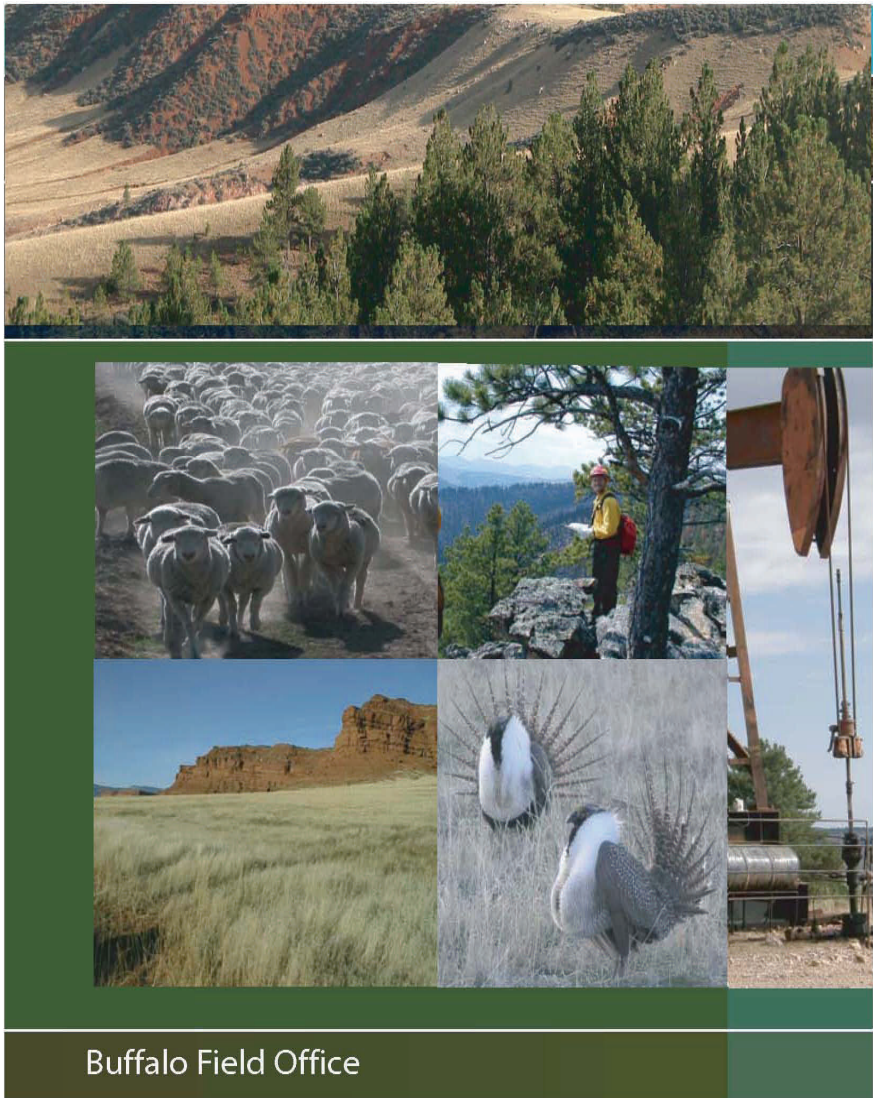
BLM

Draft Resource Management Plan and Environmental Impact Statement for the Buffalo Field Office Planning Area



Volume 1 of 3

Chapters 1 - 3

June 2013

Buffalo Field Office

The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

BLM/WY/PL-13/020+1610

Volume 1 of 3

Draft Resource Management Plan and Environmental Impact Statement

for the

Buffalo Field Office Planning Area

Volume 1 of 3

Chapters 1 - 3

U.S. Department of the Interior
Bureau of Land Management
Buffalo Field Office, Wyoming

June 2013

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Table of Contents

VOLUME 1 OF 3

Letter to the Reader ..... **xxxvii**

Abstract ..... **xxxix**

Executive Summary ..... **xli**

Reader's Guide to this Document ..... **lix**

Acronyms and Abbreviations ..... **lxi**

1. Purpose and Need for Action **1**

1.1. Introduction and Background 1
1.1.1. Historical Overview 1
1.1.2. Land Ownership within the Planning Area 1
1.2. Purpose and Need for the Resource Management Plan Revision 4
1.2.1. Purpose 4
1.2.2. Need for Revising the Existing Plan 4
1.3. Planning Process 6
1.3.1. BLM Planning Process 7
1.3.2. Resource Management Plan Implementation 8
1.4. Decision Framework 9
1.4.1. Planning Issues 9
1.4.2. Planning Criteria 12
1.4.3. Major Statutes, Limitations, and Guidelines 14
1.4.4. Other Related Plans 14
1.4.5. Other Policies 15
1.5. Collaboration 15
1.5.1. Consultation and Coordination 16
1.6. National Greater Sage-Grouse Planning Strategy 18
1.7. Topics Not Addressed in This Resource Management Plan Revision 19

2. Resource Management Alternatives **21**

2.1. Alternatives Development Process 23
2.2. Alternative Components 25
2.2.1. Goals and Objectives 25
2.2.2. Allowable Uses and Management Actions 25
2.3. National Greater Sage-Grouse Planning Strategy (WO IM-2012-044) 27
2.4. Alternatives Considered, but Not Carried Forward for Detailed Analysis 28
2.4.1. Physical Resources 28
2.4.2. Mineral Resources 28

2.4.3. Fire and Fuels Management ... 30
2.4.4. Biological Resources ... 30
2.4.5. Heritage and Visual Resources ... 31
2.4.6. Land Resources ... 31
2.4.7. Special Designations ... 33
2.4.8. Socioeconomic Resources ... 33
2.5. Management Actions Common to All Alternatives ... 33
2.5.1. Physical Resources ... 34
2.5.2. Mineral Resources ... 34
2.5.3. Fire and Fuels Management ... 34
2.5.4. Biological Resources ... 35
2.5.5. Heritage and Visual Resources ... 35
2.5.6. Land Resources ... 36
2.5.7. Special Designations ... 37
2.5.8. Socioeconomic Resources ... 37
2.6. Summaries of the Alternatives ... 37
2.6.1. Alternative A – Current Management (No Action) ... 42
2.6.2. Alternative B – Resource Conservation ... 45
2.6.3. Alternative C – Resource Development ... 49
2.6.4. Alternative D – Preferred Alternative ... 52
2.7. Detailed Alternative Descriptions by Resource ... 56
2.7.1. 1000 PHYSICAL RESOURCES ... 57
2.7.2. 2000 MINERAL RESOURCES ... 66
2.7.3. 3000 FIRE AND FUELS MANAGEMENT ... 74
2.7.4. 4000 BIOLOGICAL RESOURCES ... 79
2.7.5. 5000 HERITAGE AND VISUAL RESOURCES ... 132
2.7.6. 6000 LAND RESOURCES ... 142
2.7.7. 7000 SPECIAL DESIGNATIONS ... 170
2.7.8. 8000 SOCIOECONOMIC RESOURCES ... 176
2.8. Summary of Environmental Consequences by Alternative ... 181

3. Affected Environment ... 185

3.1. Physical Resources ... 187
3.1.1. Air Quality ... 187
3.1.1.1. Regional Context ... 187
3.1.1.2. Regulatory and Policy Framework ... 187
3.1.1.3. Indicators ... 188
3.1.1.4. Current Condition ... 191
3.1.1.5. Trends ... 200
3.1.1.6. Key Features ... 220
3.1.2. Geological Resources ... 221
3.1.2.1. Regional Context ... 221
3.1.2.2. Indicators ... 221
3.1.2.3. Current Condition ... 222
3.1.2.4. Trends ... 224
3.1.2.5. Key Features ... 225
3.1.3. Soil ... 225
3.1.3.1. Regional Context ... 225
3.1.3.2. Indicators ... 225
3.1.3.3. Current Condition ... 226

3.1.3.4. Trends ... 227
3.1.3.5. Key Features ... 227
3.1.4. Water Resources ... 229
3.1.4.1. Regional Context ... 229
3.1.4.2. Indicators ... 229
3.1.4.3. Current Condition ... 230
3.1.4.4. Trends ... 236
3.1.4.5. Key Features ... 239
3.1.5. Cave and Karst Resources ... 239
3.1.5.1. Regional Context ... 239
3.1.5.2. Indicators ... 240
3.1.5.3. Current Condition ... 240
3.1.5.4. Trends ... 241
3.1.5.5. Key Features ... 241
3.2. Mineral Resources ... 241
3.2.1. Locatable Minerals ... 244
3.2.1.1. Regional Context ... 244
3.2.1.2. Indicators ... 244
3.2.1.3. Current Condition ... 245
3.2.1.4. Trends ... 248
3.2.1.5. Key Features ... 250
3.2.1.6. Locatable Minerals – Bentonite ... 250
3.2.1.7. Locatable Minerals – Gypsum ... 253
3.2.1.8. Locatable Minerals – Uranium ... 254
3.2.2. Leasable Minerals – Coal ... 257
3.2.2.1. Regional Context ... 257
3.2.2.2. Indicators ... 259
3.2.2.3. Current Condition ... 259
3.2.2.4. Trends ... 268
3.2.2.5. Key Features ... 269
3.2.3. Leasable Minerals – Fluids ... 269
3.2.3.1. Regional Context ... 269
3.2.3.2. Indicators ... 270
3.2.3.3. Current Condition ... 270
3.2.3.4. Trends ... 274
3.2.3.5. Key Features ... 274
3.2.4. Leasable Minerals – Other ... 275
3.2.4.1. Regional Context ... 275
3.2.4.2. Indicators ... 275
3.2.4.3. Current Condition ... 275
3.2.4.4. Trends ... 275
3.2.4.5. Key Features ... 275
3.2.5. Salable Minerals ... 276
3.2.5.1. Regional Context ... 276
3.2.5.2. Indicators ... 276
3.2.5.3. Current Condition ... 276
3.2.5.4. Trends ... 279
3.2.5.5. Key Features ... 281
3.3. Fire and Fuels Management ... 282
3.3.1. Unplanned Fire (Wildfire) ... 284
3.3.1.1. Regional Context ... 284

3.3.1.2. Indicators ... 285
3.3.1.3. Current Condition ... 286
3.3.1.4. Trends ... 287
3.3.1.5. Key Features ... 287
3.3.2. Planned Fire (Prescribed Fire) ... 288
3.3.2.1. Regional Context ... 288
3.3.2.2. Indicators ... 289
3.3.2.3. Current Condition ... 289
3.3.2.4. Trends ... 289
3.3.2.5. Key Features ... 290
3.3.3. Stabilization and Rehabilitation ... 290
3.3.3.1. Regional Context ... 290
3.3.3.2. Indicators ... 291
3.3.3.3. Current Condition ... 291
3.3.3.4. Trends ... 291
3.3.3.5. Key Features ... 291
3.4. Biological Resources ... 292
3.4.1. Vegetation – Forests and Woodlands ... 292
3.4.1.1. Regional Context ... 292
3.4.1.2. Indicators ... 292
3.4.1.3. Current Condition ... 293
3.4.1.4. Trends ... 294
3.4.1.5. Key Features ... 294
3.4.2. Vegetation – Grassland and Shrubland Communities ... 295
3.4.2.1. Regional Context ... 295
3.4.2.2. Indicators ... 295
3.4.2.3. Current Condition ... 296
3.4.2.4. Trends ... 301
3.4.2.5. Key Features ... 301
3.4.3. Vegetation – Riparian/Wetland Resources ... 301
3.4.3.1. Regional Context ... 302
3.4.3.2. Indicators ... 302
3.4.3.3. Current Condition ... 303
3.4.3.4. Trends ... 306
3.4.3.5. Key Features ... 306
3.4.4. Invasive Species and Pest Management ... 306
3.4.4.1. Regional Context ... 306
3.4.4.2. Indicators ... 307
3.4.4.3. Current Condition ... 308
3.4.4.4. Trends ... 313
3.4.4.5. Key Features ... 313
3.4.5. Fish and Wildlife Resources – Fish ... 313
3.4.5.1. Regional Context ... 313
3.4.5.2. Indicators ... 315
3.4.5.3. Current Condition ... 316
3.4.5.4. Trends ... 326
3.4.5.5. Key Features ... 326
3.4.6. Fish and Wildlife Resources – Wildlife ... 327
3.4.6.1. Regional Context ... 327
3.4.6.2. Indicators ... 328
3.4.6.3. Current Condition ... 329

3.4.6.4. Trends ... 353
3.4.6.5. Key Features ... 354
3.4.7. Special Status Species – Plants ... 354
3.4.7.1. Regional Context ... 354
3.4.7.2. Indicators ... 354
3.4.7.3. Current Condition ... 354
3.4.7.4. Trends ... 357
3.4.7.5. Key Features ... 357
3.4.8. Special Status Species – Fish ... 358
3.4.8.1. Regional Context ... 358
3.4.8.2. Indicators ... 358
3.4.8.3. Current Condition ... 358
3.4.8.4. Trends ... 359
3.4.8.5. Key Features ... 359
3.4.9. Special Status Species – Wildlife ... 360
3.4.9.1. Regional Context ... 360
3.4.9.2. Indicators ... 362
3.4.9.3. Current Condition ... 362
3.4.9.4. Trends ... 386
3.4.9.5. Key Features ... 386
3.5. Heritage and Visual Resources ... 387
3.5.1. Cultural Resources ... 387
3.5.1.1. Regional Context ... 387
3.5.1.2. Indicators ... 392
3.5.1.3. Current Condition ... 392
3.5.1.4. Trends ... 398
3.5.1.5. Key Features ... 398
3.5.2. Paleontological Resources ... 400
3.5.2.1. Regional Context ... 400
3.5.2.2. Indicators ... 401
3.5.2.3. Current Condition ... 401
3.5.2.4. Trends ... 404
3.5.2.5. Key Features ... 405
3.5.3. Visual Resources ... 405
3.5.3.1. Regional Context ... 406
3.5.3.2. Indicators ... 406
3.5.3.3. Current Condition ... 406
3.5.3.4. Trends ... 408
3.5.3.5. Key Features ... 409
3.6. Land Resources ... 410
3.6.1. Forest Products ... 410
3.6.1.1. Regional Context ... 410
3.6.1.2. Indicators ... 410
3.6.1.3. Current Condition ... 411
3.6.1.4. Trends ... 411
3.6.1.5. Key Features ... 412
3.6.2. Lands and Realty ... 412
3.6.2.1. Regional Context ... 412
3.6.2.2. Indicators ... 413
3.6.2.3. Current Condition ... 413
3.6.2.4. Trends ... 418

3.6.2.5. Key Features ... 419
3.6.3. Renewable Energy ... 419
3.6.3.1. Regional Context ... 419
3.6.3.2. Indicators ... 420
3.6.3.3. Current Condition ... 420
3.6.3.4. Trends ... 420
3.6.3.5. Key Features ... 420
3.6.4. Rights-of-Way and Corridors ... 420
3.6.4.1. Regional Context ... 420
3.6.4.2. Indicators ... 421
3.6.4.3. Current Condition ... 421
3.6.4.4. Trends ... 422
3.6.4.5. Key Features ... 422
3.6.5. Travel and Transportation Management ... 422
3.6.5.1. Regional Context ... 422
3.6.5.2. Indicators ... 423
3.6.5.3. Current Condition ... 423
3.6.5.4. Trends ... 426
3.6.5.5. Key Features ... 426
3.6.6. Recreation ... 427
3.6.6.1. Regional Context ... 427
3.6.6.2. Indicators ... 428
3.6.6.3. Current Condition ... 428
3.6.6.4. Trends ... 432
3.6.6.5. Key Features ... 432
3.6.7. Lands with Wilderness Characteristics ... 436
3.6.7.1. Regional Context ... 436
3.6.7.2. Indicators ... 436
3.6.7.3. Current Condition ... 437
3.6.7.4. Trends ... 438
3.6.7.5. Key Features ... 439
3.6.8. Livestock Grazing Management ... 439
3.6.8.1. Regional Context ... 439
3.6.8.2. Indicators ... 440
3.6.8.3. Current Condition ... 441
3.6.8.4. Trends ... 443
3.6.8.5. Key Features ... 444
3.7. Special Designations ... 445
3.7.1. Areas of Critical Environmental Concern ... 445
3.7.1.1. Regional Context ... 445
3.7.1.2. Indicators ... 445
3.7.1.3. Current Condition ... 445
3.7.1.4. Trends ... 447
3.7.1.5. Key Features ... 447
3.7.2. Scenic or Back Country Byways ... 452
3.7.2.1. Regional Context ... 452
3.7.2.2. Indicators ... 452
3.7.2.3. Current Condition ... 452
3.7.2.4. Trends ... 453
3.7.2.5. Key Features ... 453
3.7.3. Wild and Scenic Rivers ... 454

3.7.3.1. Regional Context 454
3.7.3.2. Indicators 454
3.7.3.3. Current Condition 454
3.7.3.4. Trends 455
3.7.3.5. Key Features 455
3.7.4. Wilderness Study Areas 456
3.7.4.1. Regional Context 456
3.7.4.2. Indicators 456
3.7.4.3. Current Condition 456
3.7.4.4. Trends 457
3.7.4.5. Key Features 457
3.8. Socioeconomic Resources 458
3.8.1. Social Conditions 458
3.8.1.1. Current Condition 458
3.8.1.2. Trends 459
3.8.2. Economic Conditions 462
3.8.2.1. Current Conditions 462
3.8.3. Health and Safety 481
3.8.3.1. Regional Context 481
3.8.3.2. Indicators 482
3.8.3.3. Current Condition 482
3.8.3.4. Trends 484
3.8.3.5. Key Features 485
3.8.4. Environmental Justice 485
3.8.5. Tribal Treaty Rights 487

VOLUME 2 OF 3

4. Environmental Consequences 489

4.1. Physical Resources 497
4.1.1. Air Quality 497
4.1.1.1. Methods and Assumptions 498
4.1.1.2. Impacts Common to All Alternatives 503
4.1.1.3. Alternative A 504
4.1.1.4. Alternative B 516
4.1.1.5. Alternative C 521
4.1.1.6. Alternative D 526
4.1.1.7. Cumulative Impacts 531
4.1.1.8. Analysis of Greenhouse Gases 533
4.1.1.9. Conclusions 546
4.1.2. Geological Resources 551
4.1.3. Soil 551
4.1.3.1. Methods and Assumptions 551
4.1.3.2. Impacts Common to All Alternatives 553
4.1.3.3. Alternative A 559
4.1.3.4. Alternative B 566
4.1.3.5. Alternative C 571
4.1.3.6. Alternative D 575
4.1.3.7. Cumulative Impacts 581
4.1.3.8. Conclusion 581
4.1.4. Water Resources 583
4.1.4.1. Methods and Assumptions 584
4.1.4.2. Impacts Common to All Alternatives 586
4.1.4.3. Alternative A 594
4.1.4.4. Alternative B 600
4.1.4.5. Alternative C 606
4.1.4.6. Alternative D 613
4.1.4.7. Cumulative Impacts 617
4.1.4.8. Conclusion 618
4.1.5. Cave and Karst Resources 620
4.1.5.1. Methods and Assumptions 620
4.1.5.2. Impacts Common to All Alternatives 620
4.1.5.3. Alternative A 624
4.1.5.4. Alternative B 626
4.1.5.5. Alternative C 629
4.1.5.6. Alternative D 631
4.1.5.7. Cumulative Impacts 633
4.1.5.8. Conclusion 633
4.2. Mineral Resources 635
4.2.1. Locatable Minerals 635
4.2.1.1. Methods and Assumptions 636
4.2.1.2. Impacts Common to All Alternatives 638
4.2.1.3. Alternative A 644
4.2.1.4. Alternative B 649
4.2.1.5. Alternative C 655

4.2.1.6. Alternative D ... 659
4.2.1.7. Cumulative Impacts ... 665
4.2.1.8. Conclusion ... 668
4.2.2. Leasable Minerals – Coal ... 669
4.2.2.1. Methods and Assumptions ... 670
4.2.2.2. Impacts Common to All Alternatives ... 672
4.2.2.3. Alternative A ... 676
4.2.2.4. Alternative B ... 680
4.2.2.5. Alternative C ... 683
4.2.2.6. Alternative D ... 686
4.2.2.7. Cumulative Impacts ... 690
4.2.2.8. Conclusion ... 691
4.2.3. Leasable Minerals – Fluids ... 693
4.2.3.1. Methods and Assumptions ... 694
4.2.3.2. Impacts Common to All Alternatives ... 695
4.2.3.3. Alternative A ... 700
4.2.3.4. Alternative B ... 705
4.2.3.5. Alternative C ... 710
4.2.3.6. Alternative D ... 713
4.2.3.7. Cumulative Impacts ... 719
4.2.3.8. Conclusion ... 720
4.2.4. Leasable Minerals – Other ... 721
4.2.5. Salable Minerals ... 721
4.2.5.1. Methods and Assumptions ... 722
4.2.5.2. Impacts Common to All Alternatives ... 723
4.2.5.3. Alternative A ... 729
4.2.5.4. Alternative B ... 734
4.2.5.5. Alternative C ... 740
4.2.5.6. Alternative D ... 744
4.2.5.7. Cumulative Impacts ... 750
4.2.5.8. Conclusion ... 751
4.3. Fire and Fuels Management ... 752
4.3.1. Unplanned Fire (Wildfire) ... 752
4.3.1.1. Methods and Assumptions ... 753
4.3.1.2. Impacts Common to All Alternatives ... 753
4.3.1.3. Alternative A ... 758
4.3.1.4. Alternative B ... 761
4.3.1.5. Alternative C ... 764
4.3.1.6. Alternative D ... 767
4.3.1.7. Cumulative Impacts ... 771
4.3.1.8. Conclusion ... 771
4.3.2. Planned Fire (Prescribed Fire) ... 774
4.3.2.1. Methods and Assumptions ... 774
4.3.2.2. Impacts Common to All Alternatives ... 774
4.3.2.3. Alternative A ... 779
4.3.2.4. Alternative B ... 781
4.3.2.5. Alternative C ... 785
4.3.2.6. Alternative D ... 787
4.3.2.7. Cumulative Impacts ... 791
4.3.2.8. Conclusion ... 792
4.3.3. Stabilization and Rehabilitation ... 794

4.3.3.1. Methods and Assumptions ... 794
4.3.3.2. Impacts Common to All Alternatives ... 794
4.3.3.3. Alternative A ... 794
4.3.3.4. Alternative B ... 795
4.3.3.5. Alternative C ... 795
4.3.3.6. Alternative D ... 795
4.3.3.7. Cumulative Impacts ... 795
4.3.3.8. Conclusion ... 795
4.4. Biological Resources ... 796
4.4.1. Vegetation – Forests and Woodlands ... 796
4.4.1.1. Methods and Assumptions ... 796
4.4.1.2. Impacts Common to All Alternatives ... 796
4.4.1.3. Alternative A ... 801
4.4.1.4. Alternative B ... 806
4.4.1.5. Alternative C ... 810
4.4.1.6. Alternative D ... 814
4.4.1.7. Cumulative Impacts ... 819
4.4.1.8. Conclusion ... 819
4.4.2. Vegetation – Grassland and Shrubland Communities ... 821
4.4.2.1. Methods and Assumptions ... 822
4.4.2.2. Impacts Common to All Alternatives ... 823
4.4.2.3. Alternative A ... 830
4.4.2.4. Alternative B ... 838
4.4.2.5. Alternative C ... 846
4.4.2.6. Alternative D ... 853
4.4.2.7. Cumulative Impacts ... 861
4.4.2.8. Conclusion ... 861
4.4.3. Vegetation – Riparian/Wetland Resources ... 863
4.4.3.1. Methods and Assumptions ... 863
4.4.3.2. Impacts Common to All Alternatives ... 864
4.4.3.3. Alternative A ... 873
4.4.3.4. Alternative B ... 881
4.4.3.5. Alternative C ... 888
4.4.3.6. Alternative D ... 894
4.4.3.7. Cumulative Impacts ... 901
4.4.3.8. Conclusion ... 901
4.4.4. Invasive Species and Pest Management ... 903
4.4.4.1. Methods and Assumptions ... 903
4.4.4.2. Impacts Common to All Alternatives ... 904
4.4.4.3. Alternative A ... 909
4.4.4.4. Alternative B ... 917
4.4.4.5. Alternative C ... 924
4.4.4.6. Alternative D ... 930
4.4.4.7. Cumulative Impacts ... 937
4.4.4.8. Conclusion ... 938
4.4.5. Fish and Wildlife Resources – Fish ... 941
4.4.5.1. Methods and Assumptions ... 943
4.4.5.2. Impacts Common to All Alternatives ... 944
4.4.5.3. Alternative A ... 951
4.4.5.4. Alternative B ... 957
4.4.5.5. Alternative C ... 962

4.4.5.6. Alternative D ... 968
4.4.5.7. Cumulative Impacts ... 974
4.4.5.8. Conclusion ... 974
4.4.6. Fish and Wildlife Resources – Wildlife ... 976
4.4.6.1. Methods and Assumptions ... 977
4.4.6.2. Impacts Common to All Alternatives ... 978
4.4.6.3. Alternative A ... 992
4.4.6.4. Alternative B ... 1001
4.4.6.5. Alternative C ... 1011
4.4.6.6. Alternative D ... 1017
4.4.6.7. Cumulative Impacts ... 1024
4.4.6.8. Conclusion ... 1025
4.4.7. Special Status Species – Plants ... 1027
4.4.7.1. Methods and Assumptions ... 1027
4.4.7.2. Impacts Common to All Alternatives ... 1029
4.4.7.3. Alternative A ... 1037
4.4.7.4. Alternative B ... 1041
4.4.7.5. Alternative C ... 1048
4.4.7.6. Alternative D ... 1055
4.4.7.7. Cumulative Impacts ... 1060
4.4.7.8. Conclusion ... 1061
4.4.8. Special Status Species – Fish ... 1062
4.4.8.1. Methods and Assumptions ... 1063
4.4.8.2. Impacts Common to All Alternatives ... 1064
4.4.8.3. Alternative A ... 1071
4.4.8.4. Alternative B ... 1076
4.4.8.5. Alternative C ... 1081
4.4.8.6. Alternative D ... 1085
4.4.8.7. Cumulative Impacts ... 1090
4.4.8.8. Conclusion ... 1090
4.4.9. Special Status Species – Wildlife ... 1092
4.4.9.1. Methods and Assumptions ... 1093
4.4.9.2. Impacts Common to All Alternatives ... 1095
4.4.9.3. Alternative A ... 1102
4.4.9.4. Alternative B ... 1110
4.4.9.5. Alternative C ... 1119
4.4.9.6. Alternative D ... 1126
4.4.9.7. Cumulative Impacts ... 1137
4.4.9.8. Conclusion ... 1139
4.5. Heritage and Visual Resources ... 1140
4.5.1. Cultural Resources ... 1140
4.5.1.1. Methods and Assumptions ... 1141
4.5.1.2. Impacts Common to All Alternatives ... 1142
4.5.1.3. Alternative A ... 1146
4.5.1.4. Alternative B ... 1151
4.5.1.5. Alternative C ... 1156
4.5.1.6. Alternative D ... 1159
4.5.1.7. Cumulative Impacts ... 1163
4.5.1.8. Conclusion ... 1164
4.5.2. Paleontological Resources ... 1165
4.5.2.1. Methods and Assumptions ... 1166

4.5.2.2. Impacts Common to All Alternatives 1167
4.5.2.3. Alternative A 1170
4.5.2.4. Alternative B 1173
4.5.2.5. Alternative C 1175
4.5.2.6. Alternative D 1177
4.5.2.7. Cumulative Impacts 1179
4.5.2.8. Conclusion 1179
4.5.3. Visual Resources 1181
4.5.3.1. Methods and Assumptions 1181
4.5.3.2. Impacts Common to All Alternatives 1184
4.5.3.3. Alternative A 1190
4.5.3.4. Alternative B 1193
4.5.3.5. Alternative C 1196
4.5.3.6. Alternative D 1198
4.5.3.7. Cumulative Impacts 1202
4.5.3.8. Conclusion 1202
4.6. Land Resources 1204
4.6.1. Forest Products 1204
4.6.1.1. Methods and Assumptions 1204
4.6.1.2. Impacts Common to All Alternatives 1205
4.6.1.3. Alternative A 1209
4.6.1.4. Alternative B 1214
4.6.1.5. Alternative C 1218
4.6.1.6. Alternative D 1222
4.6.1.7. Cumulative Impacts 1226
4.6.1.8. Conclusion 1226
4.6.2. Lands and Realty 1228
4.6.2.1. Methods and Assumptions 1228
4.6.2.2. Impacts Common to All Alternatives 1229
4.6.2.3. Alternative A 1232
4.6.2.4. Alternative B 1233
4.6.2.5. Alternative C 1233
4.6.2.6. Alternative D 1234
4.6.2.7. Cumulative Impacts 1235
4.6.2.8. Conclusion 1235
4.6.3. Renewable Energy 1237
4.6.3.1. Methods and Assumptions 1237
4.6.3.2. Impacts Common to All Alternatives 1238
4.6.3.3. Alternative A 1242
4.6.3.4. Alternative B 1246
4.6.3.5. Alternative C 1249
4.6.3.6. Alternative D 1252
4.6.3.7. Cumulative Impacts 1256
4.6.3.8. Conclusion 1257
4.6.4. Rights-of-Way and Corridors 1258
4.6.4.1. Methods and Assumptions 1258
4.6.4.2. Impacts Common to All Alternatives 1259
4.6.4.3. Alternative A 1267
4.6.4.4. Alternative B 1273
4.6.4.5. Alternative C 1280
4.6.4.6. Alternative D 1285

4.6.4.7. Cumulative Impacts 1295
4.6.4.8. Conclusion 1296
4.6.5. Travel and Transportation Management 1298
4.6.5.1. Methods and Assumptions 1298
4.6.5.2. Impacts Common to All Alternatives 1301
4.6.5.3. Alternative A 1307
4.6.5.4. Alternative B 1309
4.6.5.5. Alternative C 1312
4.6.5.6. Alternative D 1314
4.6.5.7. Cumulative Impacts 1317
4.6.5.8. Conclusion 1318
4.6.6. Recreation 1320
4.6.6.1. Methods and Assumptions 1320
4.6.6.2. Impacts Common to All Alternatives 1322
4.6.6.3. Alternative A 1327
4.6.6.4. Alternative B 1332
4.6.6.5. Alternative C 1336
4.6.6.6. Alternative D 1340
4.6.6.7. Cumulative Impacts 1345
4.6.6.8. Conclusion 1346
4.6.7. Lands with Wilderness Characteristics 1348
4.6.7.1. Methods and Assumptions 1348
4.6.7.2. Impacts Common to All Alternatives 1348
4.6.7.3. Alternative A 1352
4.6.7.4. Alternative B 1354
4.6.7.5. Alternative C 1355
4.6.7.6. Alternative D 1356
4.6.7.7. Cumulative Impacts 1358
4.6.7.8. Conclusion 1358
4.6.8. Livestock Grazing Management 1360
4.6.8.1. Methods and Assumptions 1361
4.6.8.2. Impacts Common to All Alternatives 1362
4.6.8.3. Alternative A 1368
4.6.8.4. Alternative B 1372
4.6.8.5. Alternative C 1379
4.6.8.6. Alternative D 1383
4.6.8.7. Cumulative Impacts 1389
4.6.8.8. Conclusion 1389
4.7. Special Designations 1392
4.7.1. Areas of Critical Environmental Concern 1392
4.7.1.1. Methods and Assumptions 1392
4.7.1.2. Impacts Common to All Alternatives 1393
4.7.1.3. Alternative A 1399
4.7.1.4. Alternative B 1405
4.7.1.5. Alternative C 1409
4.7.1.6. Alternative D 1414
4.7.1.7. Cumulative Impacts 1420
4.7.1.8. Conclusion 1420
4.7.2. Scenic or Back Country Byways 1422
4.7.2.1. Methods and Assumptions 1422
4.7.2.2. Impacts Common to All Alternatives 1423

4.7.2.3. Alternative A ... 1426
4.7.2.4. Alternative B ... 1430
4.7.2.5. Alternative C ... 1433
4.7.2.6. Alternative D ... 1436
4.7.2.7. Cumulative Impacts ... 1439
4.7.2.8. Conclusion ... 1440
4.7.3. Wild and Scenic Rivers ... 1441
4.7.3.1. Methods and Assumptions ... 1442
4.7.3.2. Impacts Common to All Alternatives ... 1442
4.7.3.3. Alternative A ... 1442
4.7.3.4. Alternative B ... 1443
4.7.3.5. Alternative C ... 1443
4.7.3.6. Alternative D ... 1443
4.7.3.7. Cumulative Impacts ... 1443
4.7.3.8. Conclusion ... 1444
4.7.4. Wilderness Study Areas ... 1445
4.7.4.1. Methods and Assumptions ... 1446
4.7.4.2. Impacts Common to All Alternatives ... 1446
4.7.4.3. Alternative A ... 1447
4.7.4.4. Alternative B ... 1447
4.7.4.5. Alternative C ... 1447
4.7.4.6. Alternative D ... 1448
4.7.4.7. Cumulative Impacts ... 1448
4.7.4.8. Conclusion ... 1448
4.8. Socioeconomic Resources ... 1450
4.8.1. Social Conditions ... 1450
4.8.1.1. Methods and Assumptions ... 1450
4.8.1.2. Impacts Common to All Alternatives ... 1450
4.8.1.3. Alternative A ... 1451
4.8.1.4. Alternative B ... 1453
4.8.1.5. Alternative C ... 1455
4.8.1.6. Alternative D ... 1457
4.8.1.7. Cumulative Impacts ... 1458
4.8.1.8. Conclusion ... 1458
4.8.2. Economic Conditions ... 1459
4.8.2.1. Methods and Assumptions ... 1460
4.8.2.2. Impacts Common to All Alternatives ... 1461
4.8.2.3. Alternative A ... 1462
4.8.2.4. Alternative B ... 1465
4.8.2.5. Alternative C ... 1467
4.8.2.6. Alternative D ... 1468
4.8.2.7. Cumulative Impacts ... 1470
4.8.2.8. Conclusion ... 1473
4.8.3. Health and Safety ... 1475
4.8.3.1. Methods and Assumptions ... 1475
4.8.3.2. Impacts Common to All Alternatives ... 1475
4.8.3.3. Cumulative Impacts ... 1477
4.8.3.4. Conclusion ... 1477

4.8.4. Environmental Justice 1479
4.8.4.1. Methods and Assumptions 1479
4.8.4.2. Impacts Common to All Alternatives 1480
4.8.4.3. Conclusion 1480
4.8.5. Tribal Treaty Rights 1480
4.9. Irreversible and Irretrievable Commitment of Resources 1481
4.10. Unavoidable Adverse Impacts 1482

VOLUME 3 OF 3

5. References 1483

6. List of Preparers 1529

Glossary 1533

Appendix A. Legislation and Policy Pertaining to Specific Resources 1569

Appendix B. Implementation and Monitoring 1575

B.1. Implementation 1575
B.1.1. Implementation Working Group 1575
B.1.2. Implementation Tracking Database 1575
B.1.3. Monitoring Working Group 1575
B.1.4. Activity Plan Working Groups 1576
B.1.5. Public Involvement 1576
B.2. Monitoring and Evaluation 1576
B.2.1. Data Collection 1577
B.2.2. Data Analysis 1577
B.2.3. Decision 1577
B.2.4. Establishment of Monitoring Protocols 1577
B.2.5. Resource Monitoring Table 1578

Appendix C. Public Involvement, Consultation, and Coordination 1587

C.1. Introduction 1587
C.2. Public Involvement 1588
C.3. Consultation and Coordination 1590
C.4. Distribution List 1593
C.5. Consultation Letters 1597

Appendix D. Best Management Practices 1603

D.1. Bureau of Land Management (BLM) BMP Resources 1603
D.2. Other Agency BMP Resources 1605
D.3. Greater Sage-Grouse: Required Design Features and Best Management Practices 1606
D.3.1. Required Design Features 1606
D.3.2. Best Management Practices 1615

Appendix E. Livestock Grazing Allotments 1637

E.1. Livestock Grazing Allotments within the Buffalo Planning Area 1637
E.2. Standards and Guidelines Status 1648
E.3. Livestock Grazing Allotments Within Greater Sage-Grouse Habitat 1653

Appendix F. Maps 1667

Appendix G. Surface Disturbance and Reasonable Foreseeable Actions 1671

Appendix H. Fluid Mineral Lease Stipulations and Process for Exceptions, Modifications, and Waivers 1693

H.1. Introduction 1693
H.2. Lease Stipulations 1694
H.3. Processing Exceptions, Modifications, and Waivers 1734

Appendix I. Soils Exception Criteria 1739

Appendix J. Mitigation Guidelines for Surface-Disturbing and Disruptive Activities Wyoming Bureau of Land Management 1743

J.1. Introduction 1743
J.1.1. Purpose 1744
J.2. Mitigation Guidelines 1744
J.2.1. Surface Disturbance Mitigation Guideline 1744
J.2.2. Wildlife Mitigation Guideline 1745
J.2.3. Cultural Resource Mitigation Guideline 1745
J.2.4. Special Resource Mitigation Guideline 1746
J.2.5. No Surface Occupancy Guideline 1747

Appendix K. Biological Resources Support Documents 1749

K.1. Biological Resources of the Buffalo Planning Area 1749
K.2. Raptor Management 1793

Appendix L. Lands Identified for Disposal Through Exchange or Sale 1799

Appendix M. Technical Support Document for Air Quality 1827

M.1. Introduction 1827
M.2. Study Area 1827
M.3. Pollutants Addressed in the Analysis 1827
M.4. Thresholds of Significance 1829
M.5. Emissions Calculations 1834
M.6. Summary of Emissions for All BLM Activities 1841

Appendix N. Buffalo Air Resource Management Plan 2069

N.1. Introduction 2069
N.1.1. Purpose 2069
N.1.2. Authority for Air Resource Management 2069
N.1.3. Background 2070
N.1.4. Characterization of Air Resources in the Environmental Impact Statement 2075
N.2. Air Resource Management Plan 2076

N.2.1. Coal Lease by Application ... 2076
N.2.2. Mineral and Energy Development Authorizations ... 2077
N.2.3. Monitoring ... 2078
N.2.4. Modeling ... 2078
N.2.5. Mitigation ... 2079
N.2.6. Contingency Plans ... 2083

Appendix O. Reclamation Policy for the Buffalo Field Office ... 2085

Appendix P. Wyoming Standards for Healthy Rangelands ... 2091

P.1. Introduction ... 2091
P.2. Standards for Healthy Public Rangelands ... 2093
P.2.1. Standard #1 ... 2093
P.2.2. Standard #2 ... 2093
P.2.3. Standard #3 ... 2094
P.2.4. Standard #4 ... 2094
P.2.5. Standard #5 ... 2095
P.2.6. Standard #6 ... 2095
P.3. BLM Wyoming Guidelines for Livestock Grazing Management ... 2096
P.3.1. Definitions ... 2097

Appendix Q. Fire and Fuels Management ... 2101

Q.1. Emergency Stabilization and Rehabilitation ... 2101
Q.2. Fire Management Policy for Wilderness Study Areas ... 2106

Appendix R. Travel and Transportation Management ... 2109

Appendix S. Areas of Critical Environmental Concern ... 2121

S.1. Proposed Areas of Critical Environmental Concern Designated by Alternative D ... 2121
S.1.1. Fortification Creek Elk Area ... 2121
S.1.2. Pumpkin Buttes ... 2123
S.1.3. Welch Ranch ... 2125
S.2. Proposed Areas of Environmental Concern not Designated by Alternative D ... 2127
S.2.1. Burnt Hollow ... 2127
S.2.2. Cantonment Reno ... 2128
S.2.3. Dry Creek Petrified Tree ... 2129
S.2.4. Hole-in-the-Wall ... 2129
S.2.5. Sagebrush Ecosystems ... 2130

Appendix T. Recreation Management Areas ... 2135

T.1. Burnt Hollow Management Area ... 2135
T.2. Dry Creek Petrified Tree Management Area ... 2140
T.3. Hole-in-the-Wall Management Area ... 2144

T.4. Middle Fork Powder River Management Area 2148
T.5. Mosier Gulch Management Area 2153
T.6. Welch Ranch Management Area 2158
T.7. Weston Hills Management Area 2164
T.8. Extensive Recreation Management Areas 2168
T.8.1. Cabin Canyon Management Area 2168
T.8.2. Face of the Bighorns/North Fork Extensive Recreation Management Area 2169
T.8.3. Gardner Mountain Extensive Recreation Management Area 2171
T.8.4. Kaycee Stockrest Extensive Recreation Management Area 2172
T.8.5. North Bighorns Extensive Recreation Management Area 2173
T.8.6. Powder River Basin Extensive Recreation Management Area 2175
T.8.7. South Bighorns Extensive Recreation Management Area 2176
T.8.8. Walk-in Area Extensive Recreation Management Area 2177

Appendix U. Economic Impact Analysis Methodology 2179

U.1. The IMPLAN Model 2179
U.2. Oil and Gas 2179
U.3. Livestock Grazing 2184
U.4. Recreation 2186

List of Figures

Figure 1.1. Buffalo Field Office RMP Planning Area 3
Figure 1.2. BLM Planning Process 7
Figure 3.1. Representative Maximum Pollutant Concentrations in the Buffalo Planning Area as a Percentage of the NAAQS 194
Figure 3.2. Peak 24-Hour Average Particulate Matter Concentrations in Sheridan, Wyoming 201
Figure 3.3. Annual Average $PM_{2.5}$ for the Sheridan Highland Park Site 202
Figure 3.4. Fourth Highest Eight-Hour Average Ozone for the Thunder Basin Special Purpose Monitoring Site 203
Figure 3.5. Weekly SO_2 Concentrations ($\mu g/m^3$) – Buffalo WARMS Monitor 204
Figure 3.6. Weekly SO_4 Concentrations ($\mu g/m^3$) – Buffalo WARMS Monitor 205
Figure 3.7. Weekly NO_3 Concentrations ($\mu g/m^3$) – Buffalo WARMS Monitor 206
Figure 3.8. Weekly NH_4 Concentrations ($\mu g/m^3$) – Buffalo WARMS Monitor 207
Figure 3.9. Weekly SO_2 Concentrations ($\mu g/m^3$) – Sheridan WARMS Monitor 208
Figure 3.10. Weekly SO_4 Concentrations ($\mu g/m^3$) – Sheridan WARMS Monitor 209
Figure 3.11. Weekly NO_3 Concentrations ($\mu g/m^3$) – Sheridan WARMS Monitor 210
Figure 3.12. Weekly NH_4 Concentrations ($\mu g/m^3$) – Sheridan WARMS Monitor 211
Figure 3.13. Annual Visibility (SVR) for the Thunder Basin IMPROVE Site 213
Figure 3.14. Annual Visibility (SVR) for the Cloud Peak IMPROVE Site 214
Figure 3.15. Weekly Visibility (SVR) for the Thunder Basin IMPROVE Site 215
Figure 3.16. Weekly Visibility (SVR) for the Cloud Peak IMPROVE Site 216
Figure 3.17. Annual Visibility (SVR) for the Badlands National Park IMPROVE Site 217
Figure 3.18. Weekly Visibility (SVR) for the Badlands IMPROVE Site 218
Figure 3.19. Mean Annual Wet Deposition (kilogram per hectare per year) – Newcastle, Wyoming NADP Site 219
Figure 3.20. Recoverable Tons of Federal Leased vs. Tons of Federal Coal Mined since 1990, Campbell and Converse Counties, Wyoming 263
Figure 3.21. Travel and Tourism Spending in the Planning Area 464
Figure 3.22. Cost-of-Living Trends in Northeast Wyoming, the State of Wyoming, and the United States 475
Figure 3.23. Average Housing Price, 1998 through 2011 476
Figure 4.1. Contributions of Each Category to PM_{10} Emissions under Alternative A for 2015 510
Figure 4.2. Contributions of Each Category to $PM_{2.5}$ Emissions under Alternative A for 2015 511
Figure 4.3. Contributions of Each Category to NO_X Emissions under Alternative A for 2015 512
Figure 4.4. Contributions of Each Category to SO_2 Emissions under Alternative A for 2015 513
Figure 4.5. Contributions of Each Category to CO Emissions under Alternative A for 2015 514
Figure 4.6. Contributions of Each Category to VOC Emissions under Alternative A for 2015 515
Figure 4.7. Contributions of Each Category to HAPs Emissions under Alternative A for 2015 516
Figure 4.8. Emission Estimates for 2015 from Activities within the Buffalo Planning Area 548
Figure 4.9. Emission Estimates for 2024 from Activities within the Buffalo Planning Area 549
Figure N.1. Representative Maximum Pollutant Concentrations in the Planning Area as Percentage of NAAQS 2073

List of Tables

Table 1.1. Acreage of Surface Lands Within Each Jurisdiction of the Buffalo Planning Area 2
Table 1.2. Acreage of BLM-administered Mineral Estate Within Each County in the Planning Area 2
Table 1.3. Related Plans 15
Table 1.4. Meetings with Cooperating Agencies 17
Table 2.1. Alternatives Development Workshops 24
Table 2.2. Comparative Summary of Acreage Affected (and associated fluid mineral lease stipulation) by Proposed Land Use Decisions in the Buffalo Planning Area 38
Table 2.3. Comparative Summary of Proposed Areas of Critical Environmental Concern 41
Table 2.4. 1000 PHYSICAL RESOURCES (PR) – AIR QUALITY (AQ) 58
Table 2.5. 1000 PHYSICAL RESOURCES (PR) – SOIL 59
Table 2.6. 1000 PHYSICAL RESOURCES (PR) – WATER 62
Table 2.7. 1000 PHYSICAL RESOURCES (PR) – CAVE AND KARST 65
Table 2.8. 2000 MINERAL RESOURCES (MR) – LOCATABLE MINERALS 67
Table 2.9. 2000 MINERAL RESOURCES (MR) – LEASABLE – COAL 68
Table 2.10. 2000 MINERAL RESOURCES (MR) – LEASABLE – FLUID (Oil/Gas and Geothermal) 69
Table 2.11. 2000 MINERAL RESOURCES (MR) – LEASABLES – OTHER LEASABLE MINERALS 72
Table 2.12. 2000 MINERAL RESOURCES (MR) – SALABLE MINERALS 73
Table 2.13. 3000 FIRE AND FUELS MANAGEMENT (FM) 75
Table 2.14. 4000 BIOLOGICAL RESOURCES (BR) – VEGETATION 80
Table 2.15. 4000 BIOLOGICAL RESOURCES (BR) – VEGETATION – FORESTS AND WOODLANDS 81
Table 2.16. 4000 BIOLOGICAL RESOURCES (BR) – VEGETATION – GRASSLAND AND SHRUBLAND COMMUNITIES 83
Table 2.17. 4000 BIOLOGICAL RESOURCES (BR) – VEGETATION – RIPARIAN/WETLAND RESOURCES 84
Table 2.18. 4000 BIOLOGICAL RESOURCES (BR) – INVASIVE SPECIES AND PEST MANAGEMENT 86
Table 2.19. 4000 BIOLOGICAL RESOURCES (BR) – FISH & WILDLIFE RESOURCES 88
Table 2.20. 4000 BIOLOGICAL RESOURCES (BR) – SPECIAL STATUS SPECIES 101
Table 2.21. 5000 HERITAGE AND VISUAL RESOURCES (HR) – CULTURAL RESOURCES 133
Table 2.22. 5000 HERITAGE AND VISUAL RESOURCES (HR) – PALEONTOLOGICAL RESOURCES 138
Table 2.23. 5000 HERITAGE AND VISUAL RESOURCES (HR) – VISUAL RESOURCES 140
Table 2.24. 6000 LAND RESOURCES (LR) – FOREST PRODUCTS 143
Table 2.25. 6000 LAND RESOURCES (LR) – LANDS AND REALTY 145
Table 2.26. 6000 LAND RESOURCES (LR) – RENEWABLE ENERGY 148
Table 2.27. 6000 LAND RESOURCES (LR) – RIGHTS-OF-WAY AND CORRIDORS 150
Table 2.28. 6000 LAND RESOURCES (LR) – TRAVEL AND TRANSPORTATION MANAGEMENT 153
Table 2.29. 6000 LAND RESOURCES (LR) – RECREATION 157

Table 2.30. 6000 LAND RESOURCES (LR) – LANDS WITH WILDERNESS CHARACTERISTICS 164
Table 2.31. 6000 LAND RESOURCES (LR) – LIVESTOCK GRAZING MANAGEMENT 166
Table 2.32. 7000 SPECIAL DESIGNATIONS (SD) – AREAS OF CRITICAL ENVIRONMENTAL CONCERN 171
Table 2.33. 7000 SPECIAL DESIGNATIONS (SD) – SCENIC OR NATIONAL BACK COUNTRY BYWAYS 173
Table 2.34. 7000 SPECIAL DESIGNATIONS (SD) – WILD AND SCENIC RIVERS 174
Table 2.35. 7000 SPECIAL DESIGNATIONS (SD) – WILDERNESS STUDY AREAS 175
Table 2.36. 8000 SOCIOECONOMIC RESOURCES (SR) – SOCIAL AND ECONOMIC 177
Table 2.37. 8000 SOCIOECONOMIC RESOURCES (SR) – HEALTH AND SAFETY 179
Table 2.38. Summary of Environmental Consequences by Alternative 181
Table 3.1. Air Quality Monitoring Sites in and Near the Buffalo Planning Area 190
Table 3.2. Climate Information for the Buffalo Planning Area 192
Table 3.3. Applicable National and State Primary Air Quality Standards for Criteria Pollutants and Recent Representative Concentrations for the Planning Area 192
Table 3.4. Class I and Class II Areas in or near the Buffalo Planning Area 211
Table 3.5. Some Important Mineral-bearing Formations in the Buffalo Planning Area 222
Table 3.6. Surface Water Classes and Uses in Wyoming 231
Table 3.7. Coalbed Natural Gas Water Production Summary in the Buffalo Planning Area 232
Table 3.8. Water Use Summary in the Buffalo Planning Area 235
Table 3.9. Uses of Active Well Permits by County 235
Table 3.10. WSEO-Permitted Non-CBNG Water Wells in the Planning Area by Aquifer 236
Table 3.11. Active Mining Claims in the Buffalo Planning Area 248
Table 3.12. Annual Production of Bentonite and Uranium in the Buffalo Planning Area 249
Table 3.13. Current Authorized and Pending Bentonite Plans of Operation in the Buffalo Planning Area 252
Table 3.14. Current Authorized and Pending Uranium Plans of Operation (all ISR operations) in the Buffalo Planning Area 255
Table 3.15. Status and Ownership of Wyoming Powder River Basin Coal Mines 260
Table 3.16. Successful Lease Sales 265
Table 3.17. Lease by Application Pending, Powder River Basin, Wyoming 266
Table 3.18. Coal Exploration Licenses 266
Table 3.19. Number of Oil and Gas Leases by County in the Planning Area 271
Table 3.20. Well Statistics for Campbell, Johnson, and Sheridan Counties, November 2008 272
Table 3.21. Current Authorized Salable Mineral (Mineral Materials) Disposals in the Buffalo Planning Area 278
Table 3.22. Authorized Volumes for Salable Mineral (Mineral Materials) Disposals in the Buffalo Planning Area 280
Table 3.23. Annual Average Acres of Planned and Unplanned Fires in Different Vegetative Types in the Planning Area from 1990 through 2007 283
Table 3.24. Fire Regime Condition Class System 285
Table 3.25. Fire Regime Condition Class Assessment for the Buffalo Field Office 286
Table 3.26. Distribution of Forests and Woodlands on BLM-Administered Land in the Buffalo Planning Area 292
Table 3.27. Acres of Dominant Tree Species in the Planning Area 294

Table 3.28. Distribution of Grasslands/Shrublands on BLM-Administered Land in the Buffalo Planning Area 297
Table 3.29. Wetland Inventory Data, 2007 305
Table 3.30. Wyoming Weed and Pest Control Act Designated List 307
Table 3.31. Declared List of Weeds and Pests by County in the Planning Area for 2012 307
Table 3.32. Treatment of Invasive Plant Species in the Planning Area 310
Table 3.33. Fish Species Known to Occur and Their Preferred Habitat in the Planning Area 314
Table 3.34. Basins and Corresponding Sub-Basins 316
Table 3.35. Special Status Plant Species Potentially Present in the Planning Area 355
Table 3.36. Special Status Fish Species in the Planning Area 358
Table 3.37. Special Status Wildlife in the Planning Area 362
Table 3.38. Summary of Prehistoric Sites by Cultural Period and Subregion in the Planning Area 393
Table 3.39. Subregions and Overall Cultural Resource Statistics of the Buffalo Planning Area 394
Table 3.40. Formations Containing Very High Fossil Yield Classifications 402
Table 3.41. Visual Resource Management Classes 408
Table 3.42. Existing Withdrawals and Classifications in the Planning Area 417
Table 3.43. Existing ROW in the Buffalo Field Office Planning Area 421
Table 3.44. 2010 Motorized and Nonmotorized Activities and Number of Participants in the Buffalo Planning Area, Wyoming 424
Table 3.45. OHV-Use Designations in the Planning Area 425
Table 3.46. Special Recreation Management Area Equivalents in the Planning Area 431
Table 3.47. Summary of Livestock Type and Authorizations in the Buffalo Planning Area 441
Table 3.48. Activity Plans – Allotment Management Plans and Management Agreements 442
Table 3.49. Range Improvement Projects Implemented in the Buffalo Planning Area, Wyoming Since 1998 443
Table 3.50. Animal Unit Months Authorized in the Planning Area 444
Table 3.51. Evaluation of ACEC Relevance and Importance Criteria 447
Table 3.52. Middle Fork Powder River Wild and Scenic River Characteristics 455
Table 3.53. Population Change by County, 1970-2010 458
Table 3.54. Populations of Towns in the Planning Area in 2000 and 2010 458
Table 3.55. Age Distribution by County, 2010 459
Table 3.56. Educational Attainment in 2010 459
Table 3.57. Population Forecasts through 2030 461
Table 3.58. Estimated Mineral Production and Value by County in the Buffalo Planning Area in 2010 463
Table 3.59. Farm Income in 2011 466
Table 3.60. Personal Income and Earnings by Place of Work, 2011 468
Table 3.61. Earnings and Employment for Mining Activities (2010) 470
Table 3.62. Employment by Sector, 2011 472
Table 3.63. Average and Median Income; Average Earnings Per Job 474
Table 3.64. Unemployment Rate in 2008 through April 2011 (Percent) 474
Table 3.65. Average Housing Price, 1998-2011 476
Table 3.66. Rental Housing Availability (Percent) 477
Table 3.67. Poor-Rich Ratio, Employment Specialization, and Residential Adjustment 478

Table 3.68. Estimated State Severance Tax Collections in the Planning Area Counties for Production Year 2010 478
Table 3.69. Local and State Assessed Property Valuation, 2011 479
Table 3.70. State and Local Sales Tax Collections by Sector, 2011 479
Table 3.71. Retail, Accommodation, and Food Sales: State and Local Sales Tax Collections, 2011 480
Table 3.72. Local and State Tax Receipts Due to Travel and Tourism in Wyoming, 2011 ($ millions) 481
Table 3.73. Activities and Associated Hazardous Materials 483
Table 3.74. Minority and Low-Income Populations in Planning Area Counties, Wyoming, and the United States in 2000 and 2011 485
Table 3.75. Minority and Low-Income Populations in Planning Area Towns, Wyoming, and the United States in 2000 and 2011 486
Table 3.76. Racial and Ethnic Groups in Buffalo Planning Area Counties and Wyoming, 2011 486
Table 4.1. Surface Estate and Associated BLM-Administered Fluid Mineral Estate in the Buffalo Field Office Planning Area 496
Table 4.2. Total Projected Surface Disturbance from Reasonable Foreseeable Actions in the Buffalo Planning Area 497
Table 4.3. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Base Year 2005 501
Table 4.4. Estimated Annual Emissions (tons/year) for Activities within the Buffalo Planning Area – Alternative A – 2015 505
Table 4.5. Estimated Annual Emissions (tons/year) for Activities within the Buffalo Planning Area – Alternative A – 2024 507
Table 4.6. Estimated Annual Emissions (tons/year) for Activities within the Buffalo Planning Area – Alternative B – 2015 517
Table 4.7. Estimated Annual Emissions (tons/year) for Activities within the Buffalo Planning Area – Alternative B – 2024 519
Table 4.8. Estimated Annual Emissions (tons/year) for Activities within the Buffalo Planning Area – Alternative C – 2015 522
Table 4.9. Estimated Annual Emissions (tons/year) for Activities within the Buffalo Planning Area – Alternative C – 2024 524
Table 4.10. Estimated Annual Emissions (tons/year) for Activities within the Buffalo Planning Area – Alternative D – 2015 527
Table 4.11. Estimated Annual Emissions (tons/year) for Activities within the Buffalo Planning Area – Alternative D – 2024 529
Table 4.12. Comparison of Emissions from BLM and Non-BLM Activities in the Buffalo Planning Area to Cumulative Annual Statewide Emissions for 2005 532
Table 4.13. Estimated Annual Greenhouse Gas Emissions (tons per year) Summary for Activities within the Buffalo Planning Area 534
Table 4.14. Buffalo Planning Area GHG Emissions as Percentage of Wyoming Statewide GHG Emissions 535
Table 4.15. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Base Year 2005 535
Table 4.16. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Alternative A – 2015 537
Table 4.17. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Alternative A – 2024 538

Table 4.18. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Alternative B – 2015 539
Table 4.19. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Alternative B – 2024 540
Table 4.20. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Alternative C – 2015 542
Table 4.21. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Alternative C – 2024 543
Table 4.22. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Alternative D – 2015 544
Table 4.23. Estimated Annual Emissions (tons/year) for Activities in the Buffalo Planning Area – Alternative D – 2024 545
Table 4.24. Estimated Annual Emissions Summary (tons/year) for Activities within the Buffalo Planning Area 547
Table 4.25. Summary of Impacts to Air Quality Resources 549
Table 4.26. Summary of Impacts to Soil Resources 582
Table 4.27. Summary of Impacts to Water Resources 618
Table 4.28. Summary of Impacts to Cave and Karst Resources 634
Table 4.29. Current Areas Withdrawn or Restricted from Mineral Entry under All Alternatives 666
Table 4.30. Areas Recommended for Withdrawal from Mineral Entry under All Alternatives 666
Table 4.31. Summary of Impacts to Locatable Mineral Development 668
Table 4.32. Coal Resources Affected 671
Table 4.33. Cumulative Disturbance and Reclamation from Coal Mining at Existing Mines under All Alternatives 691
Table 4.34. Summary of Impacts to Coal Resource Development 692
Table 4.35. Summary of Impacts to Fluid Mineral Development 720
Table 4.36. Summary of Impacts to Salable Mineral Development 751
Table 4.37. Summary of Impacts to Management of Unplanned Fire 772
Table 4.38. Summary of Impacts to Planned Fire 792
Table 4.39. Summary of Impacts to Forests and Woodlands 820
Table 4.40. Summary of Impacts to Grassland and Shrublands 861
Table 4.41. Summary of Impacts to Riparian/Wetland Resources 902
Table 4.42. Summary of Impacts to Invasive Species and Pest Management 939
Table 4.43. Summary of Impacts to Fish Resources 974
Table 4.44. Important Wildlife Habitats in Wilderness Study Areas 1001
Table 4.45. Acres of Habitats Important to Wildlife in the Planning Area on BLM and Split Estate Lands 1002
Table 4.46. Habitats Important to Wildlife in ACECs under Alternative B 1009
Table 4.47. Habitats Important to Wildlife in Wilderness Study Areas 1010
Table 4.48. Habitats Important to Wildlife that Overlap Heritage Resources 1022
Table 4.49. Habitats Important to Wildlife that Overlap Proposed Special Recreation Management Areas 1023
Table 4.50. Summary of Impacts to Wildlife 1025
Table 4.51. Summary of Impacts to Special Status Species – Plants 1061
Table 4.52. Summary of Impacts to Special Status Species – Fish 1090

Table 4.53. Habitats Important to Special Status Wildlife Species on Each of the BLM-administered Land Types 1111
Table 4.54. Acres within the Planning Area that are Important to Special Status Wildlife Species and Overlap with Areas Important To Wildlife 1132
Table 4.55. Acres within the Planning Area that are Important to Special Status Wildlife Species and Overlap with Cultural and Paleontological Resource Restrictions 1134
Table 4.56. Acres within the Planning Area that are Important to Special Status Wildlife Species and Overlap with Special Designations and Controlled Surface Use Areas 1136
Table 4.57. Summary of Impacts to Special Status Wildlife Species 1139
Table 4.58. Summary of Impacts to Cultural Resources 1164
Table 4.59. Summary of Impacts to Paleontological Resources 1179
Table 4.60. Estimated BLM Surface Acreage of Visual Resource Management Classes by Alternative 1189
Table 4.61. Estimated BLM-Administered Mineral Acreage of Visual Resource Management Classes by Alternative 1190
Table 4.62. Summary of Impacts to Visual Resources 1203
Table 4.63. Summary of Impacts to the Forest Products Program 1227
Table 4.64. Summary of Impacts to the Lands and Realty Program 1235
Table 4.65. Summary of Impacts to Renewable-Energy Development 1257
Table 4.66. Summary of Impacts to Rights-of-Way and Corridors Program 1296
Table 4.67. Estimated Acreage of Travel Designations by Alternative 1307
Table 4.68. Summary of Impacts to Travel and Transportation Management 1318
Table 4.69. Proposed SRMAs by Alternative 1327
Table 4.70. Proposed ERMAs by Alternative 1327
Table 4.71. Summary of Impacts to Recreation 1346
Table 4.72. Summary of Impacts to Wilderness Characteristics 1358
Table 4.73. Summary of Impacts to Livestock Grazing Management 1390
Table 4.74. Proposed ACEC BLM Surface Acres 1392
Table 4.75. Summary of Impacts to Areas of Critical Environmental Concern 1420
Table 4.76. Summary of Impacts to Scenic or Back Country Byways 1440
Table 4.77. Summary of Ability to Protect Characteristics of Wild and Scenic Rivers 1444
Table 4.78. Summary of Impacts to Wild and Scenic Rivers 1444
Table 4.79. Summary of Impacts to Wilderness Study Areas 1448
Table 4.80. Overall Impacts on Social Conditions by Alternative 1459
Table 4.81. Average Annual Impacts on Earnings and Output, by Sector and Alternative for the Planning Area 1463
Table 4.82. Average Annual Impacts on Employment, by Sector and Alternative for the Planning Area 1464
Table 4.83. Estimated Oil and Gas Tax Revenues by Alternative for the Planning Area (millions of 2011 $) 1464
Table 4.84. Cumulative (including State and Private) Impacts of Oil and Gas Development over the Life of the Plan in the Planning Area 1471
Table 4.85. Reasonable Foreseeable Development Well Number Projections 1472
Table 4.86. Comparison of Projected Earnings and Employment to 2011 Levels 1474
Table 4.87. Summary of Impacts to Health and Safety 1477
Table 6.1. List of Preparers 1531

Table B.1. Resource Monitoring Table 1579
Table C.1. Public Involvement, Coordination, and Consultation Events 1587
Table E.1. Current Livestock Grazing Allotment Information 1637
Table E.2. Summary of Standards and Guidelines Evaluations 1648
Table E.3. Grazing Allotments within 4.0 Miles of Occupied Greater Sage-Grouse Leks 1653
Table G.1. RFA-1A Reasonable Foreseeable Development Assumptions: Oil and Gas 1672
Table G.2. RFA-1B Reasonable Foreseeable Development Assumptions: Other Resource Uses 1676
Table G.3. RFA-2 Summary of Projected Acres of Surface Disturbance by Resource 1680
Table H.1. Lease Stipulations and Exception, Modification, and Waiver Criteria 1694
Table K.1. Common and Scientific Names of Plant and Wildlife Species Identified in the Buffalo Resource Management Plan and Environmental Impact Statement 1749
Table K.2. Special Status Plant Species Potentially Occurring in the Planning Area 1755
Table K.3. Fish Species of Importance within the Planning Area 1758
Table K.4. Wildlife Species of Importance Potentially Occurring within the Planning Area 1761
Table K.5. Wyoming Ecological Services Field Office's Recommended Spatial and Seasonal Buffers for Breeding Raptors 1796
Table M.1. Prevention of Significant Deterioration Increments 1830
Table M.2. Number of Existing and Proposed Wells by Alternative 1836
Table M.3. Estimated Emissions Rates for Hydrocarbon Species from Produced Water Evaporation Ponds 1837
Table M.4. Basis for Emissions Calculations for Land Resource Projects in the Buffalo Planning Area 1840
Table M.5. Total Annual Emissions from Natural Gas Wells - Year 2005 - Federal 1842
Table M.6. Total Annual Emissions from Natural Gas Wells - Year 2015 - Alternative A - Federal 1845
Table M.7. Total Annual Emissions from Natural Gas Wells - Year 2024 - Alternative A - Federal 1848
Table M.8. Total Annual Emissions from Natural Gas Wells - Year 2015 - Alternative B - Federal 1851
Table M.9. Total Annual Emissions from Natural Gas Wells - Year 2024 - Alternative B - Federal 1854
Table M.10. Total Annual Emissions from Natural Gas Wells - Year 2015 - Alternative C - Federal 1857
Table M.11. Total Annual Emissions from Natural Gas Wells - Year 2024 - Alternative C - Federal 1860
Table M.12. Total Annual Emissions from Natural Gas Wells - Year 2015 - Alternative D - Federal 1863
Table M.13. Total Annual Emissions from Natural Gas Wells - Year 2024 - Alternative D - Federal 1866
Table M.14. Total Annual Emissions from Natural Gas Wells - Year 2005 - Cumulative Effects 1869
Table M.15. Total Annual Emissions from Natural Gas Wells - Year 2015 - Alternative A - Cumulative 1872
Table M.16. Total Annual Emissions from Natural Gas Wells - Year 2024 - Alternative A - Cumulative 1875
Table M.17. Total Annual Emissions from Natural Gas Wells - Year 2015 - Alternative B 1878
Table M.18. Total Annual Emissions from Natural Gas Wells - Year 2024 - Alternative B - Cumulative 1881
Table M.19. Total Annual Emissions from Natural Gas Wells - Year 2015 - Alternative C - Cumulative 1884
Table M.20. Total Annual Emissions from Natural Gas Wells - Year 2024 - Alternative C - Cumulative 1887
Table M.21. Total Annual Emissions from Natural Gas Wells - Year 2015 - Alternative D - Cumulative 1890

Table M.22. Total Annual Emissions from Natural Gas Wells - Year 2024 - Alternative D - Cumulative 1893
Table M.23. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2005 - Federal 1896
Table M.24. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2015 - Alternative A - Federal 1899
Table M.25. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2024 - Alternative A - Federal 1902
Table M.26. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2015 - Alternative B - Federal 1905
Table M.27. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2024 - Alternative B - Federal 1908
Table M.28. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2015 - Alternative C - Federal 1911
Table M.29. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2024 - Alternative C - Federal 1914
Table M.30. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2015 - Alternative D - Federal 1917
Table M.31. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2024 - Alternative D - Federal 1920
Table M.32. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2005 - Federal 1923
Table M.33. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2015 - Alternative A - Cumulative 1926
Table M.34. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2024 - Alternative A - Cumulative 1929
Table M.35. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2015 - Alternative B - Cumulative 1932
Table M.36. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2024 - Alternative B - Cumulative 1935
Table M.37. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2015 - Alternative C - Cumulative 1938
Table M.38. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2024 - Alternative C - Cumulative 1941
Table M.39. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2015 - Alternative D - Cumulative 1944
Table M.40. Total Annual Emissions from Coalbed Natural Gas Wells - Year 2024 - Alternative D - Cumulative 1947
Table M.41. Total Annual Emissions from Oil Wells - Year 2005 - Federal 1950
Table M.42. Total Annual Emissions from Oil Wells - Year 2015 - Alternative A - Federal 1952
Table M.43. Total Annual Emissions from Oil Wells - Year 2024 - Alternative A - Federal 1954
Table M.44. Total Annual Emissions from Oil Wells - Year 2015 - Alternative B - Federal 1956
Table M.45. Total Annual Emissions from Oil Wells - Year 2024 - Alternative B - Federal 1958
Table M.46. Total Annual Emissions from Oil Wells - Year 2015 - Alternative C - Federal 1960
Table M.47. Total Annual Emissions from Oil Wells - Year 2024 - Alternative C - Federal 1962
Table M.48. Total Annual Emissions from Oil Wells - Year 2015 - Alternative D - Federal 1964
Table M.49. Total Annual Emissions from Oil Wells - Year 2024 - Alternative D - Federal 1966
Table M.50. Total Annual Emissions from Oil Wells - Year 2005 - Cumulative 1968
Table M.51. Total Annual Emissions from Oil Wells - Year 2015 - Alternative A - Cumulative 1970

Table M.52. Total Annual Emissions from Oil Wells - Year 2024 - Alternative A - Cumulative.....1972
Table M.53. Total Annual Emissions from Oil Wells - Year 2015 - Alternative B - Cumulative.....1974
Table M.54. Total Annual Emissions from Oil Wells - Year 2024 - Alternative B - Cumulative.....1976
Table M.55. Total Annual Emissions from Oil Wells - Year 2015 - Alternative C - Cumulative.....1978
Table M.56. Total Annual Emissions from Oil Wells - Year 2024 - Alternative C - Cumulative.....1980
Table M.57. Total Annual Emissions from Oil Wells - Year 2015 - Alternative D - Cumulative.....1982
Table M.58. Total Annual Emissions from Oil Wells - Year 2024 - Alternative D - Cumulative.....1984
Table M.59. Projected Emissions from Coal Production (tpy) for Campbell and Sheridan Counties....1986
Table M.60. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2005.....1987
Table M.61. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2015 - Alternative A.....1988
Table M.62. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2024 - Alternative A.....1989
Table M.63. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2015 - Alternative B.....1990
Table M.64. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2024 - Alternative B.....1991
Table M.65. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2015 - Alternative C.....1992
Table M.66. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2024 - Alternative C.....1993
Table M.67. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2015 - Alternative D.....1994
Table M.68. Annual Emissions Estimation for Bentonite - Locatable Minerals Equipment Usage - Year 2024 - Alternative D.....1995
Table M.69. Total Annual Emissions from Uranium ISL - Year 2005.....1996
Table M.70. Total Annual Emissions from Uranium ISL - Year 2015 - Alternative A.....1998
Table M.71. Total Annual Emissions from Uranium ISL - Year 2024 - Alternative A.....2000
Table M.72. Total Annual Emissions from Uranium ISL - Year 2015 - Alternative B.....2002
Table M.73. Total Annual Emissions from Uranium ISL - Year 2024 - Alternative B.....2004
Table M.74. Total Annual Emissions from Uranium ISL - Year 2015 - Alternative C.....2006
Table M.75. Total Annual Emissions from Uranium ISL - Year 2024 - Alternative C.....2008
Table M.76. Total Annual Emissions from Uranium ISL - Year 2015 - Alternative D.....2010
Table M.77. Total Annual Emissions from Uranium ISL - Year 2024 - Alternative D.....2012
Table M.78. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2005.....2014
Table M.79. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2015 - Alternative A.....2015
Table M.80. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2024 - Alternative A.....2016
Table M.81. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2015 - Alternative B.....2017
Table M.82. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2024 - Alternative B.....2018
Table M.83. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2015 - Alternative C.....2019

Table M.84. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2024 - Alternative C 2020
Table M.85. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2015 - Alternative D 2021
Table M.86. Annual Emissions Estimation for Locatable Minerals Equipment Usage - Year 2024 - Alternative D 2022
Table M.87. Total Annual Emissions from Fire Management Projects - Year 2005 2023
Table M.88. Total Annual Emissions from Fire Management Projects - Year 2015 - Alternative A 2024
Table M.89. Total Annual Emissions from Fire Management Projects - Year 2024 - Alternative A 2025
Table M.90. Total Annual Emissions from Fire Management Projects - Year 2015 - Alternative B 2026
Table M.91. Total Annual Emissions from Fire Management Projects - Year 2024 - Alternative B 2027
Table M.92. Total Annual Emissions from Fire Management Projects - Year 2015 - Alternative C 2028
Table M.93. Total Annual Emissions from Fire Management Projects - Year 2024 - Alternative C 2029
Table M.94. Total Annual Emissions from Fire Management Projects - Year 2015 - Alternative D 2030
Table M.95. Total Annual Emissions from Fire Management Projects - Year 2024 - Alternative D 2031
Table M.96. Total Annual Emissions from Forest and Woodlands Projects - Year 2005 2032
Table M.97. Total Annual Emissions from Forest and Woodlands Projects - Year 2015 - Alternative A 2033
Table M.98. Total Annual Emissions from Forest and Woodlands Projects - Year 2024 - Alternative A 2034
Table M.99. Total Annual Emissions from Forest and Woodlands Projects - Year 2015 - Alternative B 2035
Table M.100. Total Annual Emissions from Forest and Woodlands Projects - Year 2024 - Alternative B 2036
Table M.101. Total Annual Emissions from Forest and Woodlands Projects - Year 2015 - Alternative C 2037
Table M.102. Total Annual Emissions from Forest and Woodlands Projects - Year 2024 - Alternative C 2038
Table M.103. Total Annual Emissions from Forest and Woodlands Projects - Year 2015 - Alternative D 2039
Table M.104. Total Annual Emissions from Forest and Woodlands Projects - Year 2024 - Alternative D 2040
Table M.105. Total Annual Emissions from Renewable Energy Development - Year 2005 2041
Table M.106. Total Annual Emissions from Renewable Energy Development - Year 2015 - Alternative A 2042
Table M.107. Total Annual Emissions from Renewable Energy Development - Year 2024 - Alternative A 2043
Table M.108. Total Annual Emissions from Renewable Energy Development - Year 2015 - Alternative B 2044
Table M.109. Total Annual Emissions from Renewable Energy Development - Year 2024 - Alternative B 2045
Table M.110. Total Annual Emissions from Renewable Energy Development - Year 2015 - Alternative C 2046
Table M.111. Total Annual Emissions from Renewable Energy Development - Year 2024 - Alternative C 2047
Table M.112. Total Annual Emissions from Renewable Energy Development - Year 2015 - Alternative D 2048

Table M.113. Total Annual Emissions from Renewable Energy Development - Year 2024 - Alternative D 2049
Table M.114. Total Annual Emissions from Road Maintenance Projects - Year 2005 2050
Table M.115. Total Annual Emissions from Road Maintenance Projects - Year 2015 - Alternative A ... 2051
Table M.116. Total Annual Emissions from Road Maintenance Projects - Year 2024 - Alternative A ... 2052
Table M.117. Total Annual Emissions from Road Maintenance Projects - Year 2015 - Alternative B ... 2053
Table M.118. Total Annual Emissions from Road Maintenance Projects - Year 2024 - Alternative B ... 2054
Table M.119. Total Annual Emissions from Road Maintenance Projects - Year 2015 - Alternative C ... 2055
Table M.120. Total Annual Emissions from Road Maintenance Projects - Year 2024 - Alternative C ... 2056
Table M.121. Total Annual Emissions from Road Maintenance Projects - Year 2015 - Alternative D ... 2057
Table M.122. Total Annual Emissions from Road Maintenance Projects - Year 2024 - Alternative D ... 2058
Table M.123. Total Annual Emissions from Livestock Grazing Projects - Year 2005 2059
Table M.124. Total Annual Emissions from Livestock Grazing Projects - Year 2015 - Alternative A ... 2060
Table M.125. Total Annual Emissions from Livestock Grazing Projects - Year 2024 - Alternative A ... 2061
Table M.126. Total Annual Emissions from Livestock Grazing Projects - Year 2015 - Alternative B.... 2062
Table M.127. Total Annual Emissions from Livestock Grazing Projects - Year 2024 - Alternative B.... 2063
Table M.128. Total Annual Emissions from Livestock Grazing Projects - Year 2015 - Alternative C.... 2064
Table M.129. Total Annual Emissions from Livestock Grazing Projects - Year 2024 - Alternative C.... 2065
Table M.130. Total Annual Emissions from Livestock Grazing Projects - Year 2015 - Alternative D ... 2066
Table M.131. Total Annual Emissions from Livestock Grazing Projects - Year 2024 - Alternative D ... 2067
Table N.1. National and State Primary Air Quality Standards for Criteria Pollutants and Representative Concentrations for the Planning Area 2071
Table N.2. WARMS Network in and Near the Planning Area 2074
Table N.3. Sample Emission Reduction Strategies for Oil and Gas Development Projects 2080
Table O.1. Sensitive Soils on BLM-administered Surface in the Planning Area 2087
Table Q.1. Emergency Stabilization and Rehabilitation Program Timeframes, Tasks, and Responsibilities 2104
Table U.1. Oil and Gas Well Numbers (BLM-Administered Surface) 2180
Table U.2. Projected Oil and Gas Production from New Wells (Federal Surface) 2180
Table U.3. Projected Oil and Gas Production from New Wells (Federal, State, and Fee Surface) 2181
Table U.4. Assumptions for Analysis of Economic Impacts for Oil and Gas Well Drilling and Completion According to Well Type 2182
Table U.5. Assumptions for Analysis of Economic Impacts on Output for Oil and Gas Production .. 2182
Table U.6. Assumptions for Employment Impact Analysis for Oil and Gas Well Drilling and Completion According to Well Type 2183
Table U.7. Assumptions for Employment Impact Analysis for Oil and Gas Production 2183
Table U.8. Estimated Forage Availability (Animal Unit Months) 2184
Table U.9. Assumptions for Analysis of Impacts on Output for Livestock Grazing 2185
Table U.10. Assumptions for Analysis of Employment Impacts for Livestock Grazing 2185
Table U.11. Projected Growth Rates for Nonresident Recreation Visitor Days 2186
Table U.12. Assumptions for Analysis of Impacts on Output for Recreation Activities 2187
Table U.13. Assumptions for Employment Impact Analysis for Recreation Activities 2187

List of Maps

Map 1. Surface Estate in the Planning Area 1667
Map 2. Federal Mineral Estate in the Planning Area 1667
Map 3. Physical Resources - Severe Erosion Hazard Soils - All Alternatives 1667
Map 4. Physical Resources - Lands with 25 Percent Slope or Greater - All Alternatives 1667
Map 5. Physical Resources - Lands with Poor Reclamation Suitability - All Alternatives 1667
Map 6. Physical Resources - Miscellaneous Soil Types - All Alternatives 1667
Map 7. Physical Resources - Cave and Karst Formations - All Alternatives 1667
Map 8. Mineral Resources - Locatable - Existing and Recommended Withdrawals – All Alternatives 1667
Map 9. Mineral Resources - Locatable - Potential/Active Mining Areas - All Alternatives 1667
Map 10. Mineral Resources - Salable - Mineral Materials Development Potential – All Alternatives 1667
Map 11. Mineral Resources - Leasable - Coal - All Alternatives 1667
Map 12. Mineral Resources - Leasable - Oil and Gas - Existing Leases - All Alternatives 1667
Map 13. Mineral Resources - Leasable - Oil and Gas Constraints - Alternative A 1667
Map 14. Mineral Resources - Leasable - Oil and Gas Constraints - Alternative B 1667
Map 15. Mineral Resources - Leasable - Oil and Gas Constraints - Alternative C 1667
Map 16. Mineral Resources - Leasable - Oil and Gas Constraints - Alternative D 1667
Map 17. Mineral Resources - Fluid Minerals - Conventional Oil and Gas Potential and Well Locations - All Alternatives 1667
Map 18. Mineral Resources - Fluid Minerals - Coalbed Natural Gas Potential – All Alternatives 1668
Map 19. Biological Resources - Vegetation - All Alternatives 1668
Map 20. Biological Resources - Forests and Woodlands - All Alternatives 1668
Map 21. Biological Resources - Invasive Species Potential - All Alternatives 1668
Map 22. Biological Resources - Fish and Wildlife - Streams with Fish Populations – All Alternatives 1668
Map 23. Biological Resources - Fish and Wildlife - Elk Seasonal Ranges and Big Game Migration Corridors - All Alternatives 1668
Map 24. Biological Resources - Fish and Wildlife - Sharp-tailed Grouse Leks – Alternatives A, B, and D 1668
Map 25. Biological Resources - Fish and Wildlife - Raptors - Alternatives A and C 1668
Map 26. Biological Resources - Fish and Wildlife - Raptors - Alternative B 1668
Map 27. Biological Resources - Fish and Wildlife - Raptors - Alternative D 1668
Map 28. Biological Resources - Special Status Species - Plants - All Alternatives 1668
Map 29. Biological Resources - Special Status Species - Prairie Dog Colonies – All Alternatives 1668
Map 30. Biological Resources - Special Status Species - Greater Sage-Grouse - Alternative A 1668
Map 31. Biological Resources - Special Status Species - Greater Sage-Grouse - Alternative B 1668
Map 32. Biological Resources - Special Status Species - Greater Sage-Grouse - Alternative C 1668
Map 33. Biological Resources - Special Status Species - Greater Sage-Grouse - Alternative D 1668
Map 34. Biological Resources - Special Status Species - Bald Eagle Roosts and Nests – All Alternatives 1668
Map 35. Biological Resources - Special Status Species - Mountain Plover - All Alternatives 1668
Map 36. Heritage and Visual Resources - Cultural Resources - Alternative A 1668

Map 37. Heritage and Visual Resources - Cultural Resources - Alternative B 1668
Map 38. Heritage and Visual Resources - Cultural Resources - Alternative D 1669
Map 39. Heritage and Visual Resources - Cultural Sub-Regions - All Alternatives 1669
Map 40. Heritage and Visual Resources - Potential Fossil Yield Classification – All Alternatives. 1669
Map 41. Heritage and Visual Resources - Visual Resource Management - Alternative A 1669
Map 42. Heritage and Visual Resources - Visual Resource Management - Alternative B 1669
Map 43. Heritage and Visual Resources - Visual Resource Management - Alternative C 1669
Map 44. Heritage and Visual Resources - Visual Resource Management - Alternative D 1669
Map 45. Land Resources - Forest Products - All Alternatives 1669
Map 46. Land Resources - Disposal Lands - Alternative A 1669
Map 47. Land Resources - Disposal Lands - Alternatives B, C, and D 1669
Map 48. Land Resources - Renewable Energy - Alternative B 1669
Map 49. Land Resources - Renewable Energy - Alternative D 1669
Map 50. Land Resources - Rights-of-Way Corridors - Alternatives A and C 1669
Map 51. Land Resources - Rights-of-Way Corridors - Alternatives B and D 1669
Map 52. Land Resources - Preliminary Transportation Network 1669
Map 53. Land Resources - Transportation Access - Alternative A 1669
Map 54. Land Resources - Transportation Access - Alternative B 1669
Map 55. Land Resources - Transportation Access - Alternative C 1669
Map 56. Land Resources - Transportation Access - Alternative D 1669
Map 57. Land Resources - Recreation - ERMA and SRMA - Alternative B 1669
Map 58. Land Resources - Recreation - ERMA and SRMA - Alternative C 1669
Map 59. Land Resources - Recreation - ERMA and SRMA - Alternative D 1670
Map 60. Land Resources - Grazing Management - All Alternatives 1670
Map 61. ACECs, BCBs, and LWCs - Alternative B 1670
Map 62. ACECs, BCBs, and LWCs - Alternative D 1670
Map 63. Special Designations - WSAs and WSRs - All Alternatives 1670

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Wyoming State Office
P.O. Box 1828
Cheyenne, Wyoming 82003-1828

In Reply Refer to:
1610 (930)

Dear Reader:

Attached for your review and comment is the Draft Resource Management Plan and Environmental Impact Statement (Draft RMP and EIS) for the Bureau of Land Management (BLM), Buffalo Field Office. The BLM prepared this document in cooperation with other Federal agencies, Wyoming State agencies, County Governments, and conservation districts located in the planning area.

The planning area is located in north-central Wyoming and consists of approximately 7.4 million acres of Federal, State, and private land in Campbell, Johnson, and Sheridan Counties. Within the planning area, the BLM administers approximately 780,000 acres of surface lands and 4.8 million acres of Federal mineral estate. BLM-administered lands within the planning area are currently managed according to the 1985 Buffalo RMP as updated by the 2001 Buffalo RMP Update and amended by the 2003 RMP Amendment for the Powder River Basin Oil and Gas Project. When approved, this RMP and EIS will replace these existing plans.

The Draft RMP and EIS describes and analyzes four alternatives for future management of public lands and resources administered by the BLM. While a Preferred Alternative is identified, selection of the final plan has not been made. The final decision will be made only after consideration of the comments received on the Draft RMP and EIS.

Your review and comments on the contents of this document are critical to the success of this planning effort. If you wish to submit comments on the Draft RMP and EIS, we request that you make them as specific as possible. Comments will be more helpful if they include suggested changes, sources or methodologies, and reference to a section or page number. Comments that contain only opinions will be considered and included as part of the decision making process, although they will not receive a formal response from the BLM. Comments will be accepted for ninety (90) calendar days following the Environmental Protection Agency's (EPA) publication of its Notice of Availability in the Federal Register. The BLM can best utilize your comments and resource information submissions if received within the review period.
Written comments may be submitted as follows (submittal of electronic comments is encouraged):

1. Written comments may be submitted electronically via email to:

   BRMP_Rev_WYMail@blm.gov

2. Written comments may be submitted during public meetings.

3. Written comments may be mailed directly, or delivered to, the BLM at:

   Buffalo RMP and EIS
   Bureau of Land Management Buffalo Field Office
   1425 Fort Street
   Buffalo, Wyoming 82834

To facilitate analysis of comments and information submitted, we strongly encourage you to submit comments in an electronic format through email.

The BLM will hold a series of public meetings at locations around the planning area to provide the public with additional opportunities to submit comments and seek additional information. The locations, dates, and times of these meetings will be announced at least 15 days prior to the first meeting via a press release and on the project website (http://www.blm.gov/wy/st/en/programs/Planning/rmps/buffalo.html).

Comments, including names and street addresses of respondents, will be available for public review following the comment period in their entirety at the Buffalo Field Office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays, and will be published as part of the Proposed RMP and Final EIS. Individual respondents may request confidentiality. If you wish to withhold your name or street address from the public review or from disclosure under the Freedom of Information Act, you must state this promptly, at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses and from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.
Copies of the Draft RMP and EIS have been sent to affected Federal, State, and local Government agencies and to those persons who indicated that they wished to receive a copy of the Draft RMP and EIS. Copies of the Draft RMP and EIS are available on the project website and for public inspection at the following BLM locations:

Bureau of Land Management
Wyoming State Office
5353 Yellowstone Road
Cheyenne, Wyoming 82009

Bureau of Land Management
Buffalo Field Office
1425 Fort Street
Buffalo, Wyoming 82834

Project website: http://www.blm.gov/wy/st/en/programs/Planning/rmps/buffalo.html

The BLM thanks our cooperating agencies who have participated in the planning process and have helped us complete this document. We look forward to your continued interest and participation.

For additional information or clarification regarding this document or the planning process, please contact Thomas Bills, RMP Project Manager at (307) 684-1133.

Sincerely,

Donald A. Simpson

Donald A. Simpson
State Director

Abstract

Lead Agency: United States (U.S.) Department of the Interior, Bureau of Land Management (BLM)

Type of Action: Administrative

Jurisdiction: Portions of Campbell, Johnson, and Sheridan counties, Wyoming

Abstract: This Draft Resource Management Plan and Environmental Impact Statement (Draft RMP and EIS) describes and analyzes alternatives for the planning and management of public lands and resources administered by the BLM, within the Buffalo planning area. The planning area is located in north-central Wyoming and consists of approximately 7.4 million acres of federal, state, and private land. Within the planning area, the BLM administers approximately 780,000 acres of surface lands and 4.8 million acres of federal mineral estate.

BLM-administered lands within the planning area are currently managed according to the 1985 Buffalo RMP as updated by the 2001 Buffalo RMP Update and amended by the 2003 RMP Amendment for the Powder River Basin Oil and Gas Project. When approved, this RMP and EIS will replace these existing plans. As part of the RMP revision process, the BLM conducted a scoping period to solicit input from the public and interested agencies on the nature and extent of issues and impacts to be addressed in the Draft RMP and EIS. Planning issues identified for this RMP revision focus on soils and watershed management, energy and minerals management, fire and fuels management, invasive species, wildlife and special status species habitat, cultural and paleontological resources, management of visual resources, land ownership adjustments, access to public lands and travel, recreation and visitor use, livestock grazing, special designations, and socioeconomic conditions.

To assist the agency decision maker, cooperating agencies, and the public in focusing on appropriate solutions to planning issues, the Draft EIS considers four alternative RMPs. **Alternative A** is a continuation of current management (No Action Alternative). Under this alternative, use of public lands and resources would continue to be managed under the existing RMP, as amended. **Alternative B** emphasizes the greatest protection of physical, biological, and heritage resources, while providing for limited development. **Alternative C** emphasizes resource development, while limiting protection of physical, biological, and heritage resources. **Alternative D** balances protection of physical, biological, and heritage resources, while providing for sustainable development. It is BLM's Preferred Alternative. Alternative D it is not a final agency decision, but instead an indication of the agency's preliminary preference that reflects the best combination of decisions to achieve BLM goals and policies, meets the purpose and need, addresses the key planning issues, and considers the recommendations of cooperating agencies and BLM specialists.

When completed, the Record of Decision for the RMP will provide comprehensive, long-range decisions for (1) managing resources in the BLM Buffalo Field Office and (2) identifying allowable uses on the BLM-administered public lands. Comments are accepted for 90 days following the date the U.S. Environmental Protection Agency publishes the Notice of Availability for this Draft RMP and EIS in the Federal Register. Comments should be submitted via email to BRMP_Rev_WYMail@blm.gov. Alternatively, comments can be mailed to: Buffalo RMP and EIS, Bureau of Land Management Buffalo Field Office, 1425 Fort Street, Buffalo, Wyoming 82834.

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Executive Summary

Introduction

This Draft Resource Management Plan and Environmental Impact Statement (Draft RMP and EIS) describes and analyzes alternatives for the future management of public lands and resources the Bureau of Land Management (BLM) administers in the Buffalo Field Office (BFO). Located in north-central Wyoming, the Buffalo planning area covers approximately 7.4 million acres of federal, state, and private land in three adjacent counties (Johnson, Campbell, and Sheridan). Of the total area, approximately 780,000 acres are BLM surface and 4.8 million acres are federal mineral estate.

RMPs, also termed land use plans, ensure that public lands are managed in accordance with the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.) under the principles of multiple use and sustained yield. FLPMA requires developing, maintaining, and, as appropriate, revising land use plans. Revising an existing land use plan is a major federal action for the BLM. The National Environmental Policy Act of 1969 (NEPA), as amended, requires federal agencies to prepare an EIS for major federal actions; this document combines the Draft RMP and EIS into a single document.

The Draft RMP and EIS analyzes the impacts of four alternative RMPs for the planning area, including the No Action Alternative (Alternative A) and the Preferred Alternative (Alternative D). The No Action Alternative reflects current management (existing RMP and amendments). The analysis considers a comprehensive range of alternatives that provide for various levels of resource protection and opportunities for motorized and nonmotorized recreational activities, leasing and development of mineral resources, livestock grazing, and other land use activities. Alternative B emphasizes resource conservation while Alternative C emphasizes resource development; together they represent the “bookends” of the reasonable range of alternatives required by the NEPA. Alternative D presents BLM's preferred balance of resource conservation and resource development.

Purpose and Need

BLM-administered lands within the planning area are currently managed according to the 1985 Buffalo RMP as updated by the 2001 Buffalo RMP Update and amended by the 2003 Record of Decision (ROD) and RMP Amendment for the Powder River Basin Oil and Gas Project (existing plan). Since the ROD for the existing plan, new data have become available and laws, regulations, and policies regarding management of these public lands have changed. In addition, decisions in the existing plan do not satisfactorily address all new and emerging issues in the planning area. These changes and potential deficiencies created the need to revise the existing plans. The revised RMP will address the changing needs of the planning area and select a management strategy that best achieves a combination of the following elements:

- Employ a community-based planning approach to seek broadly supported solutions to issues, and collaborate with federal, state, and local cooperating agencies.
- Establish goals and objectives (desired outcomes) for managing resources and resource uses in the approximately 780,000 surface acres and 4.8 million acres of federal mineral in the planning area administered by the BLM in accordance with the principles of multiple use and sustained yield.

- Identify land use plan decisions to guide future land management actions and subsequent site-specific implementation decisions.
- Identify management actions and allowable uses anticipated to achieve the established goals and objectives and reach desired outcomes.
- Provide comprehensive management direction by making land use decisions for all appropriate resources and resource uses administered by the BLM in the planning area or by updating existing decisions.
- Provide for compliance with applicable tribal, federal, and state laws, standards, and implementation plans, and BLM policies and regulations.
- Recognize the Nation's need for domestic sources of minerals, energy, and forest products and support livestock production.
- Retain flexibility to adapt to new and emerging issues and opportunities and to provide for adjustments to decisions over time based on new information and monitoring.
- Strive to be compatible with the plans and policies of adjacent local, state, tribal, and federal agencies and consistent with federal laws, regulations, and BLM policies; and be flexible enough to adapt to future BLM policy and guidance updates.

Planning Issue Statements

Planning issues identified through the scoping process and other public outreach efforts focus on the demands, concerns, conflicts, or problems concerning use or management of public lands and resources in the planning area. Key planning issues also serve as the rationale for alternative development. The main issues described and analyzed in the Draft RMP and EIS include the following:

Air Quality and Climate Change

- How can the BLM manage activities occurring on public lands to ensure they do not contribute to air quality-related impacts to human health or resource values?
- How should the BLM incorporate climate change into its land management practices?

Water Quality and Riparian/Wetland Areas

- How should the BLM manage the use and development of public lands to ensure surface and groundwater resources are available and of sufficient quality for public, wildlife, and other uses?
- How can BLM-administered lands be managed to protect wetland and riparian areas?

Mineral and Energy Resources

- Which areas should be open to mineral and energy development and how will the BLM address issues related to split estate lands?
- What management and leasing actions are needed for mineral and energy developments to protect natural, biological, and cultural resources?

Biological Resources: Vegetation, Fish, Wildlife, and Special Status Species

- What management actions or development actions are needed to protect, improve, or restore terrestrial and aquatic habitats for fish, wildlife, and special status species?
- How can BLM management sustain ecosystem health while providing for multiple uses?

Invasive Species and Pest Management

- What development stipulations and management actions are appropriate to control and prevent the spread of noxious weeds, pests, and invasive species?

Cultural and Paleontological Resources and Tribal Concerns

- How can the BLM protect paleontological resources, cultural and heritage sites, and traditional cultural properties?
- How can the BLM effectively involve Native Americans in BLM management and decision making?

Lands and Realty and Rights-of-Way

- How can land tenure and management adjustments be used for access and development, while also protecting natural, biological, and cultural resource values?
- Which areas should be available for renewable energy development and how should this development be managed to protect other resource values and uses?

Travel and Transportation Management

- How should travel, including OHV use be managed for recreational and commercial access, while also protecting natural, biological, and cultural resources?

Recreation

- How should the BLM manage recreation on public lands to provide a full spectrum of recreational opportunities, while ensuring public safety and the protection of resources values?

Livestock Grazing Management

- How should the BLM manage livestock grazing on public lands to ensure the protection of natural, biological, and cultural resources while maintaining grazing-dependent socioeconomic and heritage values?

Special Designations

- What areas contain sensitive resources requiring special management and what, if any, special designations are appropriate to protect them?

Socioeconomic Resources

- How can the BLM protect natural, biological, and cultural resources while managing BLM-administered lands to support local economies and traditions tied to these lands?

Planning criteria are the standards, rules, and guidelines that help direct the RMP planning process. In conjunction with planning issues, planning criteria ensure that the planning process is focused and incorporates appropriate analyses. The criteria also help guide final RMP selection, and the BLM uses the criteria as a basis for evaluating the responsiveness of planning options. Planning criteria for this RMP revision are summarized below; the full planning criteria are listed in Chapter 1, Purpose and Need for Action.

- Lands covered in the RMP will be public land and split estate lands with mineral estate or surface estate managed by the BLM. No decisions will be made relative to non-BLM-administered lands.
- All proposed management actions will be based upon current scientific information, research and technology, as well as existing inventory and monitoring information.
- The proposed RMP will recognize valid and existing rights.
- The planning process will incorporate the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the BLM in the State of Wyoming as goal statements (BLM 1998).
- The proposed RMP will be in compliance with the FLPMA and all other applicable laws, regulations, and policies.
- A reasonable foreseeable development scenario for fluid minerals will be developed.
- The RMP revision planning effort will be collaborative and multi-jurisdictional. The BLM will strive to ensure that its management decisions complement its planning jurisdictions and adjoining properties within the boundaries prescribed by law and regulation.
- The planning process will involve American Indian Tribal governments and will provide strategies for the protection of recognized traditional uses.
- The BLM and cooperating agencies will jointly develop a range of alternatives for resolution of resource management issues and management concerns.
- The RMP and EIS will address the Pennaco Court Decision (Docket No. 02-CV-116-CAB) requiring analysis of coalbed natural gas (CBNG) development for fluid mineral leasing decisions in the Powder River Basin.

Public Involvement and Collaboration

A Notice of Intent (NOI) published in the Federal Register on November 14, 2008, formally announced the BLM's intent to revise the existing plan and prepare the associated EIS. Publication of the NOI initiated the scoping process and invited affected and interested agencies, organizations, and the general public to participate in determining the scope and issues to be addressed by alternatives and analyses in the EIS. The scoping period was from November 14, 2008 to January 5, 2009, during which time the BLM hosted five public meetings attended by 129 people. The scoping meetings provided the public an opportunity to learn about the project, ask questions, and provide their issues and concerns to the BLM. Information obtained by the BLM during scoping, along with issues identified by the BLM and other agencies, was used to form the scope of the EIS. The BLM also held two open house meetings in December 2009 in Buffalo and Gillette, Wyoming. Similar to the public scoping meetings, the open house meetings provided the public an opportunity to ask questions of BLM staff and learn about the progress of the project.

Cooperating Agencies and Tribal Consultation

The BLM invited local, state, federal, and tribal representatives to participate as cooperating agencies on the RMP revision. The BLM invited these entities to participate because they have jurisdiction by law or because they could offer special expertise. Cooperating agencies participated in a series of alternative formulation workshops, reviewed draft information and documents, and periodically met with BLM management and resource specialists throughout the revision process to discuss planning issues and provide input to the process. Cooperating agencies helped the BLM develop the alternatives identified in this Draft RMP and EIS.

Consultation with Native Americans tribes is part of the NEPA scoping process and a requirement of FLPMA. The BLM took multiple steps to contact the tribes and include them in the scoping process. The BLM sent letters to the multiple tribes inviting them to be part of the planning process through consultation and public scoping meetings, as well as requesting information to be considered in the planning process.

Alternatives Considered In Detail

To comply with NEPA requirements in the development of alternatives for this Draft RMP and EIS, the BLM sought public input and analyzed a reasonable range of alternatives, including the No Action Alternative (Alternative A). The BLM conducted a series of workshops with an Interdisciplinary Team comprising BLM specialists and local, state, and federal cooperating agencies. The BLM formulated two alternatives (B and C) that reflect a range of resource use and conservation. The major issues addressed include: (1) energy and mineral resource exploration and development; (2) vegetation and habitat management; (3) land ownership adjustments, access and transportation; and (4) special designations. Following analysis of alternatives A, B, and C, the Interdisciplinary Team provided recommendations for selecting the Preferred Alternative (Alternative D). The Preferred Alternative does not represent a final BLM decision and could change between publication of the Draft RMP and EIS and Proposed RMP and Final EIS based on public comments on the draft document, new information, or changes in laws, regulations, or BLM policies. The BLM will make its final decision after it publishes the Proposed RMP and Final EIS, and will document its decision in a ROD.

Including the No Action Alternative (Alternative A), the four alternatives analyzed in this Draft RMP and EIS represent differing approaches to managing resources and resource uses in the planning area. Each alternative comprises two categories of land use planning decisions: (1) desired outcomes (goals and objectives) and (2) management actions.

Goals and objectives direct BLM actions to most effectively meet legal mandates, regulations, and agency policy, as well as local and regional resource needs. Goals are broad statements of desired outcomes that are usually not quantifiable. Objectives identify more specific desired outcomes for resources and might include a measurable component. Objectives are generally expected to achieve the stated goal.

Management actions identify uses that are allowed, restricted, or excluded on BLM-administered surface lands and federal mineral estate. Management actions are proactive measures (for example, measures the BLM will implement to enhance watershed function and condition), or limitations intended to guide BLM activities in the planning area. Management actions often contain a spatial component because the alternatives identify whether particular land uses are allowed, restricted, or excluded. Alternatives may include specific management actions to meet goals and objectives and may exclude certain land uses to protect resource values.

Alternative A

The No Action Alternative represents continuation of current management and provides a baseline from which to identify potential environmental consequences when compared to the action alternatives. The No Action Alternative describes current resource and land management direction in the planning area under the existing plan. Current management identifies constraints on mineral development activities in the planning area to conserve resource values that are incompatible with mineral resources activity. Alternative A does not designate any Areas of Critical Environmental

Concern (ACECs) and the Gardner Mountain, North Fork, and Fortification Creek Wilderness Study Areas (WSAs) will be available for oil and gas leasing if not designated as Wilderness by Congress. The BLM manages the planning area as one Extensive Recreation Management Area under Alternative A and allows livestock grazing on all but approximately 10,000 acres of the planning area. Alternative A identifies few management actions to address vegetation and invasive species management and, as such, management is typically considered on a project specific basis for these resources. Current management includes seasonal and year-round restrictions for surface-disturbing activities in important big game habitat, as well as a 0.25-mile protective buffer for Greater Sage-Grouse strutting grounds.

Alternative B

Alternative B emphasizes conservation of physical, biological, heritage and visual resources, and areas with wilderness characteristics with constraints on resource uses. Compared to other alternatives, Alternative B conserves the most land area for physical, biological, and heritage resources; designates the highest number of ACECs (eight); and is the most restrictive to motorized vehicle use and mineral development. Mineral resource uses are subject to additional constraints under Alternative B compared to other alternatives and the BLM would close all coal lands outside the high development potential areas to coal exploration and leasing. Alternative B evaluates roads within the planning area for designation as National Back Country or Scenic Byways. Under Alternative B, the BLM would manage the National Wild and Scenic River (WSR) eligible and suitable segment of the Middle Fork Powder River to retain its free-flowing characteristics and outstandingly remarkable values if Congress denies its WSR nomination. Under Alternative B, recreation management emphasizes protection of resources and recreational experiences by designating eight special recreation management areas (SRMAs). Alternative B limits or prohibits livestock grazing where it has been determined to be incompatible with other uses. Alternative B authorizes only native plant species for reclamation activities and provides the most protection for riparian/wetland resources by applying a no surface occupancy (NSO) stipulation within 500 feet of riparian/wetland systems, aquatic habitats, and floodplains. Alternative B emphasizes the conservation of habitat for fish, wildlife, and special status species by extending seasonal wildlife restrictions for surface-disturbing activities and increasing restrictions and lek buffers for Greater Sage-Grouse.

Alternative C

Alternative C emphasizes resource uses by reducing conservation measures afforded to physical, biological, and heritage and visual resources. Compared to other alternatives, Alternative C conserves the least land area for physical, biological, and heritage resources and is the least restrictive to motorized vehicle use and minerals development. Under Alternative C, the BLM would open all federal coal lands (4,775,136 acres) to coal exploration. Alternative C does not designate any ACECs, and the WSR eligible and suitable segment of the Middle Fork Powder River and WSAs would be managed according to other resource programs outlined in this RMP, if not designated by Congress. Generally, Alternative C manages recreational areas consistent with other resource values and allows surface disturbance and mineral development in six designated SRMAs. The BLM manages livestock grazing similarly to current management but with less emphasis on conserving other resource values. Vegetation management under Alternative C emphasizes more resource use and intensive management practices compared to the other alternatives. Alternative C generally applies less stringent management restrictions for surface-disturbing activities to protect or improve fish and wildlife habitat, such as allowing surface disturbance in big game winter ranges. Though less stringent, Alternative C applies

similar restrictions on surface-disturbing activities to protect special status wildlife species, such as requiring anti-perching devices on new powerlines within occupied Greater Sage-Grouse habitat and applying a timing limitation stipulation (TLS) within winter concentration areas.

Alternative D (Preferred Alternative)

Alternative D generally allows resource use if the activity can be conducted in a manner that conserves physical, biological, and heritage and visual resources. Alternative D allocates land as SRMAs (eight) and ACECs (three) and emphasizes moderate constraints on resource uses to reduce impacts to resource values. Alternative D would evaluate roads in coordination with the counties and other stakeholders for designation as National Back Country or Scenic Byways. Under Alternative D, the BLM manages the WSR eligible and suitable segment of the Middle Fork Powder River to retain its free-flowing characteristics and outstanding remarkable values. Similarly, this alternative manages WSAs to emphasize healthy ecosystems, opportunities for solitude, and primitive recreation regardless of Congressional designation. Alternative D allows for resource uses, similar to Alternative C, where activities can be conducted that conserve vegetation and other resource values. Additionally, Alternative D would apply a controlled surface use (CSU) stipulation to any mineral lease within 500 feet of riparian/wetland systems and aquatic habitats. Alternative D emphasizes protection of fish and wildlife resources through the application of moderate resource constraints, such as CSU and TLS stipulations, and defining exception criteria. Alternative D increases constraints on resource uses within a 0.6-mile buffer around leks in Greater Sage-Grouse Population Core Area.

Environmental Consequences

This section summarizes the environmental consequences that would result from implementing each of the four alternatives. The purpose of the environmental consequences analysis is to determine the potential impacts of the federal action under each of the four alternatives on the human environment, while focusing on key planning issues identified by the BLM and raised during the scoping process. The analysis of environmental consequences is separated according to the resource category, and includes: physical resources, mineral resources, fire and fuels management, biological resources, heritage and visual resources, land resources, special designations, and socioeconomics.

Physical Resources

Physical resources include air quality, soil, water, geological, and cave and karst resources. Air quality impacts would primarily result from minerals development and production and oil and gas activities; emissions associated with these actions would outweigh those produced from other proposed activities. Among the range of alternatives, Alternative B would have the lowest levels of air emissions in 2015 and 2024. Because of this, Alternative B is expected to result in the least amount of impacts on air quality resources. Compared to the base year emissions for 2005, Alternative B shows increases in particulate matter less than 10 microns in diameter, particulate matter less than 2.5 microns in diameter, nitrogen oxide, carbon monoxide, and sulfur dioxide emissions in both future years, and a slight decrease in organics and toxics emissions (volatile organic compounds and hazardous air pollutants). The largest estimated increases in emissions are expected from Alternative C because this alternative reflects the least amount of constraints on natural resource development and the greatest amount of development and resource use. As such, Alternative C is expected to result in the highest impacts on air quality resources in the planning area.

Impacts to soil resources may result from surface disturbance associated with a variety of resource programs including minerals development, road construction, and recreation such as off-highway vehicle (OHV) use. Actions that restrict surface disturbance or restore vegetation on disturbed areas occur under all alternatives and generally are considered to have a beneficial impact on soil resources by limiting erosion. Alternative B is anticipated to produce the least potential adverse impacts to soil resources because management actions are anticipated to result in the least soil disturbance. Alternative C is the least protective of the soil resource and would produce the most soil disturbance. Alternative D attempts to balance soil protections while allowing minerals and land use activities when impacts can be mitigated through construction, reclamation, and stabilization planning.

In addition to affecting soils, surface disturbance is an adverse impact to water resources when it contributes to offsite erosion and sediment delivery. The number of new oil and gas wells and amount of produced water discharge can also affect water quality and quantity. Alternative B provides the greatest protection to surface water and groundwater resources. Alternative A provides moderate levels of water resource protection and would result in somewhat more adverse impacts to water resources than Alternative B. Alternative D results in less adverse impacts to surface water than Alternative A, and similar impacts to Alternative A relative to groundwater quality and quantity. Alternative C would result in the most adverse impacts by allowing surface-disturbing activities within 500 feet of water resources without mitigation planning.

Adverse impacts to cave and karst resources result from actions that disturb or destroy these resources or disrupt the habitat of flora and/or fauna that utilize them. Increased human visitation, especially unauthorized uses or vandalism, to caves can cause adverse impact to cave resources. The primary beneficial impacts to cave and karst resources – under alternatives B, C, and D – result from managing human activity in caves under a cave management plan to protect and maintain cave resources. Alternative B provides the greatest protection to caves by prohibiting surface-disturbing activities in areas containing cave and karst resources, while alternatives C and D require buffers around significant cave entrances for potentially incompatible uses.

Mineral Resources

Mineral resources include locatable, leasable, and salable minerals (also called mineral materials). The main goal of the mineral resources programs is to provide opportunities for the exploration and development of federal mineral resources to support domestic needs for these resources. This goal of mineral resource use is moderated by objectives to minimize impacts to other resource values.

Implementation of the alternatives may result in public lands being withdrawn or segregated from locatable mineral entry under the mining laws. Alternative B would result in the largest acreage recommended for withdrawal from mineral entry (618,256 acres), followed by Alternative D (115,614 acres); both alternatives A and C have no recommended acres for withdrawal from mineral entry.

Coal is produced from 13 existing mines in Campbell County. New mines are also permitted and proposed in Campbell and Sheridan counties, respectively. Based on the latest forecasting, demand for Powder River Basin coal is expected to increase between 0.25% and 2% per year through the life of the plan. Federal coal resources will be managed under all alternatives consistent with the specific coal planning criteria as required under 43 Code of Federal Regulations 3420.1 and 3461. There is limited difference between alternatives in terms of effects on coal resources. Alternative B will restrict coal exploration and development to the two already

designated coal high development potential areas, potentially restricting in situ gasification, underground mining, and long-term future surface coal mining. All other alternatives will generally have no or negligible adverse impacts to coal resources. Under alternatives C and D, lease stipulations placed on oil and gas leases would beneficially impact coal by eliminating oil and gas operations that interfere with permitted mining.

Approximately 9.8 million barrels of oil were produced in the planning area in 2007, about 18% of the State of Wyoming's total production. Also in the planning area, the Powder River Basin CBNG field ranks eleventh in proven gas reserves in the United States (DOE 2008). Management actions that restrict or constrain the potential for leasing, development, and exploration would result in adverse impacts to oil and gas resources; management actions that ease restrictions or maintain areas as open for oil and gas exploration and development would result in beneficial impacts. Under Alternative D, 101,214 acres of federal mineral are administratively unavailable for oil and gas leasing to protect resource values. Alternative D identifies less acreage as administratively unavailable for oil and gas leasing compared to Alternative A. Acres administratively unavailable for oil and gas leasing are lowest under Alternative C and highest under Alternative B. The area of potential new leases subject to NSO restrictions for fluid minerals, timing, and/or surface disturbance restrictions – primarily to protect fish and wildlife habitat and cultural resources – is also lowest under alternatives A, D, and C and highest under Alternative B. The number of projected new federal conventional wells is highest under alternatives A, C, and D and lowest under Alternative B. Taking into account administratively unavailable acres, NSO restrictions, and major and moderate constraints, Alternative C will result in the least potential adverse impacts – followed by alternatives A and D – to new oil and gas leasing, exploration, and development. Conversely, Alternative B will result in the most adverse impacts.

Limitations and restrictions on surface-disturbing activities for oil and gas exploration and development also apply to geophysical and geothermal exploration and development.

The salable minerals resource (i.e., mineral materials such as sand and gravel) could be adversely impacted under each alternative. Implementation of certain management actions may impact access to salable mineral resources (e.g., restricting certain areas from surface-disturbing activities or closing areas to mineral materials disposals to conserve other resource values). Alternative B would result in the greatest adverse impact to mineral materials by restricting or closing 1,663,422 acres to salable mineral exploration and development, including areas within 500 feet of riparian/wetland areas, areas with a severe soil erosion hazard, and slopes of 25% and greater. Alternatives D (390,162 acres), C (57,213 acres), and A (28,873 acres), respectively, would result in decreasing adverse impacts to mineral materials disposals from closures or limitations.

The likelihood of any other leasable minerals (i.e., leasable minerals other than coal, oil, and gas) being explored for, or developed, in the planning area is remote; no applications to lease a leasable mineral other than coal, oil, or gas have been received for the planning area to date. Thus, these minerals are not discussed further, and the potential impacts to other leasable minerals due to management actions for other resources are not analyzed.

Fire and Fuels Management

The goals of fire and fuels management are to protect life and property; protect or enhance natural resources; and use wildland fire where appropriate to maintain or improve ecological processes. There are two types of wildland fire: wildfire (unplanned ignition) and prescribed fire (planned ignition). Management actions that contribute to an increase in the incidence of wildfire, or actions that limit the ability to effectively manage wildfires are considered adverse impacts to

fire management. Management actions under the alternatives would affect wildfires (unplanned ignitions) and prescribed fires (planned ignitions).

Alternative A is based on current fire management in which variable wildfire suppression strategies are balanced with resource values and protection needs. Though appropriate suppression strategies may be used to manage wildfires, the objective is to suppress the fire; so wildfire events (unplanned ignitions) in this alternative cannot be managed to achieve other resource goals and objectives. Prescribed fire in Alternative A would be allowed to treat about 14,000 acres during the life of the plan. Through variable suppression strategies and moderate resource constraints, this alternative provides a reasonable framework to partially meet the goals of fire and fuels management.

Alternative B offers the opportunity to use a wide range of fire management strategies throughout the planning area to meet multiple objectives, including using unplanned ignitions to achieve other resource goals and objectives. The entire planning area would be available to identify appropriate landscapes where wildfire could be managed for multiple objectives. This alternative, however, limits the use of prescribed fire to about 3,500 acres during the life of the plan which adversely impacts the ability to achieve hazardous fuels objectives. In addition, restrictions on surface-disturbing and disruptive activities would affect management of both unplanned and planned ignitions, making it difficult to realize the benefits of managing for multiple objectives. Alternative B also constrains suppression tactics more than the other alternatives by limiting heavy equipment, foam, and retardant in many situations.

Alternative C emphasizes full suppression strategies which simplifies emergency management, but does not pursue the goals of fire management. No portion of the planning area would be available to manage unplanned ignitions for other resource objectives. In contrast, prescribed fire would be allowed to treat about 42,000 acres during the life of the plan, which could offset the adverse ecological effects of full suppression strategies. There are few constraints on surface-disturbing and disruptive activities which would allow efficient implementation of prescribed fire treatments.

Alternative D balances suppression strategies with resource values, and may use unplanned ignitions as a management tool to achieve other resource objectives. The entire planning area would be available to identify appropriate landscapes where wildfire could be managed for multiple objectives. Prescribed fire in this alternative would be allowed to treat about 14,000 acres during the life of the plan. In general, surface-disturbing and disruptive activities would be assessed at the activity level, allowing projects to proceed where appropriate or with mitigations. This combination of fire management strategies, reasonable resource constraints, and allowed levels of vegetation treatments would provide the best opportunity of all the alternatives to accomplish the goals of fire and fuels management.

Emergency stabilization and rehabilitation (ES&R) projects are implemented to stabilize or rehabilitate lands which have been adversely effected by wildfire. Projects must follow the guidance in BLM Handbook H-1742-1, Burned Area Emergency Stabilization and Rehabilitation (BLM 2007c), and specific treatments would be subject to surface-disturbing and disruptive restrictions within the RMP. Historically, ES&R work has not been required on most fires within the BFO, but climate change, invasive plant species, and loss of crucial wildlife habitat may create the need for more treatments in the future. Proposed ES&R actions do not vary across the alternatives; however, Alternative B actions and constraints could contribute to fuel buildup and undesirable fire effects, which could increase the need for emergency stabilization or post-fire rehabilitation treatments.

Biological Resources

Biological resources include vegetation, fish, wildlife, and special status species. Vegetation resources analyzed in this RMP revision include forests and woodlands, grassland and shrubland communities, and riparian and wetland communities; these plant communities incorporate the major vegetation types in the planning area.

Long-term surface disturbance contributes to the decline in abundance, distribution, or health of vegetation communities in the planning area. Conversely, short-term surface disturbance from vegetation treatments would improve vegetation health and diversity, and may reduce the severity of wildland fires that destroy or permanently alter vegetation communities. Especially in forests and woodlands, active management, such as timber harvesting and silviculture treatments, would reduce the potential for catastrophic fires and enhance ecosystem health, while benefitting forest products through increasing timber availability. The primary difference between the alternatives is the number of acres anticipated for management actions. Alternative B, being the most restrictive of surface disturbance and vegetation treatments, would allow treatment on the least amount of acres. Conversely, Alternative C would allow for more management options on more acres of forest and woodland than all other alternatives. Alternative D allows the use of silvicultural treatments and intensive management tactics to manage forest health and to reduce or circumvent events such as insects, disease, and wildfire.

Management actions that advance active vegetation management, such as mechanical fuels treatments and invasive species control measures, would result in beneficial impacts to grassland and shrubland communities. Conversely, management that would result in the potential for increased long-term surface disturbance, especially from minerals development, that would contribute to the decline in abundance, distribution, or diversity of grassland and shrubland communities constitute adverse impacts. Grasslands and shrublands are the largest habitat type in the planning area; therefore, impacts to grassland and shrubland communities are expected to increase with the total acreage of surface disturbance. Management actions associated with Alternative D would allow surface-disturbing activities if defined criteria can be met and/or a reclamation plan is approved. Other management actions will be allowed upon meeting project and/or resource objectives, making the option of prohibition being waived by an authorized officer more stringent than under Alternative A. Acres of vegetation and soil disturbance would be the least under Alternative B, followed by alternatives A, D, and C, respectively.

Impacts to riparian/wetland areas occur as result of either direct surface disturbance or actions in a watershed that cause a change in riparian/wetland functionality, such as changes in sediment loading rates or hydrology. Alternative B would result in the most direct beneficial impacts to riparian/wetland resources through restrictions on surface-disturbing activities in proximity to riparian/wetland resources. Alternatives D, A, and C, respectively, would result in less protection for riparian/wetland areas. Alternatives B, C, and D manage to prevent vegetation degradation and soil compaction in riparian/wetland areas from livestock grazing by prohibiting mineral supplements for livestock in these areas; Alternative A contains no such actions.

Any vegetative community is susceptible to invasion by noxious and invasive weeds, but sites that are especially vulnerable include areas where soils have been impacted and the native plant community has been displaced or destroyed. Those alternatives projected to involve the greatest amount of surface disturbance would have the potential to result in the greatest adverse impacts from the spread of invasive species. Stringent reclamation requirements, especially requiring reclamation plans prior to allowing surface-disturbing activities, would decrease the likelihood of

invasive species establishment. Based on projected surface disturbance and the types preventative measures required, Alternative A would result in the greatest potential for the spread of invasive species, followed by alternatives C, B, and D. Alternative D is projected to result in greater surface disturbance than Alternative A, but contains more stringent reclamation requirements that would result in a reduced potential for the spread of invasive species.

Surface-disturbing activities, water depletions, sedimentation, changing stream hydrology, increased sedimentation, changes to water quality (including clarity), and introduction of exotic species (e.g., mussels or whirling disease) may impact fish. Increased sediment in fish habitat (streams, rivers, and reservoirs) decreases the potential for fish to naturally reproduce, fills in pools, leads to channel degradation, decreases light penetration and productivity, alters fish community composition, and increases stream temperature. Under all alternatives, the BLM will work in cooperation with the Wyoming Game and Fish Department and other stakeholders to mitigate adverse impacts to fish. Based on overall surface disturbance, reclamation practices, and fish habitat management including erosion control, reservoir design, and riparian area management, Alternative B would result in the most beneficial impacts to fish (including special status species fish), followed by alternatives D, A, and C, respectively.

The primary adverse impacts to wildlife would result from surface disturbance-related habitat loss and fragmentation and disruptive activities (e.g., motorized vehicle use, and recreation) that displace animals and can lead to the abandonment of nest sites or home ranges. Alternative B minimizes wildlife habitat loss and fragmentation in the planning area (e.g., closing areas to oil and gas development) to the greatest degree, followed by alternatives D, A, and C, respectively. Under Alternative B, restricting and prohibiting surface-disturbing activities in many areas that contain important wildlife habitat such as crucial big game ranges, migration corridors, and raptor nest sites provide the greatest beneficial impacts to wildlife. Alternative C restricts surface-disturbing activities in the fewest areas and contains the least management designed to improve habitat quality. Alternative B contains the most special designations (e.g., ACECs) that preserve wildlife habitat, followed by Alternative D. Alternatives A and C would not designate any ACECs.

Impacts to special status plants, fish, and wildlife species are generally the same as those for vegetation, fish, and wildlife; however, all the alternatives include additional protective management for special status species. Overall, proactive management actions would be most beneficial to special status species under Alternative B, followed by alternatives D, A, and C. Allowable uses and management actions with potential to degrade water quality in the planning area would affect special status fish species. Alternative B would result in the greatest beneficial impacts to Yellowstone cutthroat trout and other special status fish species habitat, primarily due to the removal of the "waiver" option that exists under Alternative A for multiple conservation management actions. Alternative B includes the most proactive actions to restore and enhance habitats for special status wildlife species. Alternative C would have the greatest adverse and fewest beneficial impacts to special status wildlife species. Alternative D incorporates the Governor's Greater Sage-Grouse Core Population Area Protection strategy for limiting impacts to Greater Sage-Grouse to a greater extent than alternatives A and C; however, the restrictions prescribed in the strategy do not apply to existing leases, or to habitats outside Core Population Area.

Heritage and Visual Resources

Heritage and visual resources includes cultural resources, paleontological resources, and visual resources management. Because cultural resources are fragile, often unique, nonrenewable resources that occupy relatively small areas, almost any management action that results in surface disturbance has the potential to affect them. Impacts to cultural resources may also result from visual intrusions, theft, and vandalism. Overall, Alternative C is projected to result in the most surface disturbance and, therefore would result in the greatest adverse impacts to cultural resources. However, Alternative C also incorporates greater measures to protect the setting of historic properties than Alternative A. Alternative B provides the greatest restrictions on all resource uses, and would result in the fewest adverse impacts to cultural resources. Alternative D reflects a middle of the road approach overall, providing less specific cultural resource protection than Alternative B, but acknowledging and specifying situations in which more protective measures will be needed to a greater degree than alternatives A or C.

Much of the BLM-administered land in the planning area exhibits exposed or thinly covered bedrock or badlands topography, which results in a higher potential for the discovery of important fossil localities. Any surface-disturbing activities in an area that physically alter, damage, or destroy fossils or their context may result in adverse impacts to important paleontological resources. Those alternatives that would increase or ease access could also have indirect impacts including vandalism, theft of materials, and inadvertent physical damage to significant fossils or their setting. By designating the Dry Creek Petrified Tree ACEC for paleontological values, subjecting less acreage to surface-disturbing activities, and limiting motorized vehicle access, Alternative B would result in the least adverse impacts and most resource protection compared to the other alternatives. Alternative A provides the least protection and the greatest exposure to direct impacts from surface-disturbing activities. In terms of potential impacts, management under Alternative C falls between management under alternatives A and B; that is, Alternative C employs a more proactive management approach than Alternative A, but does not provide the same degree of protective measures as alternatives B and D.

Any activities, such as recreation, mining, timber harvesting, grazing, or road development, that disturb the surface of the landscape may impact scenic values. All alternatives will allow varying degrees of development and result in impacts to visual resources. Due primarily to an outdated visual resources inventory, Alternative A would result in direct impacts to the visual setting associated with surface disturbance and facility development throughout the planning area and has the potential to impact areas with scenic values, such as cultural sites and recreational areas. Overall, Alternative B produces the least adverse impacts to visual resources because other management actions under this alternative are restricted to certain geographic areas, cover proportionately less area, or are buffered from other resources, thus producing smaller, more localized impacts to visual resources. Alternatives A and C allow more disturbance when compared to Alternative B and manage less acreage as visual resource management (VRM) Class II. Similar to Alternative B, Alternative D manages special emphasis areas (SRMAs, ACECs, areas with wilderness characteristics) as VRM Class II to limit impacts to visual resources highly valued by the public. The order of the alternatives in ascending degree of potential adverse impacts on visual resources is Alternative B, then alternatives D, A, and C.

Land Resources

Land resources includes forest products, lands and realty, renewable energy, rights-of-way (ROW) and corridors, travel and transportation management, recreation, wilderness characteristics, and livestock grazing. Impacts to forests products are addressed under biological resources.

Alternative A would continue existing management where the BLM would not pursue land tenure adjustments, but would consider adjustments on a case-by-case basis. This would likely result in minimal effort to consolidate land ownership patterns causing continued increase use on fractionated parcels, continued conflicts with adjacent land owners, and continued administrative costs associated with managing the scattered land ownership pattern; and continued trespass incidence. Special management areas (e.g., SRMAs) would continue to be difficult to manage, increasing administrative costs, as well as continued incidence of trespass across BLM-administered or private and state lands. Alternative B would allow the lands and realty department to actively pursue land tenure adjustments, similar to Alternative D. Alternative C would substantially limit opportunities for land tenure adjustments, compounding the effects described under Alternative A. Alternative D provides a moderated management plan to allow multiple resource uses, conservation, and protection while maintaining or improving the overall health of the landscape.

ROW are for infrastructure and facilities, including renewable energy facilities for wind, solar, and biomass that are in the public interest and require authorization for location over, under, on, or through BLM-administered lands. Alternatives A and C would result in the least adverse impacts to ROW; Alternative A does not identify ROW avoidance and exclusion areas and Alternative C would manage the least amount of acreage with these restrictions. Alternative B identifies 370,088 acres as ROW exclusion areas and 395,444 acres as ROW avoidance areas, limiting ROW actions and opportunities for renewable energy and minerals development across the planning area. Alternative D identifies 101,081 acres as exclusion areas and 290,336 acres as avoidance areas, for which ROW could be authorized subject to appropriate mitigation measures. These acreage allocations would place more extensive limitations on ROW actions in consideration of the reasonably foreseeable actions that could occur over the life of the plan. Under all alternatives, the BLM designates ROW corridors and preferably co-locates ROW to minimize surface disturbance.

Adverse impacts to transportation and access result from actions that modify the location, size, or design of a potential transportation proposal, or preclude a proposal from being approved. Such impacts would primarily occur from the implementation of management actions designed to protect resources sensitive to surface disturbance and human activity. Alternative D would have the greatest beneficial impact to travel management by balancing resource protection with both legal public access and motorized access. Under Alternative A, more of the planning area is open to motorized vehicle use, resulting in a high potential to increase the number of user-created roads and trails that threaten the maintenance of other resource values in these areas. Alternative B includes the greatest restrictions to travel management, and Alternative C the least. Trails and OHV management actions under alternatives B and D would minimize impacts to wildlife habitat, reducing the introduction and spread of invasive species, lessening conflicts among various motorized and nonmotorized recreation users, and preventing damage to cultural resources resulting from the expansion of roads and trails on public lands.

Impacts to recreation are those that adversely or beneficially affect the recreational setting, the recreational experience of users, or the ability of recreationists to achieve desired beneficial outcomes from the use of public lands. Alternative A does not designate any SRMAs, which decreases eligibility for construction funding and places a lower priority on recreation management that would fail to respond to changing recreation demands for diverse recreation opportunities within prescribed setting. Alternative C includes the least restrictions on development, which might facilitate recreation site development, but also includes the least protection for natural resources and viewsheds. Alternative B designates eight SRMAs, which would allow the BLM to respond to the need for more intensive recreation management efforts.

Alternative B also proposes the most restrictions on surface-disturbing activities within designated SRMAs and ACECs to preserve the recreation setting in these areas; however, these increased restrictions also reduce the diversity of recreational opportunities available. Alternative D would result in similar beneficial impacts to the recreation setting by designating eight SRMAs, but applies fewer restrictions to protect the recreation setting, in comparison to Alternative B.

Wilderness characteristics are generally indicative of a lack of human presence, so any surface-disturbing activities or placement of aboveground structures can adversely impact the wilderness characteristics resource. Alternative A contains no management actions to maintain wilderness characteristics in the planning area, and therefore would result in the greatest potential adverse impacts to this resource from other resource uses and activities. Under Alternative B, managing recreation management zones (RMZs) within the Burnt Hollow, Hole-in-the-Wall, and Middle Fork SRMAs; and the Face of the Bighorns to emphasize primitive recreational opportunities and natural values constitutes a major beneficial impact to the wilderness characteristic resources. Alternative C contains similar management for RMZs within the Burnt Hollow and Middle Fork SRMAs, but does not specify management to protect areas with wilderness characteristics or the Citizen's Wilderness proposal area. Alternative D would result in similar beneficial impacts to those under Alternative B by managing lands with wilderness characteristics to emphasize ecosystem health, natural values, and primitive recreational opportunities.

The primary impacts to livestock grazing result from management that alters the area available to livestock grazing, constrains the placement or types of range improvements, changes the number of animal unit months (AUMs) available to operators, or alters rangeland health. Alternative B is projected to result in the least acreage of surface disturbance from non-grazing resource uses and, therefore, is anticipated to reduce AUMs the least of all alternatives. However, it is the most restrictive of livestock grazing and, therefore, is anticipated to have the most adverse impact on livestock grazing management compared to all alternatives. Alternatives A and C management would be the least restrictive on livestock grazing and would have similar adverse and beneficial effects on livestock grazing.

Special Designations

Special designations include ACECs, Back County and Scenic Byways, WSRs, and WSAs. ACECs are designated to protect values of concern including resources and natural systems, and to minimize the risks associated with natural hazards; values of concern in ACECs proposed in the planning area include cultural, geologic, historic, paleontological, wildlife, recreational, and scenic values. Alternatives B and D designate eight (511,000 acres) and three (35,451 acres) ACECs, respectively. Alternative B has the most beneficial effect on ACECs as they would be managed to protect their relevant and important resource values. No ACECs would be designated under alternatives A and C. The BLM would apply mitigation measures on a case-by-case basis to protect relevant and important values when activities are proposed, resulting in additional restrictions or design requirements for certain uses or activities, or in some cases detriment to the values for which the ACEC was proposed.

National Back Country or Scenic Byways enhance motorized recreation, wildlife viewing and heritage tourism. Byways often become more frequently used following designation and are susceptible to impacts over the long term. Impacts to the byways include any action that substantially limits or prevents the use and enjoyment of the byways. The BLM would not designate, or evaluate for designation, any byways under alternatives A and C. Under alternatives

B and D, evaluating roads within the planning area for designation as byways will assist in providing opportunities for the public to learn about the multiple uses of public lands, and benefiting the scenic values for which byways are proposed. Alternative D provides for more land-use activities and development than Alternative B which could be visible from designated byways.

Protecting and enhancing scenic qualities, fisheries, recreation, and wildlife values, and the relatively unmodified character of the area in a near-natural setting, are the primary objectives for managing waterway segments that are eligible and suitable for inclusion in the National Wild and Scenic Rivers System. Because the Middle Fork Powder River is currently the only waterway within the planning area to meet the requirements for suitability and eligibility, the extent of environmental consequences is limited to the BLM surface adjacent to that waterway. The impacts from each alternative would be contingent on whether or not Congress acts to release the Middle Fork Powder River from consideration or to designate it as a WSR. If Congress denies the Middle Fork Powder River WSR nomination, alternatives B and D would maintain the free-flowing characteristics and outstanding resource values of the river. Alternatives B and D would also manage the Middle Fork Canyon as an SRMA, allowing increased protection from overuse or damage from incompatible recreational uses. The SRMA would also be unavailable for leasing and withdrawn from mineral entry, further protecting the WSR resource. Alternative C would not apply specific management actions to preserve WSR values should Congress deny the WSR proposal, which would likely result in a negligible to minor adverse impact to the scenic and recreational values of the river corridor.

WSAs exist under all alternatives and are managed under the BLM Manual 6330 – Management of Wilderness Study Areas, which restricts discretionary activities in WSAs to ensure that their suitability for Wilderness designation is not impaired. The impacts from each alternative would be contingent on whether or not Congress acts to release the WSAs from consideration or to designate as Wilderness. Although there are limited discretionary actions the BLM can take that would affect WSAs, management under Alternative B would result in beneficial impacts to WSAs by emphasizing resource protection and limiting the potential for activities, such as motorized and mechanized vehicle use, in and adjacent to WSAs that may adversely affect wilderness characteristics. Alternative D applies similar measures to preserve wilderness characteristics in WSAs and surrounding areas, and lands with wilderness characteristics.

Socioeconomic Resources

Socioeconomic resources include social conditions, economic conditions, health and safety, environmental justice, and tribal treaty rights.

Impacts to social conditions in the planning area include changes in population, such as fluctuations caused by economic boom and bust cycles; changes in the demand for housing and community services along with community fiscal conditions, which can impact the ability of state, regional, and local governments to supply community services such as education; and changes in community character, culture, and social trends. Social conditions are closely tied to economic impacts, including changes in regional economic output, employment, and earnings, and in tax revenues for the local, state, and federal governments. Based on modeling as well as qualitative analysis of economic activity from other sectors, earnings, output, employment, and tax revenues due to activities on BLM surface land and mineral estate would be similar under alternatives A, C, and D, and less under Alternative B. Implications on the social conditions in the planning area would be greatest from reduced oil and gas development and increased

emphasis on recreational opportunities and land preservation under Alternative B. Conversely, under alternatives A, C, and D, increased openness of areas to oil and gas development would bring more job opportunities, greater demand for community services, and greater tax revenues to local governments—allowing them to expand community services to meet the needs of a slightly higher population. Alternative D balances the resource conservation and development approaches, but is generally closer in line with resource development.

Programs to manage health and safety include the management of Abandoned Mine Lands (AMLs), coal seam fires, physical hazards, hazardous substances, and hydrogen sulfide gas. Impacts to the health and safety program would result from management that affects the risk of accidents in the areas in which AMLs, geologic hazards, or hazardous waste and materials spills or releases occur. Beneficial impacts to health and safety from management of AML sites and coal seam fires would occur under all alternatives: under all alternatives, the BLM and Wyoming Department of Environmental Quality will identify and plan for remediation of AML and coal seam fire sites. Under all alternatives, the BLM expects the impacts from management of hazardous substances to be similar (beneficial). Alternative C, with the greatest anticipated amount of mineral activity, could increase the generation, use, transportation, and disposal of hazardous substances, but spill response plans, stipulations, and applicable laws and regulations would reduce potential impacts.

While minority and low-income populations exist in the planning area, none of the alternatives are expected to result in disproportionate adverse impacts to these populations.

Impacts to tribal treaty rights can include limitations on access to tribal hunting, fishing, or resource collection areas that were reserved by certain treaty. Impacts to such resources are usually identified on a project specific basis in consultation with the appropriate tribes. The Supreme Court determined in United States v. Sioux Nation of Indians, that the U.S. Government violated the terms of the Fort Laramie Treaty of 1868 by taking lands that were entitled to the tribes by the treaty. The Sioux Nation declined to take compensation from the U.S. Government, as they did not want to give up their claim for the land. The entire planning area is within the original boundaries of the Sioux Nation as defined by the treaty.

The Next Steps

This Draft RMP and EIS, now issued, provides 90 days for public comment. A series of public hearings on this Draft RMP and EIS are scheduled during the 90-day comment period. Following the 90-day public comment period, the BLM will prepare a Final EIS considering comments submitted. Information regarding the public meetings and other information regarding next steps will be available on the RMP project website: http://www.blm.gov/wy/st/en/programs/Planning/rmps/buffalo.html.

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Reader's Guide to this Document

Chapter 1. Purpose and Need for Action. This chapter introduces the Draft Resource Management Plan and Environmental Impact Statement (Draft RMP and EIS), describes the purpose and need to which Bureau of Land Management (BLM) is responding, provides an overview of the BLM planning process, identifies planning issues and criteria, summarizes consultation and coordination, and identifies topics not addressed by this RMP revision.

Chapter 2. Resource Management Alternatives. Chapter 2 describes how the four alternatives (A through D) were developed, the components and content of each alternative, and discusses the alternatives considered but eliminated from further consideration. It also presents a comparative summary of impacts of each alternative. Resource discussions in chapters 2, 3, and 4 are organized according to the following eight resource topics:

1000. Physical Resources – Air Quality, Geological Resources, Soil, Water Resources, and Cave and Karst Resources

2000. Mineral Resources – Locatable, Leasable, and Salable Minerals

3000. Fire and Fuels Management – Unplanned Fire (Wildfire), Planned Fire (Prescribed Fire), and Stabilization and Rehabilitation

4000. Biological Resources – Vegetation, Fish and Wildlife, and Special Status Species

5000. Heritage and Visual Resources – Cultural, Paleontological, and Visual

6000. Land Resources – Forest Products, Lands and Realty, Renewable Energy, Rights-of-Way and Corridors, Travel and Transportation Management, Recreation, Lands with Wilderness Characteristics, and Livestock Grazing Management

7000. Special Designations – Areas of Critical Environmental Concern, Scenic or Back Country Byways, Wild and Scenic Rivers, and Wilderness Study Areas

8000. Socioeconomic Resources – Social and Economic Conditions, Health and Safety, Environmental Justice, and Tribal Treaty Rights

Chapter 3. Affected Environment. This chapter describes the planning area and the existing environmental conditions that could be impacted by the alternatives.

Chapter 4. Environmental Consequences. Chapter 4 forms the scientific and analytic basis for comparing environmental impacts of each alternative. Impacts generally are described in terms of direct or indirect and short-term or long-term, when applicable. Potential cumulative and unavoidable impacts and irreversible and irretrievable commitments also are discussed in this chapter.

Chapter 5. References. This chapter provides full citation information for all references cited within the document.

Chapter 6. List of Preparers. This chapter provides a list of the names and project roles of the individuals involved in the preparation of this document.

Glossary. The glossary defines select terms used throughout this document.

Appendices. The appendices include documents that support existing resource conditions or situations, substantiate analyses, provide resource management guidance, explain processes, or provide information directly relevant or supporting conclusions in the Draft RMP and EIS. Maps referenced in the Draft RMP and EIS are included as a separate appendix. In hardcopy documents, maps can be found on a compact disk (CD) attached to the inside back cover of the document. For CD versions of the document, maps are provided as separate files on the CD. Electronic versions of the maps are also available on the project website: http://www.blm.gov/wy/st/en/programs/Planning/rmps/buffalo.html. Twenty-one appendices are included.

Acronyms and Abbreviations

°C:
Degrees Celsius

°F:
Degrees Fahrenheit

AAQS:
Ambient Air Quality Standards

ACEC:
Area of Critical Environmental Concern

ADA:
Americans with Disabilities Act of 1990

AIRFA:
American Indian Religious Freedom Act

AML:
Abandoned Mine Land

AMP:
Allotment Management Plan

AMS:
Analysis of the Management Situation

ANC:
Acid Neutralizing Capacity

AO:
Authorized Officer

AOP:
Annual Operating Plan

APD:
Application for Permit to Drill

APHIS:
Animal and Plant Health Inspection Service

APHIS-PPQ:
Animal and Plant Health Inspection Service - Plant Protection and Quarantine

API:
American Petroleum Institute

APLIC:
Avian Power Line Interaction Committee

AQD:
Air Quality Division

AQRV:
Air Quality Related Value

ARS:
Agricultural Research Service

ASCS:
Agricultural Stabilization and Conservation Service

ATV:
All-terrain Vehicle

AUM:
Animal Unit Month

BA:
Biological Assessment

BACT:
Best Available Control Technology

BAR:
Burned Area Rehabilitation

BBS:
Breeding Bird Survey

BCB:
Back Country Byway

BCC:
Bird of Conservation Concern

BCSB:
Back Country and Scenic Byway

BEA:
Bureau of Economic Analysis

BFO:
Buffalo Field Office

BHMA:
Burnt Hollow Management Area

BLM:
Bureau of Land Management

BMP:
Best Management Practice

BMU:
Bear Management Unit

BR:
Biological Resources

BTEX:
Benzene, Toluene, Ethylbenzene, and Xylene

Bti:
Bacillus Thuringiensis

BTU:
British Thermal Unit

CAA:
Clean Air Act

CASTNet:
Clean Air Status & Trends Network

CAZ:
Conflict Administration Zone

CBM:
Coalbed Methane

CBNG:
Coalbed Natural Gas

CCS:
Carbon capture and storage

CEQ:
Council on Environmental Quality

CERCLA:
Comprehensive Environmental Response, Compensation, and Liability Act

CFR:
Code of Federal Regulations

CH_4:
Methane

CMAQ:
Community Multiscale Air Quality

CO:
Carbon Monoxide

CO_2:
Carbon Dioxide

CO_2eq:
Carbon Dioxide Equivalents

COA:
Condition of Approval

CORE:
Conservation and Outdoor Recreation Education

CRM:
Coordinated Resource Management

CRMP:
Cultural Resource Management Plan

CRPP:
Cultural Resource Project Plan

CSU:
Controlled Surface Use

CUA:
Common Use Area

CWA:
Clean Water Act

CWP:
Citizens' Wilderness Proposal

CWPP:
Community Wildfire Protection Plan

dBA:
A-weighted decibels

DDCT:
Disturbance Density Calculation Tool

DEQ:
Department of Environmental Quality

DFC:
Desired Future Condition

DOD:
U.S. Department of Defense

DOE:
U.S. Department of Energy

DOI:
U.S. Department of the Interior

DPC:
Desired Plant Community

E&P:
Exploration and Production

EA:
Environmental Assessment

EEA:
Environmental Education Area

EIS:
Environmental Impact Statement

EO:
Executive Order

EOR:
Enhanced Oil Recovery

EPA:
Environmental Protection Agency

ERMA:
Extensive Recreation Management Area

ES&R:
Emergency Stabilization and Rehabilitation

ESA:
Endangered Species Act

ESD:
Ecological Site Description

ESRI:
Environmental Systems Research Inc

FAMS:
Facility Asset Management System

FAN:
Final Abandonment Notice

FCLAA:
Federal Coal Leasing Amendment Act

FEIS:
Final Environmental Impact Statement

FGDC:
Federal Geographic Data Committee

FLPMA:
Federal Land Policy and Management Act

FM:
Fire and Fuels Management

FMP:
Fire Management Plan

FOCRA:
Federal Onshore Control and Reclamation Act

FONSI:
Finding of No Significant Impact

FORVIS:
Forest Vegetation Information System

FR:
Federal Register

FRCC:
Fire Regime Condition Class

FUP:
Free-use Permit

FY:
Fiscal Year

GHG:
Greenhouse Gas

GIS:
Geographic Information System

GPS:
Global Positioning System

GWP:
Global Warming Potential

H_2S:
Hydrogen sulfide

HAP:
Hazardous Air Pollutant

HFRA:
Healthy Forest Restoration Act

HMA:
Herd Management Area

HMP:
Habitat Management Plan

HPD:
High Plains District

HR:
Heritage and Visual Resources

HUC:
Hydrologic Unit Code

IBLA:
Interior Board of Land Appeals

IM:
Instruction Memorandum

IMP:
Interim Management Policy

IMPLAN:
Impact Analysis for Planning Model

IMPROVE:
Interagency Monitoring of Protected Visual Environments

IOGCC:
Interstate Oil and Gas Compact Commission

IPCC:
Intergovernmental Panel on Climate Change

IPM:
Integrated Pest Management

IPMP:
Integrated Pest Management Plan

ISR:
In Situ Recovery

KCLA:
Known Coal Leasing Area

kV:
kilovolt

LAC:
Limit of Acceptable Change

LBA:
Lease By Application

LHA:
Land Health Assessment

LOC:
Level of Concern

LQD:
Land Quality Division

LR:
Land Resources

LRP:
Limited Reclamation Potential

LRR:
Land Resource Region

LWC:
Lands with Wilderness Characteristics

MACT:
Maximum Achievable Control Technology

MBTA:
Migratory Bird Treaty Act

mcf:
Thousand cubic feet

MFP:
Management Framework Plan

MIM:
Multiple Indicator Monitoring

MLA:
Mineral Leasing Act

MLP:
Master Leasing Plan

MLRA:
Major Land Resource Area

MMBF:
Million Board Feet

MMT:
Million Metric Tons

MOU:
Memorandum of Understanding

MR:
Mineral Resources

MRB:
Missouri River Basin

MTP:
Master Title Plat

MZ:
Management Zone

N_2O:
Nitrous oxide

NAAQS:
National Ambient Air Quality Standards

NADP:
National Atmospheric Deposition Program

NAGPRA:
Native American Graves Protection and Repatriation Act

NAWMP:
North American Waterfowl Management Plan

NCP:
National Contingency Plan

NCSS:
National Cooperative Soil Survey

NEI:
National Emission Inventory

NEPA:
National Environmental Policy Act

NFDRS:
National Fire Danger Rating System

NFPORS:
National Fire Plan Operating and Reporting System

NH_4:
Ammonium

NHPA:
National Historic Preservation Act

NO_2:
Nitrogen dioxide

NOA:
Notice of Availability

NOI:
Notice of Intent

NO_x:
Nitrogen Oxide

NPDES:
National Pollutant Discharge Elimination System

NPLD:
National Public Lands Day

NPP:
Net Primary Production

NRC:
Nuclear Regulatory Commission

NRCS:
Natural Resources Conservation Service

NREL:
National Renewable Energy Laboratory

NRHP:
National Register of Historic Places

NSCR:
Nonselective Catalytic Reduction

NSO:
No Surface Occupancy

NSS:
Native Species Status

NTT:
National Technical Team

O&G:
Oil and Gas

O_3:
Ozone

OHV:
Off-highway Vehicle

ONRR:
Office of Natural Resource Revenue

ORV:
Outstandingly Remarkable Value

OSM:
Office of Surface Mining Reclamation and Enforcement

PFC:
Proper Functioning Condition

PFYC:
Potential Fossil Yield Classification

PM_{10}:
Particulate Matter less than 10 microns

$PM_{2.5}$:
Particulate Matter less than 2.5 microns

POO:
Plan of Operation

PPB:
Parts Per Billion

PPM:
Parts Per Million

PR:
Physical Resources

PRB:
Powder River Basin

PRLA:
Preference Right Lease Application

PSB:
Project-Specific Basis

PSD:
Prevention of Significant Deterioration

PUP:
Pesticide Use Protocol

R&PP:
Recreation and Public Purpose

R&VS:
Recreation and Visitor Services

RA:
Resource Advisor

RAAT:
Reduced Agent Area Treatment

RAMP:
Recreation Area Management Plan

RCRA:
Resource Conservation and Recovery Act

RCT:
Regional Coal Team

RDF:
Required Design Feature

READ:
resource advisor

REE:
Rare Earth Elements

REL:
Reference Exposure Level

RFA:
Reasonable Foreseeable Action

RFD:
Reasonable Foreseeable Development

RMA:
Recreation Management Area

RMACC:
Rocky Mountain Area Coordination Center

RMP:
Resource Management Plan

RMZ:
Recreation Management Zone

ROD:
Record of Decision

ROW:
Right-of-Way

RSC:
Recreation Setting Characteristic

RVD:
Recreation Visitor Day

S&G:
Sand and Gravel

SARA:
Superfund Amendments and Reauthorization Act

SD:
Special Designations

SGCN:
Species of Greatest Conservation Need

SHPO:
State Historic Preservation Office

SIP:
State Implementation Plan

SLAMS:
State and Local Air Monitoring Station

SMCRA:
Surface Mining Control and Reclamation Act

SMU:
Soil Map Unit

SO_2:
Sulfur dioxide

SO_4:
Sulfate

SOP:
Standard Operating Procedure

SPM:
Special Purpose Monitoring

SR:
Socioeconomic Resources

SRA:
Subsequent Report of Abandonment

SRHA:
Stockraising Homestead Act

SRMA:
Special Recreation Management Area

SRP:
Special Recreation Permit

SSF:
Soil Surface Factor

SSS:
Special Status Species

SSURGO:
Soil Survey Geographic Database

STATSGO2:
State Soils Geographic Database

STM:
State and Transitional Model

SVR:
Standard Visual Range

SWAP:
State Wildlife Action Plan

SWPPP:
Storm Water Pollutant Prevention Plan

T&E:
Threatened and Endangered

TCP:
Traditional Cultural Property

TDS:
Total Dissolved Solids

TIE:
Toxicity Identification Evaluation

TLS:
Timing Limitation Stipulation

TMA:
Travel Management Area

TMDL:
Total Maximum Daily Load

TNC:
The Nature Conservancy

TSD:
Technical Support Document

TTM:
Travel and Transportation Management

TTMP:
Travel and Transportation Management Plan

U.S.C.:
United States Code

U_3O_8:
Triuranium Octoxide

UIC:
Underground Injection Control

URA:
Unit Resource Analysis

USDA:
U.S. Department of Agriculture

USFS:
U.S. Forest Service

USFWS:
U.S. Fish and Wildlife Service

USGS:
U.S. Geological Survey

VCR:
Visual Contrast Rating

VOC:
Volatile Organic Compound

VRI:
Visual Resource Inventory

VRM:
Visual Resource Management

WAAQS:
Wyoming Ambient Air Quality Standard

WAAS:
Wide Area Augmentation System

WAFWA:
Western Association of Fish and Wildlife Agencies

WARMS:
Wyoming Air Resource Monitoring System

WDEQ:
Wyoming Department of Environmental Quality

WEG:
Wind Erodibility Group

WET:
Whole Effluent Toxicity

WGFD:
Wyoming Game and Fish Department

WHMA:
Wildlife Habitat Management Area

WHPD:
Wyoming High Plains District

WMA:
Wyoming Mining Association

WNS:
White-nose Syndrome

WNv:
West Nile Virus

WO:
Washington Office

WOGCC:
Wyoming Oil and Gas Conservation Commission

WRAP:
Western Regional Air Partnership

WSA:
Wilderness Study Area

WSEO:
Wyoming State Engineer's Office

WSFD:
Wyoming State Forestry Division

WSR:
Wild and Scenic River

WUI:
Wildland-urban Interface

WYNDD:
Wyoming Natural Diversity Database

WYPDES:
Wyoming Pollutant Discharge Elimination System

WYSO:
Wyoming State Office

$\mu g/m^3$:
micrograms per cubic meter