition and exhibits limited signs of grazing.

The 1989 RMP restricted road development, oil and gas leasing, and timber harvesting. No road closures were implemented in Joseph Creek ONA/ACEC, but the topography is very rugged, which limits access naturally. In addition, no applications for oil or gas leasing were received and no timber harvesting has occurred in the ONA/ACEC.

Grande Ronde ACEC

In the current Baker RMP (BLM 1989), the BLM designated 9,715 acres public lands along the Grande Ronde River in Oregon and Washington and on the Snake River in Washington as an ACEC to protect the area's unique natural, scenic, geologic, ecologic, and cultural resource values, and to protect wildlife habitat and enhance recreation opportunities. Geologic system values (i.e., regional uplift and forced entrenchment of the river) of the Goosenecks National Natural Landmark are also protected and included within the ACEC. Although the ACEC was originally 9,715 acres when designated, current figures show the Grande Ronde River ACEC to contain 16,958 acres of public land (5,667 acres in Oregon and 11,370 acres in Washington). This is due to the acquisition of lands through land exchanges and through Land and Water Conservation funds.

In 1988, the Omnibus WSR Act designated the Grande Ronde River in Oregon (from the USFS boundary in Oregon to the Washington state line) as a WSR. Portions of the Grand Ronde ACEC, which currently total 2,845 acres, occur within the WSR boundaries.

The Washington section of the river was not designated under the WSR Act, but was included within the Wallowa and Grande Ronde Rivers Management Plan (BLM and USFS 1993) and protected by the Asotin County (Washington) shoreline committee.

The Wallowa and Grande Ronde Rivers Management Plan (BLM et al. 1993) and BLM efforts since the plan's completion have significantly improved the resource conditions for which the Grande Ronde River was designated as an ACEC and a WSR. As recommended in the Current Baker RMP (BLM 1989), the BLM has acquired 7,245 acres within the boundaries of the ACEC and managed them consistent with the original ACEC designation. The lands acquired were not authorized for grazing and will be evaluated during this planning effort to determine if grazing is consistent with the ACEC designation values.

Public lands along the Grande Ronde River have been managed more intensively since the ESA listings of Chinook salmon, steelhead, and bull trout. Inventory and assessment of most public lands began in 1991 with the first species listings. Livestock grazing leases, seasons of use, and general ecological conditions were evaluated. Grazing permits were modified to ensure protection of riparian values and fish conditions maintained. Exclosures were constructed and changes to livestock grazing seasons of use were made to improve riparian conditions.

In 2002, a fire occurred at the day-use site known as Rogersburg, located at the confluence of the Grande Ronde and Snake rivers. The fire rehabilitation plan included weed treatments, seedings, and road closures. Monitoring in this area has shown improvement of resource values, although regular weed treatment is necessary to ensure continued improvements. Extensive plant surveys have revealed important populations of special status species in this area near and on Lime Mountain. Overall, 17 species of special status plants were documented within the Grande Ronde ACEC (see Section B.9, Special Status Species [Plants] for more details). Portions of two known, high-quality plant communities, as designated by the Washington Natural Heritage Program (WNHP) Plan (2007), and WNHP plan update (2009), occur in the Grande Ronde ACEC. The Hells Canyon mountain snail, a strategic species, was confirmed on Lime Hill as well (Bjork, personal communication, 2010). Mount Wilson, also within the Grande Ronde River ACEC, contains the only documented occurrence of Engelmann's daisy found in Washington, which is sensitive in both Oregon and Washington.

Keating ACEC/RNA

In the current Baker RMP (BLM 1989), the BLM designated 2,173 acres of public lands on Balm, Clover, and Sawmill creeks in the Keating Valley area as an ACEC to protect riparian values and wildlife habitat. A combination of 80 acres of Balm, Clover, and Sawmill creeks within the ACEC were designated as RNAs to protect and maintain natural riparian ecological systems for research and educational purposes. The University of Aberdeen, Scotland, has used the Balm Creek portion as an outdoor education site.

Very little of the Keating ACEC/RNA was excluded from grazing because the area is generally included within pastures. Historic mining spoils left adjacent to Balm Creek resulted in the designation of a superfund toxic waste site in Balm Creek, which is in progress of cleanup and remediation. The current Baker RMP (BLM 1989) suggested the need to withdraw 185 acres from mineral entry to protect the RNA values. Appendix E of the Baker Proposed RMP/EIS

(BLM 1986) identifies the precise location of these acres; however, no action was initiated to implement withdrawal.

Clover Creek (681 acres): Proper functioning condition evaluations done in 2007 show the riparian area along Clover Creek to be functioning at risk with no apparent trend (BLM PFC monitoring files, 2007). The stream width-to-depth ratio was rated as too high, particularly where the stream was accessible by livestock. The RMP evaluations for existing Clover Creek ACEC concluded that the ACEC/RNA values for which the Clover Creek portion of the Keating ACEC/RNA was designated no longer exist and recommended that this portion of the ACEC/RNA be removed from designation.

Sawmill Creek (446 acres): Based on PFC evaluations done in 2007 (BLM PFC monitoring files, 2007), riparian areas along Sawmill Creek are functioning at risk in a downward trend. Based on drainage size and catchment area, the stream within the ACEC portion of the creek should be perennial; however, due to upstream water right diversions and entrenchment, the system is intermittent in nature.

Balm Creek (1096 acres): Based on PFC evaluations done in 2007, the riparian area of Balm Creek is functioning at risk with no apparent trend. Vegetation along the creek in the ACEC was in good shape, particularly the herbaceous component, and there was sufficient matting along most of the reach; however, head cutting and lateral instability puts all of this vegetation in jeopardy. If not for the lateral and vertical instability, the stream may have been rated as being in an upward trend.

An abandoned mine restoration project has been underway since 2005 to remove and treat heavy metals in tailings from an abandoned mine within the Balm Creek portion of the ACEC, and to prevent the hazardous materials from contact with riparian areas and entering Balm Creek. The concentrations of copper and zinc have killed fish (including sensitive fish species) in the stream. Continued restoration activity in 2006 revealed an additional contaminated site area that requires removal. Approximately 20 acres were restored, while work on an additional 20 acres is waiting for further funding. Long-term restoration of the riparian area is expected after the project completion.

Powder River Canyon ACEC

In the current Baker RMP (BLM 1989), the BLM designated 5,880 acres of public lands in the Powder River Canyon between Thief Valley Reservoir and Highway 203 in the Keating Valley as an ACEC to protect wildlife habitat and cultural resources and to maintain scenic qualities while allowing for compatible recreational uses. The BLM designated the ACEC to protect or improve forage and habitat needs for big game, bald eagles, golden eagles, and other raptors. Current figures show that the Powder River ACEC contains 5,906 acres of public lands.

In 1988, the Powder River was designated as a WSR. Forty-one percent (2,385 acres) of the ACEC fell within the WSR boundaries at the time of designation. Today, 2,416 acres of the

ACEC are part of the National WSR System (NWSRS). The Powder WSR Management Plan (BLM 1994) provides management protection for public lands within the WSR corridor.

The Powder River canyon was assessed for PFC in 2002 (PFC monitoring files, 2002) and the river and adjoining riparian areas were found to be in PFC; however, its tributaries on public lands were found to be functioning at risk with an upward trend. Upstream from the ACEC and the wild and scenic segment of Powder River, Thief Valley Dam affects the river flows and sediment, which limits point bars and sand distribution and has resulted in a high width to depth ratio.

Unity Bald Eagle ACEC

The USFWS identified 360 acres of public lands on the North Fork of Burnt River, a potential bald eagle nest area, to be managed to protect habitat consistent with the ESA and the Pacific States Bald Eagle Management Plan (USFWS 1986). In the current Baker RMP (BLM 1989), the BLM designated 200 acres of this area as an ACEC to protect the bald eagle habitat. The remaining 160 acres are under a BOR project withdrawal for Unity Reservoir and are managed to protect bald eagle habitat. Current figures show that the Unity Reservoir Bald Eagle ACEC designation covers 356 acres (200 acres of public lands and 156 acres of BOR lands).

The USFS completed a bald eagle management plan in 1985 for a nesting pair of bald eagles on USFS lands in the area (USFS 1985). The BLM and USFS prepared an interagency management plan, which suggested the designation of adjacent public lands with potential for bald eagle roost or nesting habitat as an ACEC, as occurred in the Baker RMP (BLM 1989). The management actions directed by the RMP are consistent with direction from the USFS bald eagle management plan.

The BLM collaborated with the USFS on a fuels treatment project (Woodtick Village), which was implemented as a stewardship project for some lands within the ACEC. The project was developed to improve forest health in the area, thus protecting bald eagle habitat in the long term.

Monitoring of bald eagle use of public lands in the ACEC has been intermittent. Surveys completed in 2006 did not indicate that nesting eagles were present in the ACEC. Monitoring of the USFS nest site since 1984 has shown varied nest success.

Hunt Mountain ACEC

In the current Baker RMP (BLM 1989), the BLM designated public lands on Hunt Mountain as an ACEC to protect and maintain habitat for mountain goats and big game, and to protect habitat for sensitive plant species (American Thorow Wax [*Bupleurum americanum*] and Rustic paintbrush [*Castilleja flava var. rustica*]). To meet this goal, management of the ACEC involves continued exclusion of livestock grazing from the area, restricting timber harvest to protect wildlife and sensitive plant habitats, and limiting OHV use to designated roads and trails. The BLM originally designated the Hunt Mountain ACEC as having 2,230 acres; however, after

subsequent analysis, the BLM found that the mapped location of the ACEC included only 1,231 acres. There are ACEC relevant and important values on an additional 1,298 acres that are not currently designated. Additional plant species identified by the State Director's special status species list, the area's unique subalpine habitat, and potential habitat for federally listed salmonids were recently identified as additional relevant and important values contained in the Hunt Mountain ACEC.

The Hunt Mountain ACEC is closed to timber sales, road construction, and grazing. Since designation of the ACEC, no timber sales or fuels treatment were conducted on public lands on Hunt Mountain and no new roads have been authorized. While grazing has not been authorized within the ACEC, some trespassing has been reported.

Oregon Trail ACEC

In the current Baker RMP (BLM 1989), the BLM designated seven parcels of public lands with remnants of the Oregon National Historic Trail as an ACEC to preserve their unique historic resource and visual qualities. A management plan for preservation, public information, and interpretation was prepared in 1989. Details of the management plan components were specified within the Oregon Trail GU management actions and the BLM has made significant progress towards implementing the management actions identified in the plan. The ACEC contains 1,901 acres of public lands. Fencing is in place to exclude livestock grazing at Flagstaff Hill and Echo Meadows.

The BLM established NHOTIC on the Flagstaff hill parcel within the Oregon trail ACEC, which opened in 1992. The center is located at Flagstaff Hill and is operated by the BLM. Nearly two million visitors from all over the world have been to the center since its opening. Details of past and current operations can be obtained directly from the NHOTIC facility. The acres around NHOTIC (508 acres) were withdrawn from mineral entry. The other acreage identified by the 1989 RMP at White Swan and Echo Meadows parcel was not withdrawn.

The Echo Meadows tract has a paved hiking trail, parking area, interpretive kiosk and is fenced. The remaining five parcels have continued to remain intact and protected since the designation, and are periodically monitored to ensure compliance with protection measures.

Sheep Mountain ACEC

In the current Baker RMP (BLM 1989), the BLM designated public lands in the Sheep Mountain area (between Pine Creek and Oxbow Reservoir), including a portion of the Sheep Mountain WSA, as an ACEC to protect outstanding scenic qualities and maintain wildlife and crucial bald eagle winter habitat. Although the ACEC was initially designated at 5,398 acres of public land, current figures show it contains 5,289 acres. The Sheep Mountain WSA encompasses 5,209 of these acres.

The Foster Gulch Fire burned 53,000 acres in 2006, including the entire Sheep Mountain ACEC. To aid in recovery after the fire, grazing was restricted from the area for 3 years. Restoration is proceeding well. All rehabilitation actions have been consistent with interim WSA and ACEC management guidelines. During the year following the burn (2007), severe summer rainstorms caused extreme rilling, erosion, and mudflows. This was widespread throughout the ACEC and was aggravated by the previous year's fire.

Homestead ACEC

In the current Baker RMP (BLM 1989), the BLM designated public lands on the Snake River Breaks near Homestead (between Pine Creek and Nelson Creek) as an ACEC to protect outstanding scenic qualities and wildlife, bald eagle, and sensitive plant habitats. The area is managed to meet forage and habitat requirements for game and non-game species, as recommended by the ODFW. While the ACEC was initially designated at 8,537 acres, current figures show it to contain 8,750 acres of public lands, of which 5,894 acres are within the Homestead WSA. The WSA is closed to OHV use and has been monitored to assure its values are protected.

Most of the streams in the ACEC were dramatically affected by the 1996/1997 floods, with the lower end of the streams showing the remnants from a tremendous flow of rock and gravel. Mid-slope to upper headwaters of these streams show a few slumps at the upper headwaters, but generally show little alteration and are in very good, if not almost pristine, condition. Access to most streams is very limited due to topography, which also limits use by livestock to small areas for watering. There has been historical mining in this area and there are still several active private mining operations in the area. Past mining activities have affected several floodplains, side hills, and upper watershed areas.

Livestock grazing impacts are mostly located on public lands in the Homestead ACEC that are adjacent to private lands due to few existing fences. Impacts from grazing are seen only at the mid-slope pastures. The biggest change in vegetation due to grazing has been the shift from annual grasses to perennials. This positive change will assist in stabilizing the range condition. The forested sites and lower slopes of the ACEC near or below the power lines are in good condition.

Recreational OHV use and hunting have created trails going uphill from Idaho Power powerline roads. There has been extensive OHV use off Hess Road into adjacent meadow areas. Most resource damage has been caused in early spring when the area is wet.

The Foster Gulch Fire burned 53,000 acres in 2006, including the entire Homestead ACEC. To aid in recovery after the fire, grazing was restricted from the area for 3 years. Restoration is proceeding well. All rehabilitation actions have been consistent with interim WSA and ACEC management guidelines. During the year following the fire (2007), severe summer rainstorms caused extreme rilling, erosion, and mudflows onto the BLM campgrounds and the road along

Hells Canyon reservoir. This was widespread within the ACEC and was aggravated by the previous year's fire.

South Fork Walla Walla ACEC

The South Fork of the Walla Walla River Plan Amendment (BLM 1992) designated public lands along the South Fork Walla Walla River between the Umatilla National Forest boundary and Harris County Park as an ACEC. This designation recognized and protected the relevant and important values of fisheries, wildlife, riparian, and scenic values found within the area. The area is also used extensively as a wintering site for ladybugs. Protection through ACEC designation was necessary due to heavy recreational use in the area, which has resulted in sustained impacts to the riparian areas and hillsides. The plan amendment and management plan specified detailed management direction for the ACEC. Land acquisition in 1997 added 766 acres to the ACEC, including over 1 mile of river containing important fisheries, riparian, wildlife, and scenic values. Current figures show that the South Fork Walla Walla ACEC contains 2,040 acres of public land.

Multiple management actions have taken place since the designation of the South Fork Walla Walla ACEC. A significant change was the endangered species listing of the steelhead and bull trout that use this portion of the river for spawning, rearing, and migration. Management of the ACEC has intensified and the river is extensively monitored for water quality, fish redds, sediment, and other qualities. Specific data are available in the BLM annual monitoring reports from 1999 to present. The Confederated Tribes of the Umatilla Indian Reservation re-introduced Chinook salmon in 2004. These fish now utilize the BLM-managed section of the river for spawning, rearing, and migration.

b. Trends

The designation and protection of the ACECs and implementation of many of the management actions have prevented some resource loss; however, there has been infrequent monitoring of ACEC values since their designations, making trends difficult to quantify in most areas. The exceptions are the portions of the Grande Ronde and Powder River ACECs areas that are included within the WSR designations. These areas have remained either static or improved due to the active management by the BLM. The Grande Ronde River has been closely monitored as part of requirements laid forward in the BLM Grande Ronde and Wallowa WSR and Powder River WSR Plans (BLM et al. 1993; BLM 1994). In addition, the BLM annual ESA monitoring plans (1999 -2010) report ESA monitoring for the listed fish species in the rivers. Monitoring results for both these programs show maintenance and improvement to relevant and important criteria due to BLM management efforts.

In Balm Creek RNA, modification has occurred to resource values from the mine rehabilitation project, with approximately 20 acres having been rehabilitated within the ACEC/RNA due to the project. Long-term recovery is expected for these values once the project is complete. Without the project, the toxicity from the mine leaching lead and copper would have further deteriorated

the resources. The withdrawal from mineral entry called for in the current Baker RMP (BLM 1989) has not been pursued by the BLM. The Clover creek ACEC/RNA management actions to limit livestock grazing and protect the riparian area were not implemented, and the relevant and important values for which it was designated have deteriorated.

The RMP called for the development of management plans for each ACEC. Plans were completed for the South Fork Walla Walla, Oregon Trail, Unity Bald Eagle (in cooperation with USFS), Grande Ronde River, and Powder River ACECs. The BLM has implemented the management actions, where possible, for the remainder of the ACECs, but separate ACEC management plans were not completed. Some land acquisitions have supplemented the original acres designated and will assist in the protection of the relevant and important resources.

The demand for resource uses, energy development, grazing, timber resources, and water resources within the designated ACECs will increase over the life of the revised RMP. Recreation use has and will continue to increase. The demand for forest products and livestock use will also increase. These factors will increase demand from the ACECs as well as increase the values they are protecting.

Current management of the designated ACECs is somewhat consistent with management direction in the Current Baker RMP (BLM 1989). Some ACECs have received greater attention than others have. Those that have benefited from management plans and implementation of those actions within the management plans show resource improvement and include Grande Ronde, Powder River, Oregon Trail, and South Fork Walla Walla ACECs. Those ACECs that received less attention may have experienced deteriorated resource conditions and may continue to experience such deterioration unless additional actions are taken. These include Keating and Hunt Mountain ACECs.

Joseph Creek ACEC

Current management seems adequate to protect designated public lands along Joseph Creek. If flight monitoring or other on the ground monitoring (during livestock use period) continues, it would be possible to assess compliance with livestock allotment plans for the inaccessible areas of Joseph creek ACEC. If this does not happen, then conditions for which the ACEC were designated could deteriorate. If livestock congregate in the narrow confines of the Joseph Creek riparian area, important resources could decline. Currently there are no fences to exclude the ACEC lands from adjacent grazed properties (both on private and public lands).

Additional acreage has been acquired near the Joseph Creek ACEC, namely the Colson property, which totals 1,634 acres. It is currently managed without livestock leases but has undergone noxious weed inventory and treatments. It contains similar important resource features as found in the Joseph Creek ACEC, including riparian areas, ESA listed fisheries habitat, and wildlife habitat.

Grande Ronde ACEC

Management since implementation of the current Baker RMP (BLM 1989) has improved conditions for recreation, endangered species, and riparian areas in the Grande Ronde ACEC (see Section B.7, Fisheries, and Section C.5, Recreation, for details); however, funding for this management has declined. Management to protect the ACEC resources requires consistent funding for all programs involved (e.g., fisheries, wildlife, special status species, recreation and cultural resources) to keep resources conditions stable or improving. If management focus in the Grande Ronde ACEC continues at the current level, then resource protection may decline because monitoring and management implementation would not be expected to occur with current funding levels.

Powder River ACEC

Management since implementation of the current Baker RMP (BLM 1989) has improved conditions in Powder River. The remoteness of the area assists in the protection of key resources. The river seems to be at PFC and the tributaries in an upward trend. The primary impact seems to be those resulting from the loss of sediment and point bars due to the operation of Thief Valley Dam. If such losses continue, shoreline sediment, riparian vegetation, and possibly even cultural sites would be disturbed and/or lost. Thief Valley Dam is currently being considered for retrofit to hydropower production. Changes in operation would affect resource values significantly within the ACEC. The implementation of the revised conditions established in the Range Permit Renewal is also essential to the protection of the ACEC values. Wind turbines and powerlines proposed immediately adjacent to the ACEC could potentially affect the visual resources, as well as sage-grouse and other wildlife habitats that are important to the relevant and important values.

Keating ACEC/RNA

Since completion of the current Baker RMP (BLM 1989), the BLM has not implemented all management actions intended to protect the relevant and important values of the three Keating RNA units. While the BLM fenced and maintained the Balm Creek RNA portion of the ACEC, due to gates on both ends and the remnants of a stream bottom road, the gates were frequently left open, which allowed livestock to access the riparian area. The fence was then breached on the north end of the exclosure when the mine restoration project began and has remained open to livestock use for the past two years. Approximately 20 acres have been modified as part of the mine reclamation project and are expected to recover over the long term. Fencing of the rehabilitated sites and other actions have been planned to allow for recovery. The remaining units of the Keating ACEC (Sawmill Creek and Clover Creek RNAs) have continued to be grazed and evaluations indicate declining conditions. If current management for these areas continues, the relevant and important values for which the ACEC/RNA segments were designated could be compromised. The BLM ID team now believes that the Clover Creek RNA segment no longer meets the relevant and importance criteria.

Unity Bald Eagle ACEC

Since completion of the current Baker RMP (BLM 1989), the BLM has not implemented all management actions intended to protect the relevant and important values of Unity Bald Eagle ACEC. Occasional visits to determine use by Bald Eagles have shown infrequent use, but no known nesting. Nesting continues to occur on adjacent USFS land and, therefore, the protection of this site is still appropriate for long-term potential use by bald eagles. Bald Eagles have been de-listed from the ESA, but continue to be protected by the Bald and Golden Eagle Protection Act and the BLM Special Status Species program. The Unity Bald Eagle Management Plan (USFS 1985) includes BLM recommendations and is signed by the BLM. The Woodtick Village fuels treatment project was implemented and BLM and USFS insured consistency with the Bald Eagle Management Plan. If management continues to protect the ACEC as designed, bald eagle use may occur and contribute to the recovery of the birds.

Hunt Mountain ACEC

The BLM has not implemented management actions identified in the current Baker RMP (BLM 1989) intended to protect resource values in the ACEC. While access to the ACEC is limited, botanists both within and outside of the BLM have collected some resource information, which includes reports of livestock trespassing within the ACEC. Monitoring of the ACEC has also been infrequent. If such trends continue, current management could lead to loss of resources for which the ACEC was designated, or could result in no change. The BLM does not know if the current ACEC boundary includes the majority of the special status plant occurrences on Hunt Mountain. However, based on inventories, the BLM does know that part of the occurrences for both *Bupleurum americanum* and *Castilleja flava var. rustica* occur on public lands but not within the current boundaries of the ACEC.

While the current Baker RMP (BLM 1989) identified Hunt Mountain ACEC as encompassing 2,230 acres of public lands, the location that was mapped in the RMP only encompassed 1,231 aces. As a result, there are ACEC relevant and important values on an additional 1,298 acres that are not currently designated, and which are exposed to adverse effects from forest treatment, road construction, and mineral development. In addition, plant species within the ACEC that were recently added to the special status species list, the area's unique subalpine habitat, and potential habitat for federally listed salmonids have been recently identified as relevant and important values contained in the Hunt Mountain ACEC.

Oregon Trail ACEC

The BLM has made great progress towards management protection of the Oregon Trail ACEC since designation. The Oregon National Historic Trail Management Plan (BLM 1989) has facilitated actions consistent with protection of the relevant and important values. While some follow up and monitoring is needed, current management should continue to adequately protect the ACEC's designated values.

Sheep Mountain and Homestead ACECs

The issues affecting the trend for Sheep Mountain and Homestead ACECs are basically the same. Management actions implemented for both ACECs under the current Baker RMP (BLM 1989) are very limited. This is partially due to large percentages of both ACECs being included within the boundaries of two WSAs, which provides extensive protection for resource values in those sections that have overlapping ACEC/WSA designations. Resources outside the WSA boundaries also seem to be receiving adequate protection. Because both ACECs were burned by the 2006 Foster Gulch Fire, the BLM implemented a period of 2 to 5 years of rest from grazing until vegetation resources are restored. Overall, current management of Sheep Mountain and Homestead ACECs should adequately protect the resource values for which these ACECs were designated.

South Fork Walla Walla ACEC

The resource values within the South Fork Walla Walla ACEC have been adequately protected since the ACEC was designation. Most management actions identified in the South Fork Walla Walla River Area Plan Amendment (BLM 1992) have been implemented, monitored, and revised as needed. New resource values (i.e., ESA listed fish species and tribal re-introduced fish species) have been appropriately incorporated into the resource protection plan and management within the area. Overall, the resource values in the ACEC should continue to be maintained or improved.

2. WILD AND SCENIC RIVERS

a. Current Conditions

In 1968, Congress enacted the National WSR Act, which established a system for preserving outstanding free-flowing rivers. The Omnibus Oregon WSR Act of 1988 amended the 1968 Act and designated the Grande Ronde River in Oregon from Rondowa downstream to the Washington/Oregon state line and the Powder River between Thief Valley Reservoir and Highway 203 as components of the NWSRS. In addition, the Wallowa River from Minam downstream to its confluence with the Grande Ronde River was identified as a study river. After an eligibility and suitability study of the Wallowa River by the USFS, it was also included into the NWSRS on July 23, 1996.

Table 3-58 summarizes the three WSRs that flow though public lands in the Decision Area, while Map 2-7 in Chapter 2 shows their location.

Table 3-58. Designated WSRs in the Decision Area

River	Outstanding Remarkable Values	Administering Agency	Wild	Scenic	Recreational	Total miles
Grande Ronde River	Scenic, Recreation, Wildlife, Fisheries	BLM	9.0	--	15.9	24.9
		USFS	17.4	--	1.5	18.9
Powder River	Scenic, Recreation,	BLM	--	11.7	--	11.7

Table 3-58. Designated WSRs in the Decision Area

River	Outstanding Remarkable Values	Administering Agency	Wild	Scenic	Recreational	Total miles
	Fisheries, Wildlife, Pre-Historic Cultural					
Wallowa River	Scenic, Recreation, Fisheries, Wildlife	State of Oregon and BLM	--	--	10	10

Grande Ronde River

The Grande Ronde River was designated as a WSR from its confluence with the Wallowa River to the Oregon-Washington border on October 28, 1988, and is managed under the direction of the Wallowa & Grande Ronde Rivers Final Management Plan for the protection of the outstandingly remarkable values for which the river was designated (see BLM 1992; BLM 1994; and BLM et al. 1993). In addition, cooperative management agreements have also been implemented among many of the private landowners and agencies that have management responsibilities within the Grande Ronde River corridor. These agreements include private landowners, ODFW, WDFW, USFS, OPRD and Idaho BLM (Cottonwood Resource Area). This section of the river offers outstanding scenery, rafting, salmon and steelhead fishing, hunting, and wildlife viewing.

Hunting is popular in this section of the Grande Ronde River. Mule deer, elk, black bear, cougar, and bighorn are principal big game animals inhabiting the river corridor. Fishing is excellent late in the season after the water levels have receded. Hiking alongside creeks and ridges offer limited day hikes, but there are no designated trails along the river.

Many Native American Tribes lived in the reaches of the Grande Ronde. Evidence of the cultural history can be glimpsed in the form of historic and prehistoric places and objects on the public lands. These cultural resource sites are fragile and irreplaceable, and are protected by the law.

Powder River

The Powder River was designated as a WSR from Thief Valley Dam to the Highway 203 Bridge on October 28, 1988, and is managed under the direction of the Powder River Final Management Plan (BLM 1992; BLM 1994; BLM et al. 1993). This 12-mile stretch of river flows through a rugged canyon with geologic formations of spectacular beauty. Although access is limited, the river offers outstanding fishing and hunting opportunities. Rafting is rare due to access issues and limited river flows, but can occur in the early spring.

Wallowa River

The Wallowa River was designated as a WSR from the confluence of the Wallowa and Minam rivers downstream to the confluence of the Wallowa and the Grande Ronde rivers on July 23, 1996 and is managed under the Wallowa & Grande Ronde Rivers Final Management Plan (BLM 1992; BLM 1994; BLM et al. 1993). The segment of the Wallowa River is the gateway to the

Grande Ronde WSR. Cooperative management agreements have also been implemented for management of the Wallowa River between private landowners, ODFW, USFS, and OPRD. The Wallowa offers fishing, hunting, wildlife viewing, and rafting, as well as a state park for camping and a county tour train. Steelhead fishing, in particular, is excellent in the late winter/early spring season. The primary launch site for the Wallowa and Grande Ronde river corridors, as well as the BLM public contact station, are located on state lands at Minam, Oregon.

The Wallowa joined Joseph Creek and the Minam, Lostine, Wenaha, and the Grande Ronde rivers as designated WSRs within the Grande Ronde Basin. Only the Klamath and Smith River systems in California and the Deschutes in Oregon are comparable in protection of a complete river system.

Wild and Scenic River Eligibility Review

Members of a BLM ID Team, consisting of resource specialists from the Baker FO, met on June 22, 2005 to review Decision Area-wide maps of all of perennial, ephemeral, and intermittent waterways within the Planning Area to provide a preliminary list of rivers or streams for a WSR inventory. Existing designated WSRs were not re-evaluated. The ID Team were given the opportunity to review the maps for several weeks in late June through mid-July of 2005 and to identify any streams that their experience/knowledge indicated possessed "unique, rare, or exemplary" values. The ID Team met again on July 21, 2005 to review their findings and to finalize the list of waterways that potentially possessed outstandingly remarkable values. Out of waterways reviewed, the ID Team identified eight waterways totaling approximately 43.7 miles that had potential to possess outstandingly remarkable values and, thus required further review. These waterways include two sections of the Grande Ronde River (upper and lower), Burnt River, Snake River, South Fork Walla Walla River, Conner Creek, Fox Creek, and Joseph Creek. The remaining waterways were dropped from further consideration due to lacking the potential to possess outstandingly remarkable values.

The eight waterways (five rivers and three creeks) suspected to possess outstandingly remarkable values were contracted out for further review. The locations of these waterways are presented in Appendix 3.9. Each of these waterways was visited to document their free-flowing nature and to identify existing outstandingly remarkable values, where possible. Data were only gathered on the waterway segments that cross public lands: no private, state, or other federal lands were reviewed. Fieldwork was conducted between April 30 and June 4, 2006. Digital photos were taken and Global Positioning System referenced as part of the documentation process. Existing pertinent data from state, federal, and local sources were also reviewed to substantiate or refute the existence of outstandingly remarkable values. Finally, BLM staff at the Baker FO was consulted for their expertise on specific river-related values along the eight studied waterways.

Four of the eight waterways with potential to possess outstandingly remarkable values (Burnt River, Connor Creek, Fox Creek, and upper Grande Ronde) were found not to meet the WSR eligibility criteria and dropped from further consideration. The South Fork Walla Walla River was initially determined to possess outstandingly remarkable values by this study, but was later

dropped due to the reasons described below. Three remaining waterways (Joseph Creek, lower Grande Ronde River, and Snake River) were identified as possessing outstandingly remarkable values and were determined to be eligible. Table 3-59 summarizes these findings.

Table 3-59. Summary of the Baker RMP Planning Area WSR Eligibility Review

River/Stream (Waterway) Reviewed	Free-flowing?	Outstandingly Remarkable Values on Public Lands	BLM Lands Eligible?	Interim Management
South Fork Walla Walla River	Yes	None	No	N/A
Grande Ronde River (Upper Section)	Yes	None	No	N/A
Grande Ronde River (Lower Section)	***Yes***	***Scenic Recreational Fish Geologic Cultural***	***Yes***	***Wallowa and Grande Ronde Rivers Final Management Plan***
Snake River	***Yes***	***Cultural***	***Yes***	***Wallowa and Grande Ronde Rivers Final Management Plan***
Joseph Creek	***Yes***	***Scenic Geologic***	***Yes***	***Joseph Creek ACEC/ONA management prescriptions***
Fox Creek	Yes	None	No	N/A
Connor Creek (Segment 1)	No	None	No	N/A
Connor Creek (Segments 2 & 3)	Yes	None	No	N/A
Burnt River	Yes	None	No	N/A

The South Fork Walla Walla River was initially identified as possessing outstandingly remarkable scenic, recreational, fish, and ecological values during the inventory process; however, subsequent consultation with the USFS led to dropping its eligibility determination. The USFS (Umatilla National Forest) manages a 15.7-mile segment of the South Fork Walla Walla River directly above the 3.6-mile segment evaluated in BLM's WSR review. The USFS segment ranges from the headwaters near Deduct Spring to the Umatilla National Forest and the BLM boundary. The USFS had conducted an earlier WSR eligibility review of the South Fork Walla Walla River and determined that it did not possess outstandingly remarkable values. Because the USFS manages a much longer stretch of the South Fork of the Walla Walla River, the BLM has made a decision to defer the final resource assessment of the entire river to the USFS. The initial WSR eligibility determination made in the BLM WSR review for the South Fork Walla Walla River and the USFS determination that is being accepted are presented in Appendix 3.9.

b. Trends

Current management plans developed in the early 1990s for the designated WSRs in the Decision Area continue to be effective at maintaining, enhancing, and protecting the values for which the rivers were designated. Unless specifically identified in the RMP, the actions of these management plans will continue to be used for the future management of these rivers.

In addition to the three designated WSRs, an eligibility/suitability review of other rivers and streams located within the Decision Area has been completed. As part of the RMP planning effort, the BLM ID Team initiated a WSR inventory of all rivers and streams (perennial, annual, or ephemeral) that flowed through public lands within the Decision Area to determine if any of these waterways meet the WSR eligibility criteria as identified in the WSR Act of 1968, as amended. This eligibility review found that three rivers (the Washington section of the Grande Ronde River, Snake River, and Joseph Creek) were determined to be "eligible" rivers under the requirements of the WSR Act. Unless otherwise prescribed by statute (e.g., Section 5(a) of the WSR Act), all eligible river segments are evaluated for suitability using the BLM RMP process. Until the final determination of "suitability" for the identified "eligible" river and streams, the interim protection measures identified for each waterway will be implemented to protect their Outstandingly Remarkable Values. The public will be given the opportunity to comment on the WSR eligibility/suitability results during the normal scoping process and throughout the environmental analysis and planning process for the RMP planning effort. Concerns voiced by the public will be included in deciding if those waterways determined suitable should be recommended to Congress for inclusion into the NWSRS.

3. WILDERNESS STUDY AREAS

a. Current Conditions

There are currently three WSAs containing public lands within the Decision Area. A WSA is a roadless area that has been inventoried by an agency (but not designated by Congress) and found to possess wilderness characteristics of naturalness and outstanding opportunities for solitude or unconfined primitive recreation as described in section 2(c) of the Wilderness Act of 1964. Interim management policy and guidelines (IMP–BLM, H-8550-1) manage BLM WSAs to protect their values as wilderness until Congress either designates the areas as wilderness or releases them for management of other values and uses. Activities that would impair wilderness suitability are prohibited, subject to valid existing rights and grandfathered uses. These WSAs are identified in Table 3-60 and illustrated on Map 2-7. They all exist along the Snake River Canyon above Oxbow and Hells Canyon reservoirs. The large blocks of public lands associated with these WSAs is somewhat rare within the Decision Area and are sought out by recreational users for hunting, horseback riding, hiking, and some primitive camping. Except for a short "cherry stem" primitive road found in the Sheep Mountain WSA, the areas are closed to motorized use; however, the "cherry stem" primitive road into Sheep Mountain WSA is currently unavailable for public use due to locked gates on private lands that control access.

Table 3-60. Existing WSAs in the Decision Area

Name	BLM Acres	USFS Acres	Total Acres
McGraw Creek WSA	497	--	497
Homestead WSA	7,001	7,654	14,655
Sheep Mountain WSA	7,040	--	7,040

McGraw Creek WSA

McGraw Creek WSA is located 80 miles northeast of Baker City and 23 miles northeast of Halfway in Wallowa County, Oregon. The WSA consists of 497 acres of public lands. It is approximately 2.5 miles in length and varies from 50 feet to 0.75 mile in width. There are no private in-holdings and the subsurface mineral estate is federally owned. Hells Canyon Reservoir on the Snake River forms the WSAs eastern boundary, Hells Canyon Wilderness forms the northern boundary, and private land (patented mining claims) and other public lands border the WSA to the south and west.

Very steep, deeply dissected, narrow, rocky canyons characterize McGraw Creek WSA. The elevation of the WSA increases from 1,600 feet at the reservoir to 4,960 feet at the WSA's western boundary. The northern forks of Copper Creek are the only perennial streams. There are no roads or trails in the WSA; however, a trail for non-motorized use runs north along the reservoir along the eastern boundary. Forest plant communities (e.g., Douglas, white and grand fir, and ponderosa pine) are found on the higher elevations and north-facing slopes in the WSA and along the upper portion of Copper Creek, which also supports dense, deciduous riparian vegetation in a mature to climax ecological stage. Rangeland plant communities are found on lower elevations and drier slopes and consist primarily of grasses and scattered shrubs.

Homestead WSA

The Homestead WSA is located on the west side of the Snake River adjacent to State Highway 86, approximately 75 miles northeast of Baker City and 20 miles northeast of Halfway. The WSA contains 7,001 acres of public lands and 7,654 acres of USFS lands for a total of 14,655 acres.

The WSA is almost 10 miles long, 5 miles wide at its widest point, and 400 yards wide at its narrowest point, with its average width being 2 miles across. Private land and power site withdrawals border the WSA on the east and south, USFS land on the west, and a 500 kV power line on the north. Two dead-end roads (each 1 mile in length) enter the WSA along the southwest boundary.

Homestead WSA is on a north-south oriented hogback ridge with very short and steep drainages (0.5 to 2.5 miles) running east to west through rugged canyons. Most of the area lies on the east-facing slope that fronts Hells Canyon Reservoir. McClain Gulch, the WSA's major drainage, occurs on USFS lands, running 3 miles in a southerly direction. Vegetation is diverse and includes a mixture of grasses (e.g., bunchgrass cheatgrass, and wheatgrass), shrubs/plants (e.g., big sagebrush, elderberry, hawthorn, poison ivy, and snowberry), and trees (e.g., Douglas-fir, white fir, and ponderosa pine). The trees consist predominately of old-growth groves that are found on the moist, flatter areas of the WSA's steep draws.

Sheep Mountain WSA

Sheep Mountain WSA is located along State Highway 86, 65 miles northeast of Baker City and 15 miles east of Halfway in Baker County, Oregon. The community of Copperfield is 1.5 miles north of the WSA. This WSA contains 7,040 acres of public land and encloses two parcels of private land (totaling 200 acres) in the north-central portion of the WSA. The entire WSA has been designated as an ACEC due to its outstanding scenic qualities, wildlife, and bald eagle habitat.

The WSA is 6 miles from north to south at its longest point, 3 miles wide at its southern boundary, and tapers to 0.25 miles wide on the north. Private land surrounds much of the WSA, with public land bordering the southeastern side for 2.5 miles. A primitive road traverses this ridge top to the border of the WSA, and then proceeds for approximately 0.3 miles north into the WSA. This "cherry stem" road then converts into a non-motorized trail that leads into the middle of the WSA.

Sheep Mountain dominates the WSA, towering 3,230 feet above the Snake River. Pine Creek drainage, forming a dramatic vertical ascent, borders the WSA on the west and northwest. Extremely steep slopes are found to the west, north, and east, while a ridgetop forms a more rolling landscape in the southeast corner of the WSA. Several seasonal creeks drain all sides of Sheep Mountain. Black Canyon Creek, the only perennial stream in the WSA, is a deeply incised drainage flowing north to south through the southern half of the area. A flat bench surrounds the headwaters of Black Canyon Creek creating a high 1,200-acre plateau. Several basalt pinnacles are evident on the northwest exposure of Sheep Mountain. Basalt terraces are found on the north and east slopes of the mountain.

The plant community on the flat bench area on top of Sheep Mountain is composed primarily of big sagebrush, squaw currant, snowberry, buckwheat, and blue bunch wheatgrass. Grassy slopes consisting of Idaho fescue and blue bunch wheatgrass are found on the south and west aspects adjacent to the flat. The timber in the WSA is predominately old growth, with 142 acres dominated by ponderosa pine and 81 acres dominated by Douglas-fir. These trees are found on the moist, flatter areas of the steep draws and are considered economically non-operable for harvest, thereby being excluded from the Decision Area's allowable cut base. A fire in 2006 removed most of the large trees in the WSA.

b. Trends

The three WSAs in the Decision Area are currently stable but at risk. Increases in recreational motorized use and the improved technology and capabilities of motorized equipment have coincided with increased evidence of encroachment into the WSAs by both over-land and over-snow vehicles. Additional information and educational efforts have been aimed at informing the public of the limitations or bans of motorized use in the WSAs.

The future of the WSAs within the Decision Area is unknown. Only Congress can designate WSAs as wilderness, or release them from further wilderness consideration. Until that time, BLM's interim management policy for WSAs will continue to guide management of the Decision Area's three WSAs. The possibility that these areas may be designated as wilderness will continue to be recognized in all affected land and resource use decisions.

E. SOCIAL AND ECONOMIC CONDITIONS

1. SOCIOECONOMICS

a. Current Conditions and Trends

The Baker Planning Area covers parts of Baker, Union, Wallowa, Malheur, Morrow, and Umatilla Counties in Oregon and Asotin County in Washington. In addition, the Planning Area includes the Confederated Tribes of the Umatilla Indian Reservation. The "analysis area" for socioeconomic encompasses these areas, with the exception of Malheur County due to its limited number of acres within the Planning Area.

Demography

Population change in the Planning Area was relatively stable between 1970 and 2005. Over this period, population growth in Baker, Union, and Wallowa Counties increased by 7, 27, and 11 percent, respectively, which was outpaced by both the state of Oregon (73 percent) and the nation (45 percent). The population of Umatilla and Asotin Counties outpaced the nation but not the state (increasing by 64 and 58 percent, respectively), while Morrow County outpaced both the state and the nation (increasing by 162 percent). Figure 3-4 illustrates the county level changes in population and projections through 2030.

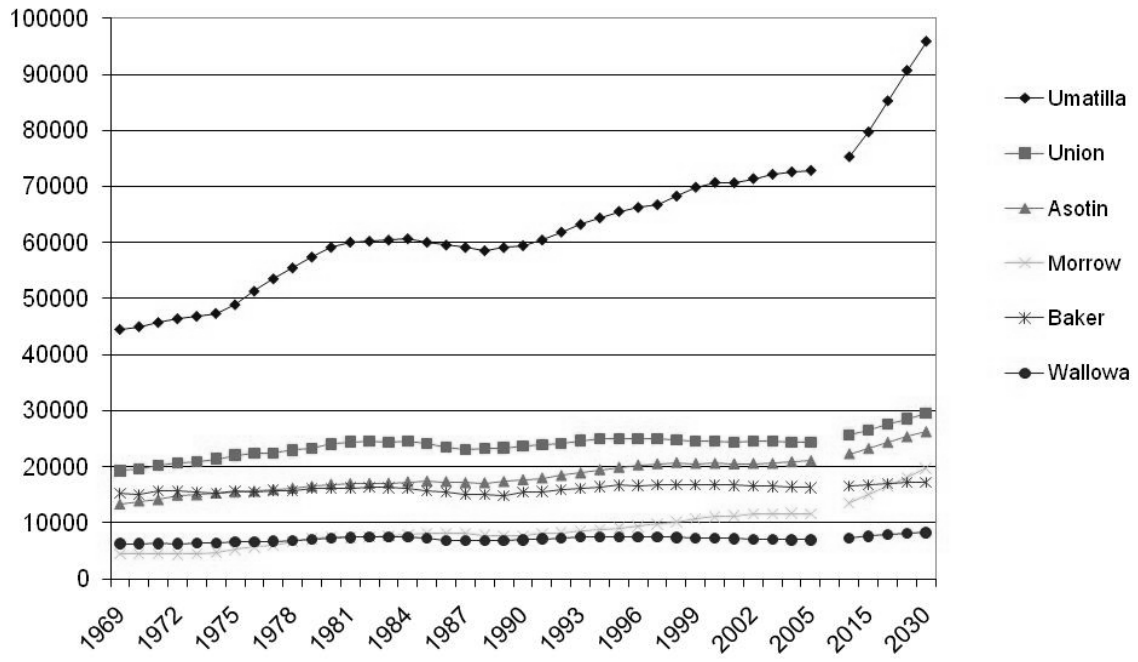


Figure 3-4. Actual and projected population change for counties within the analysis area (Source: Bureau of Economic Analysis [BEA] 2005; Portland State University 2004; State of Washington 2007)

Population projections suggest all counties in the Planning Area will continue to remain stable or increase over the next 20 to 25 years. Between 2005 and 2030, Umatilla County is projected to increase the most (23,001 persons) while Morrow County will have the greatest increase as a share of its total population (70 percent). Baker County will increase the least in absolute terms (966 persons) and as a share of its population (6 percent). These projections reflect regional trends of minimal population growth except in Umatilla County, which is steadily urbanizing (James, Kent, and Associates [JKA] 2006).

The population densities of all Planning Area counties are less dense than their respective states. In 2005, Oregon and Washington contained 38 and 95 persons per square mile, respectively. Asotin had the highest population density of all analysis area counties in 2005 at 33 persons per square mile, followed by Umatilla at 22 persons per square mile and Union at 12 persons per square mile. The remaining counties were significantly less dense at 6, 5, and 2 persons per square mile for Morrow, Baker, and Wallowa Counties, respectively (BEA 2005a).

The BEA estimates the flow of annual earnings of in-commuters and out-commuters for a given county. Commuting data shows Baker, Morrow, and Asotin counties received more income from people commuting out of the county in which they live. In this manner, they can be thought of as “bedroom communities” since income from people commuting out of the counties to work exceeds the income from those commuting into the counties (BEA 2005a). The small difference

in income sources for Union and Wallowa Counties suggests income generated by those commuting out is similar to income earned by those who live and work in these counties and, therefore, commuting may be less a part of the day-to-day lives of the residents of these counties. Umatilla County can be described as an "employment hub" since income derived from people commuting into the county to work exceeds the income from those commuting out of the county. While these trends are true for earnings from all industries, they may vary for specific industries within counties and may mischaracterize actual commuting patterns for certain industries where commuting patterns cannot be characterized by earnings data. For example, the JKA report noted that many of the loggers who live in Wallowa County drive to Union County for work (JKA 2006).

Within the Planning Area, the share of total population of all non-white races and Hispanics increased between 1990 and 2000. Race and Ethnicity are separated since Hispanics can be of any race. At the county level, decreases were seen for several non-white races (Table 3-61). American Indian populations decreased in Baker, Union, and Wallowa Counties. African American, Asian, and Pacific Islander populations experienced decreases over this period in Asotin, Wallowa, and Morrow counties. The share of the total population of Hispanic origin increased in all counties except Wallowa County. The increases in the Hispanic population accounted for 55 percent of the total population change in Morrow and Umatilla counties over this period.

Table 3-61. Racial and Hispanic Composition of 2000 Population and the Change Since 1990

	White	African American	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Some other race	Hispanic
Oregon	87%	1.6%	1.3%	3.0%	0.2%	4.2%	8.0%
Baker County	96%	0.3%	0.7%	0.5%	0.1%	0.7%	1.9%
Change from 1990	996	16	-7	36	9	81	44
Morrow County	75%	0.2%	1.7%	0.5%	0.0%	20.2%	24.4%
Change from 1990	1439	10	91	31	-5	1525	1,841
Umatilla County	82%	1.0%	3.2%	0.7%	0.1%	10.9%	16.1%
Change from 1990	5144	353	274	76	1	3941	6193
Union County	94%	0.5%	0.6%	0.9%	0.6%	1.5%	2.3%
Change from 1990	313	23	-104	36	40	250	211
Wallowa County	98%	0.0%	0.4%	0.0%	0.1%	0.2%	0.7%
Change from 1990	225	0	-7	-20	1	6	-52
Washington	82%	3.2%	1.6%	5.5%	0.4%	3.9%	7.5%
Asotin County	96%	0.1%	0.9%	0.5%	0.01%	0.6%	1.8%
Change from 1990	2405	-31	-20	52	6	56	99

Source: U.S. Census 1990 and U.S. Census 2000

Economic Specialization and Employment

Employment within the analysis area is distributed amongst industry sectors and displayed in Figure 3-5. Communities that were specialized with respect to employment were identified by ICBEMP. Their method used a ratio of the percent of employment in each industry in the region

of interest (i.e., counties within the analysis area) to an average percent of employment in that industry for a larger area (the reference region; BEA's Economic Areas). For a given industry, when the percent employment in the analysis region is greater than in the reference region, local employment specialization exists in that industry (USFS 1998). Using this criterion applied to 2006 data, Baker, Morrow, and Wallowa Counties can be characterized as specialized with respect to the natural resource related sectors while Asotin, Baker, Union, and Wallowa Counties are specialized with respect to sectors related to natural amenities. Over time, economic specialization has changed. The degree of change is reflected in Figure 3-5 where total employment in the six-county area is disaggregated into six industry sectors (BEA 2000).

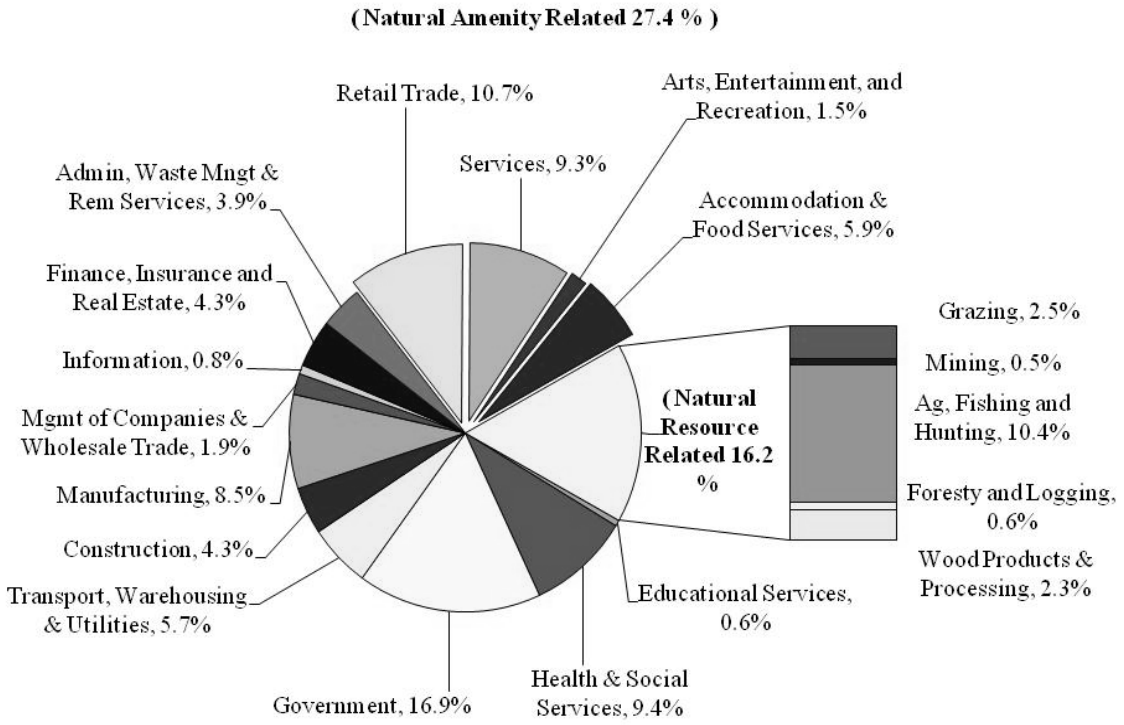


Figure 3-5. Analysis area industry employment distribution, 2006 (Source: IMPLAN 2006)

From 1970 to 2005, total employment in the analysis area increased by 88.6 percent (from 43,851 to 82,697 jobs classified as full and part-time employment). The state of Oregon saw an increase in total employment of 141 percent, or roughly 4 percent annually, over this period and the state of Washington increased by 150 percent, or about 4.2 percent annually. Job growth between 1970 and 2005 in Asotin County outpaced the state and the nation. Morrow and Umatilla counties saw job growth over this period that outpaced the nation but not the state. Baker, Union, and Wallowa Counties experienced job growth that was slower than both the state and the nation. The employment growth seen in all analysis area counties combined (Figure 3-6[8]) was largely due to estimated increases between 1977 and 2000 in service and professional

[8] The numbers in Figure 3-6 are not directly comparable to the IMPLAN numbers in Figure 3-5 since IMPLAN data include farm and proprietor employment in addition to wage and salary employment. Similarly, the IMPLAN data

sector employment (includes retail trade, health and social services and the combined services sector mentioned above), which accounted for approximately 68 percent of new area employment. In addition, the share of total employment attributable to this sector increased by 6.1 percent, from 47.2 to 53.3 percent. Thus, the service and professional related sectors have been an important part of area employment. Jobs in the government sector slightly increased in their share of total employment (by 0.7), indicating a steady economic specialization in the government sector in the analysis area.

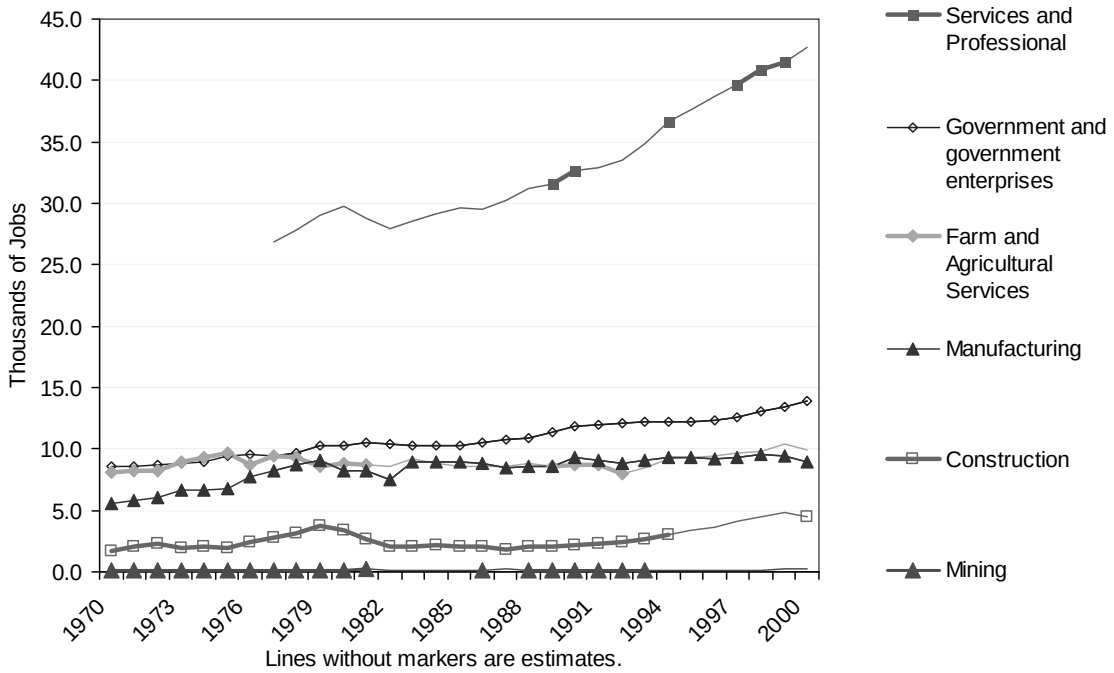


Figure 3-6. Employment history of the analysis area (BEA 2000; estimates from Economic Profile System 2007)

Slight increases in the farm and agricultural services, mining, and manufacturing sectors did not keep pace with other sectors and translated into smaller portions of total employment in 2000, decreasing by 4.2, 0.1, and 3.3 percent, respectively. These natural resource related sectors have provided a small and slightly decreasing portion of total area employment, while the service and professional sector has maintained a steady increase.

Economic Well-being and Poverty

As noted above, the service and professional sectors increased in their share of total employment while the farm and agriculture services, mining, and manufacturing sectors experienced decreases between 1977 and 2000. The service and professional sector jobs, however, may not

also include estimates for non-disclosures that similarly include farm and proprietor employment in addition to wage and salary employment.

pay as much, which could decrease area economic well-being. Within the analysis area, the private sectors examined can be lumped into goods-producing sectors (e.g., natural resources, construction, and manufacturing) and service-providing sectors (e.g., trade, transportation, utilities, finance, education, and health). In 2005, the goods-producing and service-providing sectors paid average annual wages of $29,848 and $25,484, respectively (Bureau of Labor Statistics 2005). From these statistics, it is apparent that while the service sector accounts for an increasing share of total employment, these jobs do not pay as much. The welfare implications of these changes are not so clear. The population change in counties noted above suggests some people may be moving away instead of taking lower paying jobs in the service sector. Other people might move to the area to take a service sector job, but are willing to accept the lower wage that they may receive in exchange for the unique natural and cultural amenities. In this manner, some may benefit from a "secondary income" not provided by their place of employment but, rather, by the benefits they gain from living in the area. For example, in its description of the Hells Canyon Area, the JKA report noted, "people understand that they often do with less financially in order to live here, so the element of choice seems to bring energy to the community" (JKA 2006).

Total personal income (TPI) and per capita personal income (PCPI) are useful measures of economic well-being. From 1970 to 2005, annual TPI in the economic analysis area increased by $2.04 billion to $3.98 billion, and annual PCPI increased from $18,575 to $25,968 (all measures adjusted for inflation to 2005 dollars). This translates to a TPI increase of 51 percent (roughly 1.5 percent annually) and a PCPI increase of 40 percent (roughly 1 percent annually) over this period. In 2005, the average PCPI in the economic analysis area was lower than the state of Oregon ($34,310) and the nation ($34,471), which can be explained by differences in the cost of living in metropolitan areas versus the predominantly non-metropolitan area of this economic analysis. Differences in non-metropolitan and combined metropolitan/non-metropolitan PCPI levels for Oregon and the nation explain the lower levels seen in the economic analysis area (non-metropolitan income for the state was $25,586 and for the nation was $26,115 in 2005; while metropolitan/non-metropolitan combined was $34,310 for the state and $34,471 the nation; Bureau of Labor Statistics 2005).

While PCPI is a useful measure of economic well-being, it should be examined alongside changes in real earnings per job. Since PCPI includes income from 401(k) plans, as well as other non-labor income sources like transfer payments, dividends, and rent, it is possible for per capita income to rise, even if the average wage per job declines over time. While PCPI rose between 1970 and 2005, average earnings per job fell from $32,593 to $31,951 (values adjusted for inflation to 2005 dollars), indicating a possible decrease in area economic well-being (BEA 2005b).

From 1992 to 2000, average annual unemployment rates in the six county analysis area fell along with national and state levels, except for a noticeable increase to 7.7 in 1996. Unemployment after 1996 followed state and national trends through 2006 (Figure 3-7). Baker, Morrow, and Wallowa Counties are at their lowest levels of unemployment since 1990, but remain above state

and national levels of 5.4 percent and 4.6 percent, respectively. Umatilla and Union counties' 2006 unemployment levels (6.8 and 6 percent, respectively) were close to their 16-year lows of 6.2 and 5.4 seen in 2000; however, the unemployment levels have remained above state and national levels. Asotin County's unemployment level of 4.8 percent was the lowest of all analysis area counties, and was lower than the state of Washington's unemployment level of 5 percent and the nation's 4.6 percent level (Bureau of Labor Statistics 2006).

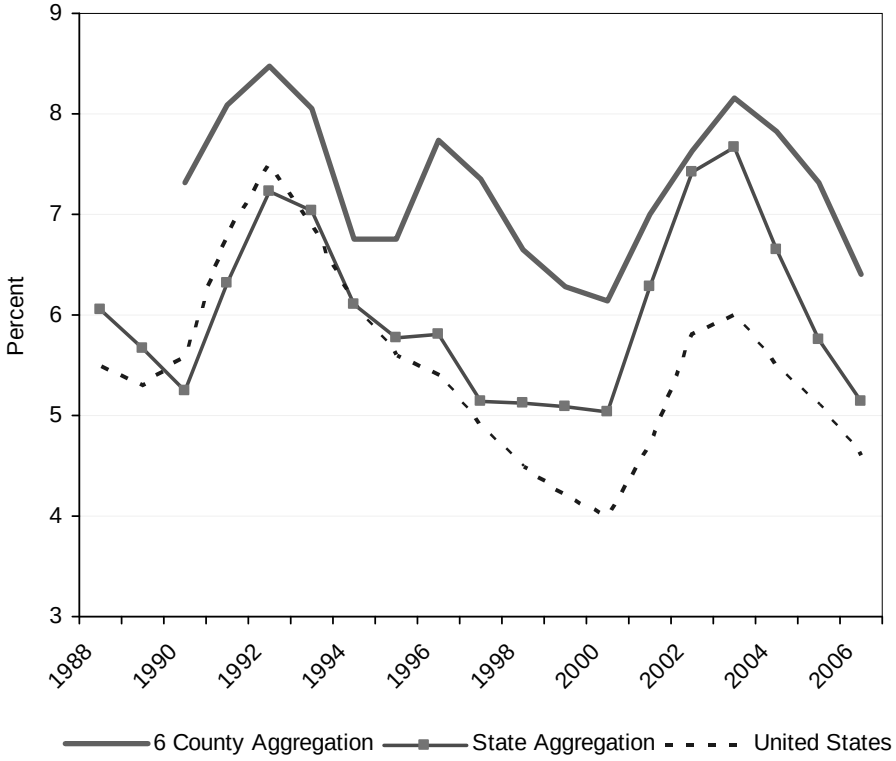


Figure 3-7. Average annual unemployment rates of six-county economic analysis area

While the number of people living below the poverty level in Baker and Morrow counties increased between 1989 and 1999, the share of those living below the poverty level remained stable in Baker County, and decreased in Morrow County (Table 3-62). In all other counties, the number and share of persons living below the poverty level decreased over this period. The largest decreases occurred in Asotin and Umatilla counties where the levels both fell by 3.9 percent. These declines in the share of individuals living below the poverty level were greater than reductions at their respective state's levels over this period. However, all three counties maintained levels of poverty greater than the state in 1999 (U.S. Census Bureau 2000).

Table 3-62. Share of Population Living Below Poverty Level and Change Between 1989 and 1999				
	1999	1989	net change	change in share
Planning Area	14%	16%	-822	-2.7%
Oregon	12%	12%	43873	-0.8%
Baker, OR	15%	15%	218	0.01%
Morrow, OR	15%	15%	476	-0.3%
Umatilla, OR	13%	17%	-895	-3.9%
Union, OR	14%	16%	-346	-2.0%
Wallowa, OR	14%	16%	-76	-1.8%
Washington	11%	11%	94437	-0.3%
Asotin, WA	15%	19%	-199	-3.9%
Source: U.S. Census Bureau 2000				

Components of Personal Income

Further examining trends within personal income data provides insight to the area economy and its connection to the lands administered by the BLM. There are three major sources of personal income: (1) labor earnings or income from the workplace; (2) investment income, or income received by individuals in the form of rent, dividends, or interest earnings; and (3) transfer payment income or income received as Social Security, retirement, and disability income or Medicare and Medicaid payments.

Labor earnings were the largest source of income in the analysis area, accounting for 61 percent of all income in 2005. In Oregon and Washington, labor earnings also made up 67 and 70 percent of TPI, respectively. The government and manufacturing sectors were the largest components of labor income in 2006 for the economic analysis area (below). It should be noted that the contributions from the BLM represent only a portion of the economic activity reflected in the natural resource and natural amenity related sectors, seen in Figure 3-8.

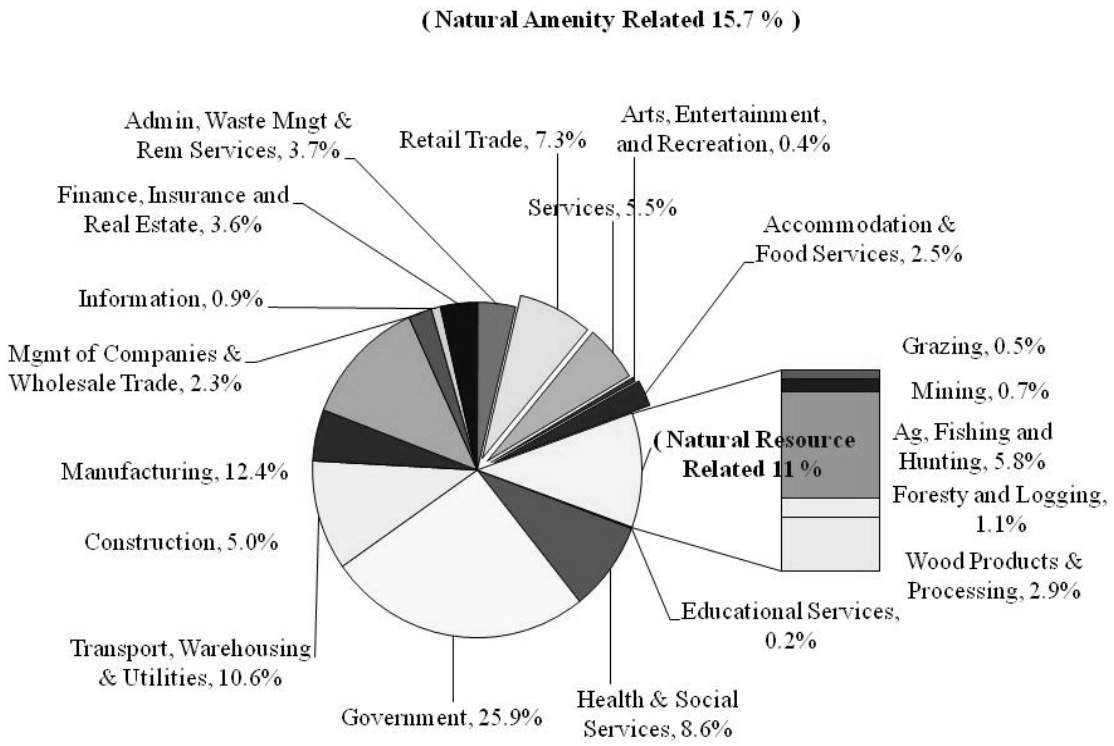


Figure 3-8. Economic analysis area labor income distribution (IMPLAN, 2006)

While share of TPI from labor earnings has decreased from 1970 to 2005 (from 74 to 61 percent), the share of non-labor income has risen (from 26 to 39 percent). As a share of TPI, investment income and transfer payments rose from 15 to 18 and 11 to 21 percent, respectively, over this 35-year time period. The increase in transfer payments are not entirely due to increases in welfare or unemployment related payments. Data shows the share of transfer payments from unemployment payments decreased from 6.4 to 3.3 percent and the share from income maintenance benefit payments (i.e., "welfare") slightly increased from 7.8 to 9.1 percent. In 2005, the largest component of transfer payments were the age related payments (classified as Old Age, Survivors, and Disability Insurance and Medicare Benefits) accounting for 55.8 percent of total transfer payments.

These patterns reflect the importance of the aging population noted above, who are more likely to have investment earnings compared to younger adults. As the population of the area continues to age, the share of income from these non-labor sources should continue to rise, as long as residents continue to stay in the area after retirement or new retirees move in. Rural county population change, the development of rural recreation, and retirement-destination areas are all related to natural amenities (Knapp and Graves 1989; Clark and Hunter 1992; Treyz et al. 1993; Mueser and Graves 1995; McGranahan 1999; Lewis et al. 2002). Consequently, many of the natural amenities in the area that are managed by the BLM indirectly contribute to area labor and non-labor income.

Contributions to the Area from BLM Management

The Decision Area contributes to the livelihoods of area residents through subsistence uses, as well as through market-based economic production and income generation. Public lands provide products of value to households at no or low cost (i.e., permit fees) such as fuelwood, wood posts, and livestock grazing areas. Additional products with subsistence value may include fish, game, plants, berries, and seeds. Use of these products is often a part of traditions that sustain local cultures (see Section A.14, Cultural Resources).

Employment and labor income contributions to the Planning Area's economy through market-based production were measured using the IMPLAN input-output model. Input-output models describe commodity flows from producers to intermediate and final consumers and include the direct, indirect, and induced contributions from BLM management in the Decision Area. Indirect contributions occur when a sector purchases supplies and services from other industries in order to produce their product. Induced contributions are the employment and labor income generated as a result of spending new household income generated by direct and indirect employment. The employment estimated is defined as any part-time, seasonal, or full-time job. In the following tables (Table 3-63 and Table 3-64), direct, indirect, and induced contributions are included in the estimated BLM contributions.

Table 3-63. Estimated Annual Employment Contribution by Resource Program

Resource Program	Number of Jobs Contributed		
	Total Program	Estimated Impact of Local Residents' Recreation Activities [9]	Program Net of Local Resident Recreation
Recreation	117	40	77
Wildlife and Fish Rec.	44	17	27
Grazing	26	-	26
Timber	13	-	13
Minerals	4	-	4
Externally Funded	5	-	5
Payments to States/Counties	4	-	4
BLM Expenditures	55	-	55
Total BLM Management[10]	267	57	210

[9] Expenditures by local residents for recreation on public lands do not introduce "new" money into the economy. If local residents could not recreate on public lands, they would likely find other forms of recreation in the area and continue to spend their recreation dollars in the local economy. Therefore, these portions of employment (and labor income below) are not necessarily dependent on the existence of the opportunities provided by public lands.
[10] Totals may not add due to rounding.

Table 3-64. Estimated Annual Labor Income Contribution by Resource Program

Resource Program	Thousands of 2011 Dollars		
	Total Program	Estimated Impact of Local Residents' Recreation Activities	Program Net of Local Resident Recreation
Recreation	$3,107	$1,184	$1,922
Wildlife and Fish Rec.	$1,117	$458	$658
Grazing	$365	-	$365
Timber	$422	-	$422
Minerals	$156	-	$156
Externally Funded	$129	-	$129
Payments to States/Counties	$147	-	$147
BLM Expenditures	$2,306	-	$2,306
Total BLM Management[10]	$6,105	$1,643	$6,105

Tourism and Recreation

Public lands within the Planning Area provide for a wide array of recreational opportunities. Boating and water-based recreation occurs throughout the Snake River watershed and on the Grande Ronde River. Area residents and tourists enjoy a wide array of other opportunities, including hunting, fishing, hiking, and motorized forms of recreation. The Baker FO estimates that there were 189,163 recreational visits to the Decision Area on an average annual basis between October 2006 and September 2007 (RMIS 2008). On their way to the Decision Area, and once they arrive, these visitors spend money on goods and services they would spend elsewhere if these opportunities did not exist. In this manner, the opportunities on public lands contribute to the local economy by attracting these visitors.

While providing recreational opportunities to local residents is an important contribution, the recreational expenditures of locals do not represent new money introduced into the economy. If BLM related opportunities were not present, residents would likely participate in other locally based activities and their money would still be spent in the local economy. After separating the contributions made from local residents, recreation contributes the most employment to the area economy of all resource programs and the second largest level of labor income (see Table 3-63 and Table 3-64).

Livestock Production

Within the Planning Area, livestock production not only plays an important economic social role, it also plays an important social role as area residents identify with the tradition, land-use, and history of livestock operations. In 2007, Baker, Morrow, and Umatilla Counties were Oregon's 6th , 2nd, and 7th largest cattle producers containing 5.8, 8.4 and 4.9 percent, respectively, of the total state cattle inventory. The most recent US Department of Agriculture's Census of Agriculture (2007) reports that all six counties within the Planning Area had 4,365 farms and ranches and that 46 percent of these (2,078 operators) were engaged in cattle production, with there being 354,779 head of cattle in these counties in 2007. Of the total number of farms, 6.4

percent were engaged in sheep production with a total of 15,806 sheep.[11] The National Agricultural Statistical Service distinguishes the market value of cattle sales from all agricultural commodities sales. In 2007, the market value of livestock sales in Baker, Morrow, Umatilla, Union, and Wallowa counties was 66, 39, 21, 26 and 58 percent, respectively (USDA 2007). This information was not disclosed for Asotin County in order to protect proprietary information.

Approximately 214 permittees operate on public lands in the six county Planning Area, with 70 percent operating in Baker County (BLM 2008d). The established level of permitted use in the Decision Area is currently 47,233 AUMs, which is the maximum number of AUMs that could be offered under ideal forage conditions. Authorized use of AUMs in the Decision Area has ranged between 77 and 87 percent (36,289 to 41,297 AUMs) of the preference limit in the last ten years due to factors such as drought and implementation of grazing practices to improve range conditions. Table 3-65 provides authorized use numbers between 1998 and 2008. In most cases, forage condition in the Decision Area allows for grazing between April and November because very few allotments are suitable for winter use. Commonly, allotments with riparian concerns have had midsummer use curtailed, with the use shifted more to spring and fall grazing.

Table 3-65. Annual AUM Authorizations in the Planning Area

Year	Authorized	Permitted Use	Authorized share of permitted use
1998	37,591	47,233	80%
1999	37,668	47,233	80%
2000	39,457	47,233	84%
2001	38,193	47,233	81%
2002	38,255	47,233	81%
2003	36,289	47,233	77%
2004	36,835	47,233	78%
2005	38,031	47,233	81%
2006	41,297	47,233	87%
2007	38,210	47,233	81%
2008	36,361	47,233	77%
2009	39,945	47,233	85%
2010	36,907	47,233	78%

Source: BLM Rangeland Administration System

Between 1998 and 2010, an average of 37,714 cattle AUMs and another 358 sheep and goat AUMs have been authorized on BLM lands in the Decision Area, which represents approximately 1.8 percent of the forage required for the cattle and 0.4 percent for sheep within the six county Planning Area in 2007. While authorized use of AUMs remained relatively stable over the period from 1998 to 2008, such use has dipped below 37,000 three times since 2003 (see Table 3-65). In addition, the acreage on which livestock grazing is authorized has decreased since 1989 (see Section C.3, Livestock Grazing). Possible decreases in authorized use could be explained by the tendency of ranching operations to subdivide and sell, often breaking

[11] Sheep inventoried were from all analysis area counties except Morrow where information was withheld by the Census of Agriculture in order to protect proprietary information.

longstanding family ranching traditions. This trend is compounded by the fact that prices of land have reached such a point that local people and young families are discouraged from entry into agriculture (JKA 2006). In addition, smaller operators are finding it more difficult to remain in the industry with rising operating costs.

A thin profit margin often separates livestock producers from negative net earnings. Often, employment outside the ranch augments the livestock operator's income (Oregonian 2009; Rowan and Conner 1995). Federal grazing land is particularly valuable because of the low grazing fees, which are calculated using the formula required under BLM grazing regulations found at 43 CFR 4130.8-1(a)(1) and are considerably less than those charged for private grazing land. In 2007, the statewide average AUM price for private land was $14.10 (BLM 2008d) while the state of Oregon's Department of State Lands fee was $4.80 (State of Oregon, 2008). The BLM formula yielded a fee of $1.35 per AUM in 2009, which was down from $1.56 in 2006. Because public lands are the least expensive grazing land available, use and access is coveted by area ranchers even though additional costs are usually incurred to use these lands. The benefit to area ranchers of low-cost BLM AUMs used in the Decision Area was estimated at $487,000 in 2007 (U.S. Department of Agriculture 2007b). The active use levels of grazing on public lands currently support approximately 26 jobs and $365,000 in labor income on an average annual basis (Table 3-63 and Table 3-64). While these numbers appear small, it must be remembered that BLM allotments provide an important complement to ranching operations that also occur on USFS and privately leased land.

Forest Products

In 2006, there were seven mills in the analysis area: two in Umatilla County, four in Union County, and one in Wallowa County (Ehinger and Associates 2006). Within Union County, stud and plywood manufacturing facilities were located in Elgin and a dimension lumber and a board plant were located in La Grande. In Umatilla County, two facilities producing dimension lumber were located in Pilot Rock and Pendleton, and another stud mill was located in Wallowa within Wallowa County. No mills were present in 2006 in Morrow and Baker counties; however, a log home and a chipping facility existed in Baker County in 2003 (Brandt et al. 2006).

As depicted in Figure 3-5 and Figure 3-8, the 2006 shares of employment and labor income in the analysis area attributable to the forestry and logging sector (0.6 and 1.1, respectively) and the wood products and processing sector (2.3 and 2.9 percent, respectively) are relatively small. However, counties within the analysis area showed varying degrees of specialization with respect to these two sectors in 2006. The shares of total employment and labor income within Baker County attributable to the forestry and logging sector was 1 and 0.4 percent, respectively, while the wood products and processing sector accounted for 5.7 and 5.1 percent of total employment and labor income, respectively. Similarly, Union County had a relatively higher specialization than other analysis area counties in these two sectors, with 1.1 percent of employment and 1.8 percent of labor income from the forestry and logging sector and 4.8 and 6.8 percent of employment and labor income attributable to the wood products and processing sector. Wallowa

and Asotin counties were slightly less specialized, while Umatilla and Morrow counties were the least specialized with respect to these sectors.

Annual harvest data for analysis area counties indicate total harvests decreased from a high of 547,904 MBF in 1987 to 190,277 MBF in 2002. Much of this decline can be attributed to harvest decreases on national forests in the area (Figure 3-9).

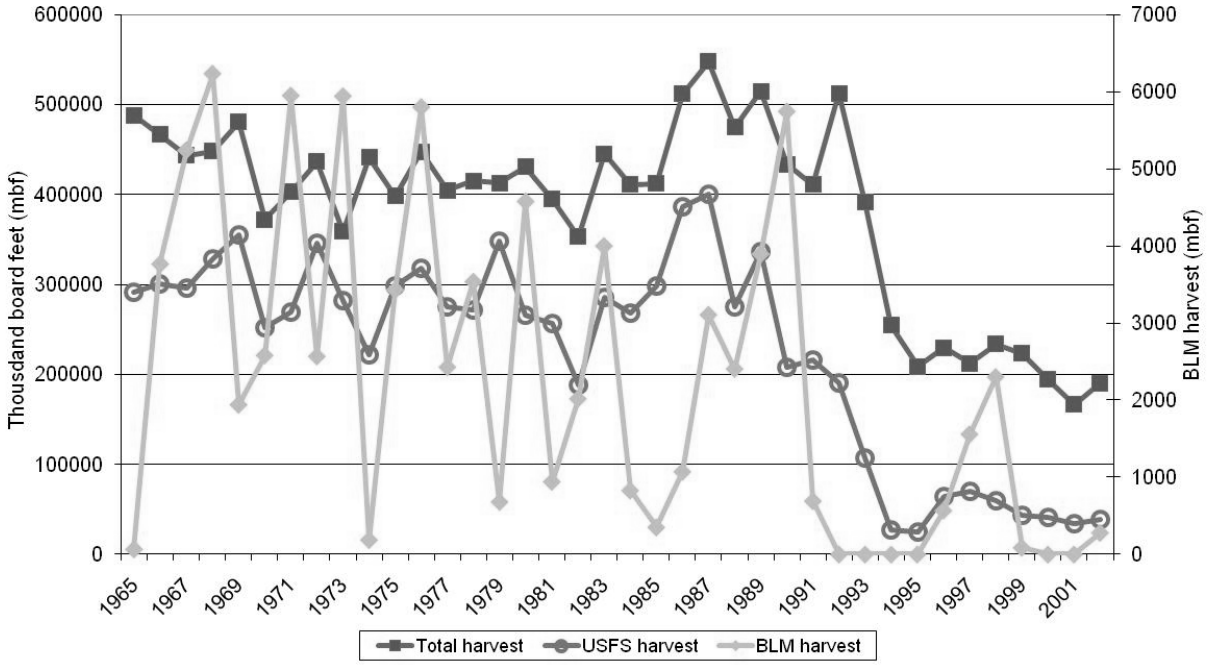


Figure 3-9. Total harvest and harvests by agency within the analysis area (Source: Oregon Department of Forestry, 2005 and Washington State Department of Natural Resources, 2002)

According to the Washington State Department of Natural Resources, Asotin County has had no BLM timber harvest between 1965 and 2002. The share of BLM harvest from total area harvests gives an indication of how dependent the area has been on BLM harvest. The share of BLM timber volume from the total volume harvested (from all ownerships) in the six analysis area counties reached 1.5 percent twice between 1965 and 2002 (in 1971, 1.5 percent of total volume consisted of BLM harvest and 1.7 percent in 1973). The mean BLM share over this period was less than 1 percent, with a minimum of zero and a maximum of 1.7 percent (Figure 3-10).

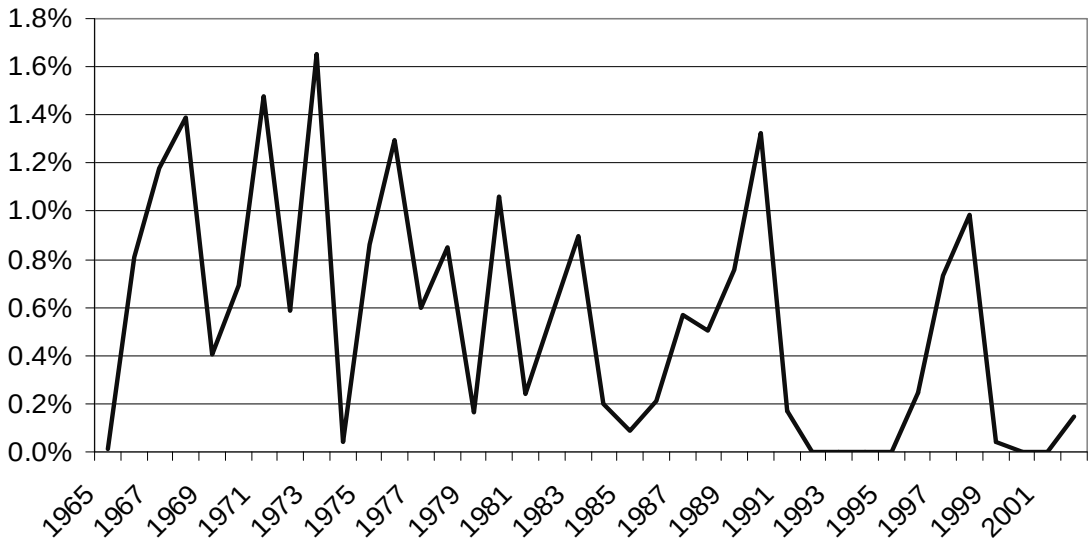


Figure 3-10. Share of BLM harvest from total harvest within the analysis area (Source: Oregon Department of Forestry, 2005 and Washington State Department of Natural Resources, 2002)

Regardless, timber removed from BLM lands in the area may provide an important resource when other sources are scarce. Patterns of timber market integration suggest the timber harvested in the area stays in the area. Of the Oregon timber received in the area in 2003, 99.8 percent was harvested in the area (Brandt et al. 2006). On an average annual basis, timber removed from the Decision Area provides 13 jobs and $422,000 in labor income (Table 3-63 and Table 3-64).

Mining

From 1970 to 2000, estimated mining employment as a share of total employment never exceeded 0.5 percent in the six county analysis area. In Asotin, Baker, Morrow, Umatilla, Union, and Wallowa Counties, mining made up 0.1, 0.3, 1.4, 0.02, 0.3 and 0 percent, respectively, in 2000 (US Department of Commerce, 2000). Given the small number of firms in the area within the industry, data are not available from the U.S. Department of Commerce; however, similar data depicted in Figure 3-8 and Table 3-63 show that mining made up 0.5 percent of analysis area employment and 0.7 percent of labor income in 2006 (IMPLAN 2006).

For the most part, saleable mineral materials, such as pumice and crushed stone, are removed from public lands in the Planning Area; however, a small amount of gold is collected by recreational miners. Speculative oil and gas leasing also occurs in Morrow and Umatilla Counties; however, no development has been proposed or is anticipated. The minerals program in the Decision Area supports approximately four jobs and $156,000 in labor income on an average annual basis (Table 3-63 and Table 3-64).

A portion of the revenues received by the BLM from the sale of materials and the lease of land is distributed back to counties in the Planning Area. The contributions to area employment and income from these payments are discussed below under revenue sharing.

Externally Funded Ecosystem Restoration

A portion of the management activities occurring in the Decision Area are performed with funds not accounted for under the general BLM expenditures discussed below. These funds often come from external sources such as stewardship grants. Recent examples within the Decision Area include the Grouse Creek Restoration Project and the Grande Ronde Model Watershed exclosure fencing project. In addition, a large portion of noxious and invasive weed treatment in the Decision Area is performed by the Tri-County Cooperative Weed Management Association with funding sources not provided by the BLM. It is estimated that these externally funded ecosystem restoration projects support approximately $129,000 in labor income and five jobs in the impact area economy on an average annual basis (Table 3-63 and Table 3-64).

Revenue Sharing

In 1976, Congress passed legislation to provide funding to counties through "payments in lieu of taxes" (PILT) in order to compensate for tax revenues not received from federal lands. These taxes would typically fund various services that are provided by counties (e.g., road maintenance, emergency services, and law enforcement). The PILT payments are determined using a formula that accounts for the county acreage of federal land, county population, and the previous year's revenue sharing from resource uses on federal land (e.g., timber, range, and mining). Figure 3-11displays previous year's payments.

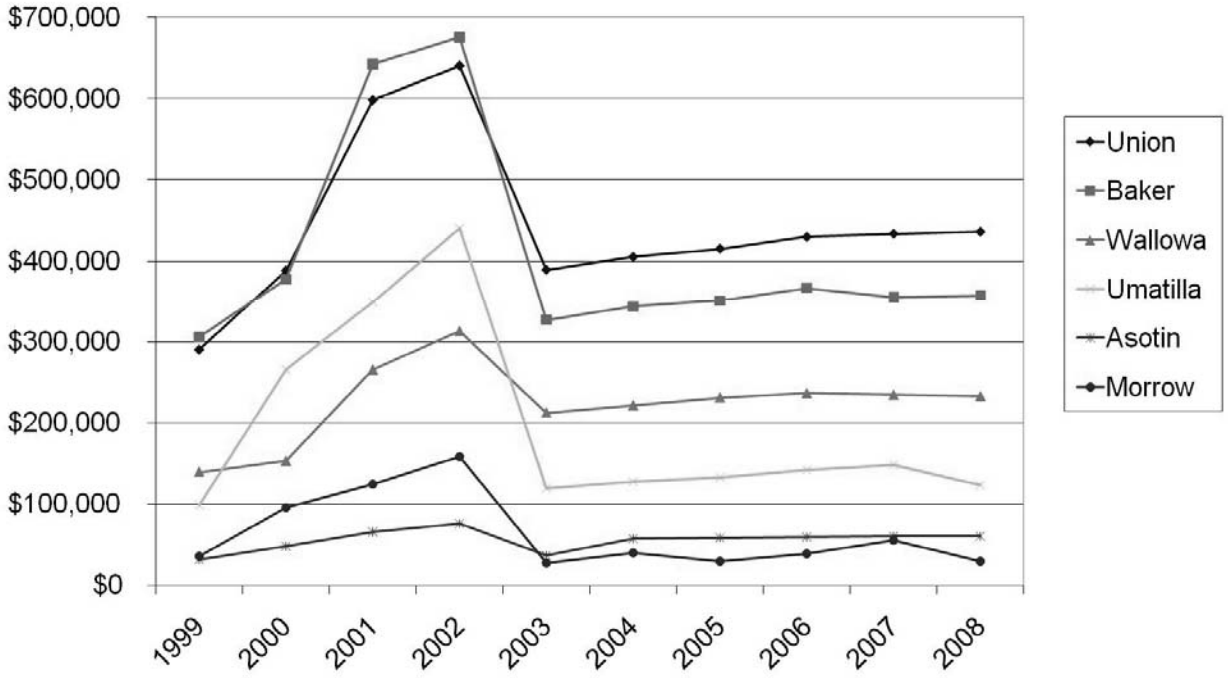


Figure 3-11. Annual Payments in Lieu of Taxes received by Planning Area counties (Source: DOI 2008)

These PILT payments add to revenues these counties routinely receive through property taxes and other sources of local government revenue. Several counties in the Planning Area are relatively more dependent on these payments than are other counties. In 2002, these payments accounted for 2.3, 0.3, 0.2, 0.8, 3.9, and 0.2 percent of local government revenue in Baker, Morrow, Umatilla, Union, Wallowa, and Asotin counties, respectively. In four of the analysis area counties, BLM entitlement acreages have remained constant or increased since 1999 (see Figure 3-12). For example, BLM entitlement acreage in Wallowa County increased between 2003 and 2004 with the purchase of land provided for by dollars from the LWCF. In Baker County, 225 acres were obtained in 2007 with the LWCF (Personal communication with Baker FO Staff, 2008). Within the Decision Area, decreases in entitlement acreages occurred in Morrow and Umatilla counties due to the Northeastern Oregon Assembled Land Exchange, and were partially offset in Wallowa County with purchase of the Colson property.

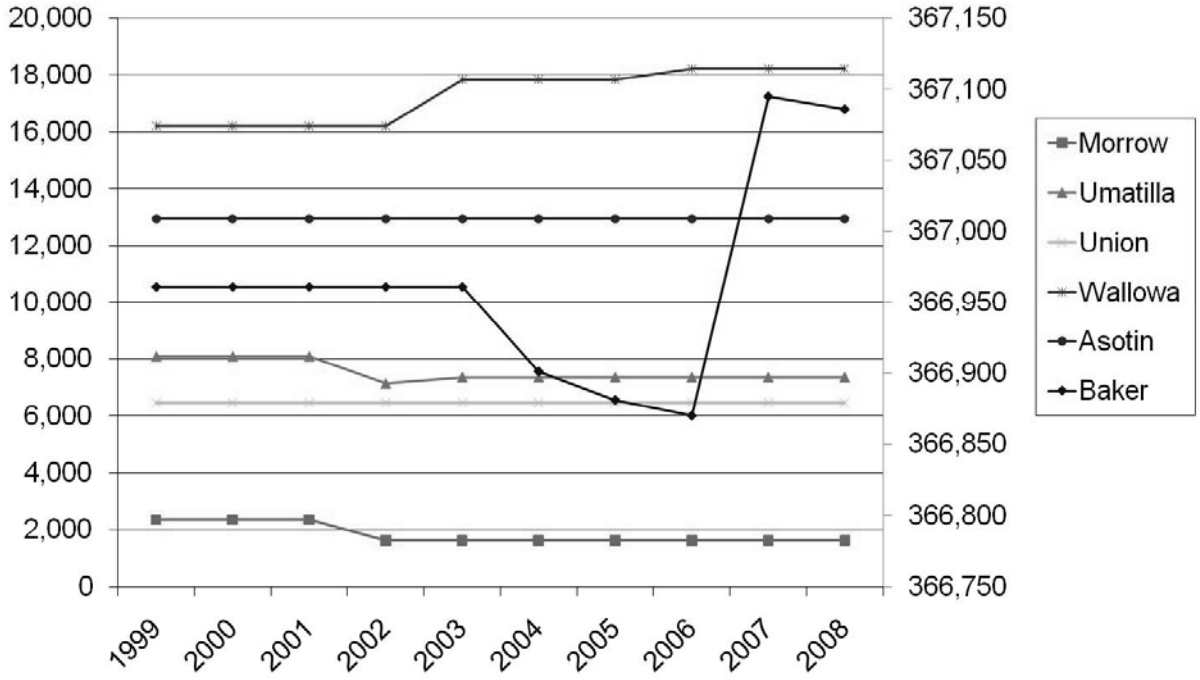


Figure 3-12. BLM entitlement acreages within Planning Area counties (Source: DOI 2008)

While these decreases accounted for 31 and 9 percent of change in their respective entitlement acreages, PILT payments are not entirely dependent on entitlement acreages. Funding for PILT is provided by annual appropriation acts. In recent years, funding has fallen short of the full amount that local governments would be authorized to receive under the PILT statute. When this happens, the department then calculates individual payments to counties by prorating the aggregate appropriation amount amongst all counties. As a result, decreases in payments occurred in all counties between 2002 and 2003 (Figure 3-11). In addition, Morrow and Wallowa counties saw slight decreases between 2007 and 2008, which were likely from effects to the maximum payment caused by changes in county population numbers or in the previous year's revenue payments.

In addition to PILT, counties receive a share of receipts from mineral material removal and leased land and range revenues under the 1902 Reclamation Act, the 1920 Mineral Lands Leasing Act, and the 1934 Taylor Grazing Act. These payments support approximately four jobs and $147,000 in labor income on an average annual basis within the analysis area economy (see Table 3-63 and Table 3-64).

BLM Expenditures and Employment

The Baker FO is located in Baker City and provides a direct contribution to the area's economy. Bureau of Land Management operations and management make direct contributions to area economic activity by employing people who reside in the area and by spending dollars on project related goods and services. Table 3-66 shows total expenditures made by the Baker FO between 2001 and 2007, as well as the number of permanent, full-time employees. Management of public lands in the Planning Area is largely carried out through a professional and administrative staff in the Baker FO. In addition to permanent full time employees, seasonal staff work and live in the area. Contracts for facilities maintenance, shuttling vehicles, and projects also contribute directly to the area's economy and social stability. Many of these impacts are captured in the form of the total expenditures the BLM makes in the Planning Area. While Baker FO's total expenditures decreased between 2002 and 2006, a jump in expenditures was seen in 2007, largely due to an increase in project-related spending.

Table 3-66. Baker FO Expenditures and Employment

Year	Total Expenditures	Permanent/Full-time Employees
2001	$2,467,000	26
2002	$2,570,000	26
2003	$2,434,000	27
2004	$2,284,000	-
2005	$2,102,000	-
2006	$1,940,000	24
2007	$2,841,000	20

On an average annual basis, Baker FO expenditures and employment support 55 jobs and $2.3 million million in labor income (see Table 3-63 and Table 3-64). This accounts for the second largest employment contribution and the largest income contribution to the analysis area of all of the BLM's resource programs.

Renewable Energy Development

Wind generation is becoming more and more a part of the eastern Oregon and Washington economies. The landscape has always been subject to the driving winds of the Columbia River Canyon, which are now being harnessed by wind farms. Local businesses and counties are benefiting from the influx of resources and tax revenue from these projects. It remains to be seen whether public lands can contribute to the Planning Area's economy and community well-being through provision of energy leases.

Small community/cooperative projects sell power through power purchase agreements with regulated utilities. These projects are attractive because they can become community revenue generators, involve schools and local interests, and help supplement future power growth. Large commercial projects are sited in areas of strong winds, transmission access, and market demand. As suitable windy land becomes more saturated with development, the availability of leases on federal land may play a larger role in the industry.

As of April 2009, installed wind power capacity in Oregon reached 1,435 MW of power, up from 25 MW in 1999. Of the 2009 total installed capacity, 20 percent is located in the Planning Area within Umatilla and Union counties (American Wind Energy Association 2009). The BLM has approved the development of the Lime Wind Project on public lands (which will produce less than 10 MW per year) and another application is being evaluated near Huntington, which would produce approximately 200 MW per year.

Non-market economic value

The value of resource goods traded in a market can be obtained from information on the quantity sold and market price; however, markets do not exist for some resources, such as recreational opportunities and environmental services. Measuring their value is important since, without estimates, these resources may be implicitly undervalued and decisions regarding their use may not accurately reflect their true value to society. Because these recreational and environmental values are not traded in markets, they can be characterized as non-market values.

Non-market values can be broken down into two categories: use and non-use values. The use-value of a non-market good is the value to society from the direct use of the asset. Within the Planning Area, this occurs through activities such as recreational fishing, hunting, boating, and bird watching. The use of non-market goods often requires consumption of associated market goods, such as lodging, gas, and fishing equipment.

Non-use values of a non-market good reflect the value of an asset beyond any use. These can be described as existence, option, and bequest values. Existence values are the amount society is willing to pay to guarantee that an asset simply exists. An existence value might be the value of knowing that wild steelhead spawn in streams on public lands. Other non-use values are thought to originate in society's willingness to pay to preserve the option for future use. These are referred to as option values and bequest values. Option values exist for something that has not yet been discovered, such as the future value of a plant as medicine, while bequest values apply to the value of satisfaction from preserving a natural environment for future generations. Non-market use and non-use values can be distinguished by the methods used to estimate them. Use values are often estimated using revealed preference methods or stated preference methods, while non-use values can only be estimated using hypothetical methods. While use and non-use values exist for the Decision Area, evaluation is not always feasible during the planning process; however, this does not preclude their consideration in the planning process.

Community Resiliency and Well-being

Community resilience can be described as the existence, development, and engagement of community resources to thrive in a dynamic environment characterized by change, uncertainty, unpredictability, and surprise. Resilient communities intentionally develop both a personal and a group capacity to respond to and influence change, to sustain and renew the community, and to develop new trajectories for the communities' future (Magis 2007, pg 4). How a community

faces change is also tied to community well-being, which is an integral part of life, necessary for survival (Raish and McSweeney 2003, pp 26).

Community resiliency and well-being can be tied to the resources or assets available to a community and provided by public lands. While resources provided by public lands are often physical (air, soils, water, landscape and biodiversity), intangible values are also provided by public lands. These include a sense of heritage and belonging, and opportunities that provide personal development (such as self-esteem, education, and leadership).

Assessing the values of communities within the Decision Area first requires identification of these communities. Discussion of these communities and their connection to BLM management are included below and include individuals and groups living in the Planning Area, as well as those living outside the Planning Area but interested in public lands.

Communities Living in the Area and Interested in Public Lands within the Planning Area

Communities within the Planning Area can be described by the areas they live in and by their connections to the local landscape. During the resource management planning process, the public has given the BLM insightful information about their connections to the land and their interests in BLM management. This information has provided the BLM with community characteristics and values that help when defining these communities.

When we look at the effects of land management actions, the most critical impacts may be too small, rural communities (USFS 2000, p. 5). Consequently, geographically defined communities are an important and relevant level for social assessment; however, not all social scientists agree that the geographically based community is always the appropriate level of analysis. The Northwest Forest Plan's Federal Ecosystem Management Advisory Team (1993, pg VII-35) makes the point that this view "only refers to physical or political boundaries and not to the relationships among people who reside within such boundaries."

Communities of interest bring together stakeholders from different backgrounds to solve a problem of common concern (Fischer 2001, p. 4). Brown and Duguid (1991, p. 53) describe communities of interest as "communities-of-communities." They provide unique opportunities to explore the linkages between people and public lands that may transcend the geographically defined community.

Individuals and Groups Interested in Recreation

Recreationists from around the state and within the Planning Area have traditionally used the area for a variety of purposes. The area population continues to be outdoor-oriented in work and play, which remains a key value in local communities and an amenity that attracts newcomers (JKA 2006). The solitude, open space, scenery, and opportunity for escape appeals to many users of the Decision Area. Opportunities for experiences such as biking, hiking, birding,

climbing, hunting, recreational mining, target practice, OHV use, and cultural interpretation attract many users to public lands.

General concerns expressed by individuals and groups included access to more recreation information such as improved signage, informational kiosks, and interpretation of cultural and historical features. For example, interest was often expressed concerning NHOTIC. Additionally, infrastructure improvements such as picnic tables, designated camping, restrooms, and dumpsites for recreationists were commonly requested. Access to frequently used areas of the Decision Area was also a common concern. For example, loss of river and hunting access was commonly expressed (JKA 2006). Motorized and non-motorized recreationists alike desired continued use of public lands and access to areas they have historically used. Some maintained that the economies of local communities were closely tied to recreation and could be further supported by opportunities provided by public lands. The public noted that the cumulative effect of increased fishing and hunting closure on private lands puts more pressure on opportunities provided by public lands (JKA 2006). Others stated that economic damage could result if recreational opportunities were not maintained.

Motorized use of public lands in the Planning Area is important to individuals and groups who recreate in the area. The increase in users coming from outside the area was a concern expressed in the JKA (2006) report. Other motorized users expressed an interest in the ability to wander off trails on public lands in open areas, a desire for infrastructure improvements such as camping near OHV parks, and interest in game retrieval. Motorized users acknowledged the need to address responsible OHV use, as well in order to limit risks of personal injury and resource damage. Education was frequently suggested as a means to accomplish these objectives (JKA 2006).

While motorized use is of interest in the area, the public often sees a need to limit use to designated routes in order to provide quality non-motorized experiences such as biking, hiking, boating, horseback riding, and wildlife viewing.

Individuals and groups interested in recreation depend upon opportunities provided by the landscape of the Decision Area, which can be characterized by the community capital known as "natural capital." These opportunities foster human and social capital within the recreation community. In this manner, the BLM's management of the Decision Area's natural capital supports community resiliency.

Individuals and Groups Interested in Access

Access across private land to public land parcels and across public lands to private land for recreation, commercial, or cultural uses involves many different types of communities. While access concerns for specific communities of interest may exist, the unifying interest across communities makes this an important concern that merits separate distinction for analysis.

Some members of the community commented that access was important to continue the commercial uses of public and private lands that their livelihoods depend upon. The JKA (2006) report noted that citizens were concerned that public land boundaries are not clearly marked, making it difficult for users to know where public land ends. Others wanted access to public lands maintained regardless of the trend throughout the West of reduced access to public lands. Specific areas mentioned with access concerns were Juniper Canyon, the area landlocked by Cunningham Sheep, land near Holcomb property off Sag Road, public lands land near Brownlee Reservoir off Snake River Road, and the Grand Ronde parcels (JKA 2006).

Some were also concerned with coordinating access to adjoining parcels if land is exchanged or transferred to other ownerships. The JKA (2006) report also noted the importance of coordinating with county efforts to improve access. Interest in trail maps was also commonly expressed, as was a desire for continued access to culturally important areas. Others suggested that conservation easements could be used in order to provide access for recreation uses.

Individuals and Groups Interested in Lands and Realty

Many different types of communities, individuals, and groups are interested in exchange, sale, disposal, or acquisition of public land parcels. These include concerns over general land tenure designation and the desire for counties to review such designations to ensure compatibility with long-term county plans. Others noted the importance of local landowner input to determine appropriate management of newly purchased land. For example, some individuals and groups would like the BLM to improve their capacity to work with locals and enforce rules prior to purchasing more land along the Grande Ronde River corridor (JKA 2006). Others often feel threatened by land tenure adjustments and expanding public lands due to the perceived limits on freedoms associated with public land management and reduced contributions to local economies when compared to lands managed under private ownership.

There was also interest in land for community uses such as housing and industrial parks to provide jobs and attract younger families with children to the Planning Area (JKA 2006). Public lands can be made available for such community uses under the R&PP Act, as well as for recreation facilities and other community infrastructure needs such as water towers and disposal sites. In addition, communities often see opportunities through the R&PP Act for improved management of public lands where dumping or other illicit activity occurs.

Interested individuals and groups also showed broad support of land acquisitions to block up isolated parcels of public lands and land disposal or exchange in order to remove small isolated parcels out of federal ownership. Such support was based on the desire to slow trespassing on private land to access isolated public land parcels, decrease costs of management, and improve effectiveness of resource management.

Individuals and Groups Interested in Ranching

Ranching has played a historic role in the Planning Area and many would like to see this traditional use continue. However, settlement patterns are changing as wealthier people buy up ranches and landholdings and convert them into ranchettes and other non-agricultural uses. While the influx of new money and expenditures from these newcomers is supported, many lament the loss of the traditional ranching base characteristic of the Old West (JKA 2006).

Many area ranchers are concerned about the loss of grazing allotments or their reduction in size and/or the loss of access to existing allotments due to land disposals and exchanges. Some are also concerned about conflicts with recreation uses. Several individuals or groups noted the possible use of strategic grazing to reduce the spread of noxious weeds and fire danger, while others advocated allotment rest, rotation, or grass banks to move cattle to less sensitive or damaged areas and let other areas rest.

Natural and cultural capital is important assets to the ranching community that are tied to BLM management in the Decision Area and that affect access and the quality of allotments on public lands. Rancher resilience may be waning since the tradition of area ranching may be in decline. Often, the offspring of traditional ranching families do not maintain the family tradition given new challenges presented by changing market conditions (personal communication with Baker FO staff).

Individuals and Groups Interested in Traditional Uses

Tribal use and interest in the Decision Area include recreational, subsistence, and cultural uses. Many of these uses have been a part of local culture and community identity since long before Planning Area lands were designated for administration by the BLM. The Nez Perce Tribe has special interest in areas of the Decision Area referred to as “Precious Lands” and the Umatilla, Colville, and Warm Springs tribes have interest in “usual and accustomed areas” (JKA 2006).

During the public comment period, some tribal members expressed concern over continued access to materials for traditional and ceremonial uses and the integrity of habitat necessary to maintain these uses. For example, some tribes were concerned with grazing management or current resource issues that might affect harvestable populations of anadromous fish or big game animals. Others were concerned with the preservation of treaty-protected fishing rights.
In addition to the concerns over access to plant, food, and medicinal gathering areas and culturally important sites, some tribes and individuals were concerned about the development of travel areas for hunting and fishing. Certain uses on public lands, such as OHV use, were seen as potentially threatening to the integrity of traditional and ceremonial uses and thus require adequate management by the BLM to reduce such threats (JKA 2006). The public acknowledged the BLM’s role in supporting community diversity by ensuring traditional use site access and site integrity, such as through special area designations. It was also suggested that area residents and tribes should be engaged in the planning process in order to ensure these uses.

Access to resources important for traditional uses and the integrity of these uses and sites are maintained by the Baker FO, which ensures that these traditional uses will continue. The resilience of this community is dependent on access to and the quality of the Decision Area's natural capital, which sustains these resources. Therefore, their resilience is fostered by public land management as it relates to the protection of natural and cultural capital. While the resilience of those interested in traditional uses may be highly dependent on the predominant area's cultural capital, political capital is often required to access these resources and achieve community goals.

Individuals and groups who give a high priority to resource use

Many individuals and groups put a high value on traditional resource uses such as mining, grazing, and forestry, with some expressing high degrees of uncertainty about the Planning Area's social and economic well-being and resilience if these uses continue to decrease. For example, ranching is a highly valued way of life and some people praise its contribution to the social, economic, and ecological health of the area. Others advocate emergent uses such as wind development as valuable and important uses of public lands that would generate revenue for the Planning Area.

Some comments received during public scoping portrayed a message that traditional resource uses were not synonymous with landscape abuses, with some uses actually improving landscape health. One example provided was reduced fire risk associated with grazing. Others supported energy development as long as adverse impacts were avoided or mitigated.

The use of resources on public lands provides financial capital for Planning Area residents and sometimes builds capital as land is transferred for community use under R&PP agreements. In turn, social capital and human capital are cultivated and community resiliency is strengthened. Many of these uses depend upon the continued integrity of landscape health (i.e., natural capital) as maintained by the BLM. Resilience of those interested in resource uses thus depends on maintenance of the quantity and quality of the Decision Area's natural capital.

Individuals and groups who give a high priority to resource protection

Cultural site integrity, habitat connectivity, riparian health, soil productivity, biodiversity, open space, scenery, and other resource values in the Decision Area are a priority to many individuals and groups. Some suggested ways to achieve healthy ecosystems and protect resources, including through invasive species control, special area designations, land tenure adjustment, education, and collaboration. They also support placing limits on motorized use, energy development, mineral development, grazing, and pesticide and herbicide use for the purposes of protecting resources.

Individuals and groups who give high priority to resource protection believe that the results of such protections can attract visitors and businesses to the Planning Area, thus providing economic benefits. People living in the Planning Area are aware of how the unique, natural

environment contributes to their current and future social and economic well-being. In their opinion, continued resource protection will ensure these benefits in the future. For example, many expressed concern about the negative impacts from damaged visual quality of public lands to private property values. Many saw the rural character of the area as an asset ensured by the BLM. This rural character was cited as an integral part of community identity seen as susceptible to change with the influx of newcomers (JKA 2006). Of particular concern was the ability of the BLM to continue to fund weed abatement programs that have multi-stakeholder and strong community support (JKA 2006).

The resilience of those individuals and groups interested in resource protection is related to BLM management through the provision of natural capital. Air, soil, and water quality, as well as landscape health and biodiversity, are maintained by BLM management within the Decision Area. Human capital and social capital are additionally tied to natural capital. Human health, a sense of belonging, and trust in the BLM are fostered by successful stewardship of natural capital in the Decision Area.

2. ENVIRONMENTAL JUSTICE

a. Current Conditions and Trends

Environmental justice refers to the fair treatment and meaningful involvement of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, programs, and policies. Executive Order 12898 requires federal agencies to "identify and address the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

According to the Council on Environmental Quality's (CEQ's) Environmental Justice Guidelines for NEPA (1997), "minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis." Table 3-61 shows that Morrow and Umatilla Counties' share of those identifying with some other race and Hispanics were greater than the state and economic analysis area averages during 2000. Thus, the U.S. Census data suggest minority populations within the economic analysis area meet the CEQ's Environmental Justice criterion.

The CEQ guidance on identifying low-income populations states that, "agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect." The discussion above on poverty noted the share of those living below the poverty level decreased between 1989 and 1999; however, county levels remained above their states in all analysis area counties (Table

3-62). Thus, the U.S. Census data indicate low-income populations exist within the economic analysis area.

3. PUBLIC SAFETY

The public's health and safety while using public lands is foremost in all management actions and decisions. Much of this is due to the remoteness and limited vehicle access to much of the Decision Area should an emergency occur. There are many potential risks or hazards that the BLM strives to reduce or eliminate to the greatest feasible extent.

a. Current Conditions and Trends

Abandoned Mines

Sources of data on abandoned mines include field surveys and inspections, USGS reports and maps, U.S. Bureau of Mines reports, as well as state reports and databases. Some abandoned mines also contain hazardous and toxic chemical hazards in addition to structures such as shafts, adits, winzes, tunnels, and pits that pose safety hazards to the public. Identifying and sealing, fencing, and signing unsafe abandoned mine sites and openings will likely continue at approximately the same rate as in recent years. Contaminated site remediation and abandoned mine closures will occur based on hazard ranking and available funding.

Waste Dumping

Solid waste issues include illegal dumping (either in conjunction with a residence or simply at a convenient location), dumping in reclaimed gravel pits, littering along roadsides, and small- to large-scale dumping in areas that are infrequently visited by users or BLM personnel. Although there is no database detailing the locations of all the solid waste sites, the BLM knows the location of some of these. Most sites are small, generally less than one acre, and contain typical household garbage and debris. Hazardous materials generally consist of household chemical products in small quantities or regulated materials, such as petroleum products. A few sites in agricultural areas may have pesticide or herbicide containers. Sites are more of a problem if they contain unknown chemicals that need characterization. There has not been a significant increase in known sites. The BLM infrequently identifies new sites and cleans up known sites at times.

Hazardous Materials

Hazardous materials sites are locations on or near public land where hazardous or regulated materials are used, stored, or disposed. Hazardous materials sites can contaminate air, soil, surface water, and groundwater resources.

There is no comprehensive database of hazardous materials sites within the Decision Area since there are no large-scale operations where mining materials/chemicals or agricultural chemicals are stored and used. Other types of hazardous materials sites include occupancy-related sites and

shooting ranges that are created without permits. No known hazardous material areas occur within the Decision Area other than the Powder River Sportsman Club, which is a shooting range authorized under an R&PP lease. Household dumps around ranches, burn sites, lab chemical dumps, and illegal dumps can also be hazardous materials sites. The number of these types of hazardous materials sites is not known as they can develop overnight in areas that are seldom seen, and may exist for years before discovery. Known sites remain in the same condition year after year (although unseen deterioration probably occurs) until clean-up operations can be accomplished.

Public Facilities

There are many developed campgrounds, river/lake take-outs, staging areas, and other administrative sites in the Decision Area. These tend to be associated primarily with recreational use along the Snake River impoundments and the Grande Ronde/Wallowa River system. Other areas with facilities that pose potential public safety concerns include the Virtue Flat OHV Play Area and NHOTIC. The BLM strives to provide for a safe and healthy experience for the visiting public at these facilities. Potable water sources are tested before, and periodically during, use by the public to ensure clean drinking water.

BLM Road System

There are hundreds of miles of roads, primitive roads, trails, and routes in the Decision Area. The vast majority of these are either bladed dirt road or simple two-track jeep trails. There are no paved BLM roads within the Decision Area and very few miles of graveled surface roads that are regularly maintained. Inclement weather conditions can quickly make travel on many of these roads risky or impossible at times. Many are not useable by standard passenger vehicles even in the best of conditions, and are not used at all during the winter months due to road conditions or deep snow.

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