Table of Contents–Volume 2

Cover Sheet
Table of Contents i
List of Maps iii
List of Tables iv
List of Figures vi

Chapter IV: Environmental Consequences

A. Introduction 4-5
  1. How to Read this Chapter 4-5
  2. Analysis Assumptions 4-7
  3. Types of Effects 4-26
  4. Critical Elements 4-27
  5. Availability of Data and Incomplete Information 4-27
B. Resources 4-29
  1. Air Quality and Soil and Water Resources 4-29
  2. Vegetation 4-42
  3. Fish and Wildlife 4-55
  4. Special Status Species 4-84
  5. Fire Management and Ecology 4-105
  6. Cultural Resources 4-106
  7. Paleontological Resources 4-107
  8. Visual Resources 4-109
  9. Wilderness Characteristics 4-115
C. Resource Uses 4-124
  1. Forest Products 4-124
  2. Livestock Grazing 4-130
  3. Minerals 4-135
  4. Recreation Management 4-147
  5. Travel Management/OHV 4-160
  6. Renewable Energy 4-169
  7. Lands and Realty Actions 4-169
D. Special Designations 4-175
  1. Areas of Critical Environmental Concern and Research Natural Areas 4-175
  2. Iditarod National Historic Trail 4-179
  3. Wild and Scenic Rivers 4-180
E. Social and Economic 4-182
  1. Public Safety 4-182
  2. Social and Economic Conditions 4-183
F. Subsistence 4-190
G. Cumulative Impacts 4-203
  1. Activities Considered in the Cumulative Case 4-204
  2. Resources 4-207
  3. Resource Uses 4-214

4. Special Designations....4-219
5. Social and Economic....4-220
6. Subsistence....4-223
H. Irreversible or Irretrievable Commitment of Resources....4-224
1. Resources....4-224
2. Resource Uses....4-226
3. Social and Economic....4-228
I. Unavoidable Adverse Impacts....4-229
1. Resources....4-229
2. Resource Uses....4-232
3. Special Designations....4-233
4. Social and Economic....4-233
5. Subsistence....4-234

Chapter V: Consultation and Coordination

A. Introduction....5-3
B. Public Participation Opportunities....5-3
1. Scoping....5-3
2. Other Outreach Efforts....5-4
C. Consultation....5-4
1. U.S. Fish and Wildlife Service and National Marine Fisheries Service....5-4
2. Tribal Consultation....5-5
D. Collaborative Efforts....5-5
1. Cooperation with the State of Alaska....5-5
2. Other Collaborative Efforts....5-5
E. Plan Distribution....5-6
F. List of Preparers....5-9

Appendices

Appendix A: Required Operating Procedures, Stipulations, and Standard Lease Terms.... A-1
Appendix B: ACEC and RNA Comparison Tables.... B-1
Appendix C: SRMA Comparison Tables.... C-1
Appendix D: ANILCA Section 810 Analysis of Subsistence Impacts.... D-1
Appendix E: BLM Policy for Structure Protection.... E-1

Acronyms

Glossary

References

List of Maps

Map 1-1. General Land Status 1-7
Map 2-1. Visual Resource Management Alternative B 2-23
Map 2-2. Visual Resource Management Alternative C 2-25
Map 2-3. Visual Resource Management Alternative D 2-27
Map 2-4. Grazing on BLM Lands Alternative C 2-37
Map 2-5. Grazing on BLM Lands Alternative D 2-38
Map 2-6. Proposed Fluid Leasable Mineral Management Alternative B 2-45
Map 2-7. Proposed Fluid Leasable Mineral Management Alternative C 2-47
Map 2-8. Proposed Fluid Leasable Mineral Management Alternative D 2-49
Map 2-9. Proposed Solid Mineral Exploration and Prospecting Alternative C 2-55
Map 2-10. Proposed Solid Mineral Exploration and Prospecting Alternative D 2-57
Map 2-11. Proposed Locatable Mineral Management Alternative C 2-63
Map 2-12. Proposed Locatable Mineral Management Alternative D 2-65
Map 2-13. Proposed Special Recreation Management Areas Alternative B 2-75
Map 2-14. Proposed Special Recreation Management Areas Alternative C 2-77
Map 2-15. Proposed Special Recreation Management Areas Alternative D 2-79
Map 2-16. Proposed OHV Management Classes on BLM Lands Alternative C 2-87
Map 2-17. Proposed OHV Management Classes on BLM Lands Alternative D 2-89
Map 2-18. Lands for Retention Alternatives B, C, and D 2-101
Map 2-19. Proposed Transportation Corridor 2-103
Map 2-20. Proposed Areas of Critical Environmental Concern (ACEC) Alternative C 2-109
Map 2-21. Proposed Areas of Critical Environmental Concern (ACEC) Alternative D 2-111
Map 2-22. Rivers Suitable for Wild and Scenic Designation Alternative C 2-117
Map 3-1. Major Land Resource Areas 3-11
Map 3-2. Permafrost 3-13
Map 3-3. Average Annual Precipitation 3-21
Map 3-4. Municipal Water Sources 3-23
Map 3-5. USGS Hydrological Unit Codes (HUC) 3-25
Map 3-6. Vegetation and Land Cover Types (1 Kilometer Resolution) 3-41
Map 3-7. Western Arctic Caribou Herd Seasonal Ranges and Fire Perimeters 3-43
Map 3-8. Rare Plant Species Designated by Alaska Natural Heritage Program 3-45
Map 3-9. Anadromous Fish Rivers 3-51
Map 3-10. Kivalina River Dolly Varden Spawning Grounds 3-53
Map 3-11. Moose, Muskox, and Dall Sheep Distributions 3-67
Map 3-12. Caribou Distribution 3-69
Map 3-13. BLM-Alaska Sensitive Plant Species 3-81
Map 3-14. Lakes Likely Containing Arctic Char 3-84
Map 3-15. Threatened, Endangered, and Candidate Species 3-93
Map 3-16. Sensitive Species: Waterfowl and Shorebird Occurrences 3-95
Map 3-17. BLM Sensitive Species: Passerine Bird Occurrences 3-97
Map 3-18. Fire History 3-111
Map 3-19. Canadian Forest Fire Danger Rating System—Fuels 3-113
Map 3-20. Existing Fire Management Options 3-115
Map 3-21. Visual Resource Management Overall Inventory Classes 3-131
Map 3-22. Wilderness Characteristics Units 3-136
Map 3-23. Spruce Bark Beetle Damage 3-140
Map 3-24. Generalized Vegetation (1 Kilometer Resolution) 3-141
Map 3-25. Grazing Allotments 3-145
Map 3-26. Federal Mineral Leasable Status 3-155

Map 3-27. Oil and Gas Basins 3-157
Map 3-28. Coal Resources 3-159
Map 3-29. Existing Locatable Mineral Status Including Hardrock and Placer Known Mineral Occurrences 3-199
Map 3-30. Annual Placer Mining Application Filings 1989-2004 3-201
Map 3-31. Recreation Opportunity Spectrum 3-215
Map 3-32. R.S. 2477 Routes, 17(b) Easements, and Winter Trails 3-221
Map 3-33. Native Allotments and Land Status 3-231
Map 3-34. Nominated Research Natural Areas (RNA) and Existing Areas of Critical Environmental Concern (ACEC) 3-239
Map 3-35. Rivers Inventoried for Wild and Scenic Values 3-247
Map 3-36. Potential Hazardous Material Sites 3-257
Map 3-37. Subsistence Use Areas—Mammals Northwest AK Communities 3-285
Map 3-38. Subsistence Use Areas—Fish Northwest AK Communities 3-286
Map 3-39. Subsistence Use Areas—Marine Mammals Northwest AK Communities 3-287
Map 3-40. Subsistence Use Areas—Mammals Seward Peninsula Communities 3-288
Map 3-41. Subsistence Use Areas—Fish Seward Peninsula Communities 3-289
Map 3-42. Subsistence Use Areas—Marine Mammals Seward Peninsula Communities 3-290
Map 3-43. Subsistence Use Areas—Mammals Upper Kobuk/Selawik River Communities 3-291
Map 3-44. Subsistence Use Areas—Fish Upper Kobuk/Selawik River Communities 3-292
Map 3-45. Subsistence Use Areas—Marine Mammals Upper Kobuk/Selawik River Communities 3-293

List of Tables

Table 1-1. Land Status within the Kobuk-Seward Peninsula Planning Area 1-6
Table 1-2. Steps in the BLM Land Use Planning Process 1-16
Table 2-1. Fish and Wildlife—Summary of Alternatives 2-12
Table 2-2. Fire Management and Ecology—Summary of Alternatives 2-16
Table 2-3. Cultural Resources—Summary of Alternatives 2-19
Table 2-4. Visual Resources—Summary of Alternatives 2-22
Table 2-5. Forest Products—Summary of Alternatives 2-32
Table 2-6. Forest Products—Constraints on Specific Areas 2-33
Table 2-7. Livestock Grazing—Summary of Alternatives 2-36
Table 2-8. Fluid Leasable Minerals—Summary of Alternatives 2-43
Table 2-9. Solid Leasable Minerals—Summary of Alternatives 2-54
Table 2-10. Locatable Minerals—Summary of Alternatives 2-61
Table 2-11. Mineral Materials—Summary of Alternatives 2-68
Table 2-12. Recreation Management—Summary of Alternatives 2-72
Table 2-13. Travel Management Areas for Alternative C 2-83
Table 2-14. Travel Management Areas for Alternative D 2-84
Table 2-15. Travel Management/OHV—Summary of Alternatives 2-85
Table 2-16. Lands and Realty—Summary of Alternatives 2-97
Table 2-17. Areas of Critical Environmental Concern and Research Natural Areas—Summary of Alternatives 2-108
Table 2-18. Wild and Scenic Rivers—Summary of Alternatives 2-115
Table 2-19. Summary and Comparison of Effects on Resources by Alternatives 2-123
Table 3-1. Water Resources Data for Selected Rivers in the Planning Area (2004-05) 3-18
Table 3-2. Vegetation Types Within the Planning Area 3-28

Table 3-3. BLM-Alaska Sensitive Plant Species and Other Rare Plant Species Known to Occur Within the Kobuk-Seward Peninsula Planning Area....3-32
Table 3-4. Non-native Plant Species Known to Occur in the Planning Area....3-40
Table 3-5. BLM Sensitive Plant Species in Alaska....3-72
Table 3-6. Global and State Ranking Criteria....3-73
Table 3-7. Fish Special Status Species Occurring in the Planning Area....3-83
Table 3-8. Wildlife Special Status Species Likely to Occur in the Planning Area....3-85
Table 3-9. Fire Regimes in the Kobuk-Seward Peninsula Planning Area....3-101
Table 3-10. Fuel Types in the Planning Area....3-103
Table 3-11. Fire Management Options....3-107
Table 3-12. Current Fire Management Options in the Planning Area....3-107
Table 3-13. Known Cultural Resource Sites in the Planning Area by Land Status and Chronological Period....3-125
Table 3-14. Sites or Site Components by Cultural Affiliation....3-126
Table 3-15. VRM Inventory for the Kobuk-Seward Peninsula Planning Area....3-130
Table 3-16. Grazing Allotments in the Kobuk-Seward Peninsula Planning Area....3-144
Table 3-17. HLMP by Land Ownership....3-168
Table 3-18. Wales HLMP Surface Disturbance Summary....3-170
Table 3-19. Kougarok HLMP Surface Disturbance Summary....3-172
Table 3-20. Imnachuk HLMP Surface Disturbance Summary....3-174
Table 3-21. Imnachuk MLMP Surface Disturbance Summary....3-175
Table 3-22. Teller HLMP Surface Disturbance Summary....3-176
Table 3-23. Nome East HLMP Surface Disturbance Summary....3-178
Table 3-24. Nome West HLMP Surface Disturbance Summary....3-182
Table 3-25. Darby Mountains HLMP Surface Disturbance Summary....3-187
Table 3-26. Eastern Seward Peninsula/Western Alaska HLMP Surface Disturbance Summary....3-188
Table 3-27. Shaktoolik HLMP Surface Disturbance Summary....3-190
Table 3-28. Ambler HLMP Surface Disturbance Summary....3-191
Table 3-29. Omar-Kiana HLMP Surface Disturbance Summary....3-193
Table 3-30. Red Dog HLMP Surface Disturbance Summary....3-195
Table 3-31. Red Dog MLMP Surface Disturbance Summary....3-197
Table 3-32. Serialized Mineral Material Actions in the Planning Area 1980-2004....3-204
Table 3-33. ROS Class Acreages and Descriptions....3-213
Table 3-34. Withdrawals Affecting BLM Land....3-228
Table 3-35. Withdrawals for Other Agencies Excluding ANILCA....3-229
Table 3-36. Eligible Rivers within the Planning Area....3-245
Table 3-37. Activities and Associated Hazardous Materials....3-252
Table 3-38. Potential Effects and Risks to Environmental Media....3-253
Table 3-39. Potential Effects and Risks to Human Activities....3-254
Table 3-40. Growth of Alaska Native Population....3-261
Table 3-41. Population per Community, Historic U.S. Census Data....3-261
Table 3-42. Population of Selected Boroughs....3-262
Table 3-43. Employment by Sector....3-263
Table 3-45. 2004 Per Capita Tax Revenues in Dollars....3-267
Table 3-46. Environmental Justice Data from the 2000 Census....3-269
Table 3-47. Resources Harvested and Reported Per Year....3-280
Table 3-48. Market Basket Comparison....3-282
Table 3-49. Subsistence Resource Harvest and Economic Significance....3-284
Table 4-1. Anticipated Levels of Activity for Resource Management....4-11
Table 4-2. Livestock Grazing Assumptions....4-12

Table 4-3. Crude Oil Spills Estimated Over the Production Life of the RMP 4-17
Table 4-4. Small Refined Oil Spills <500 bbl Estimated Over the Production Life of the RMP 4-17
Table 4-5. Assumed Size Distribution for Small Crude Oil Spills for the Production Life of the RMP 4-18
Table 4-6. Anticipated New Placer Mines 4-22
Table 4-7. Proposed Riverbank Setbacks under Alternatives C and D 4-140
Table 4-8. Potential ACEC/RNA Units Under Alternatives C and D 4-143
Table 4-9. Special Recreation Management Area Designations by Alternative.....4-147
Table 4-10. Management Emphasis Areas within the Extensive Recreation Management Area by Alternative 4-147
Table 4-11. OHV Designations by Alternative 4-160
Table 4-12. Outstandingly Remarkable Values Cross-reference for Eligible Rivers.....4-180
Table 4-13. Effects of the Alternative on Employment and Personal Income by Place of Residence with Oil at $30/bbl 4-186
Table 4-14. Summary of Estimated Direct Input to Employment, Income, and Revenue.....4-188
Table 5-1. Kobuk-Seward RMP/EIS Planning Team 5-9
Table A-1. Recommended Water Bar Spacing..... A-6
Table A-2. Oil and Gas Leasing Stipulations A-27
Table B-1. Kigluaik ACEC and Mount Osborn RNA—Alternative Comparison Table..... B-3
Table B-2. Western Arctic Caribou Herd Calving and Insect Relief Habitat ACEC—Alternative Comparison Table B-6
Table B-3. McCarthy's Marsh ACEC—Alternative Comparison Table..... B-9
Table B-4. Kuzitrin River ACEC—Alternative Comparison Table B-11
Table B-5. Nulato Hills ACEC—Alternative Comparison Table B-13
Table B-6. Shaktoolik, Ungalik, and Inglutalik Watershed ACECs—Alternative Comparison Table..... B-15
Table C-1. Salmon Lake-Kigluaik SRMA—Alternative Comparison Table C-3
Table C-2. Squirrel River SRMA—Alternative Comparison Table C-5

List of Figures

Figure 3-1. Estimated Fire Return Intervals for Interior Alaska.....3-100
Figure 3-2. Cultural Chronology for Northwest Alaska.....3-117
Figure 3-3. Base Metal, Nickel, and Tin Prices and Labor Costs 1970-2004 3-164
Figure 3-4. Precious Metal, Labor, and Equipment Costs 1970-2004 3-165
Figure 3-5. Summary of Mining Surface Disturbance (excluding Red Dog) by Land Ownership in the Planning Area 3-166
Figure 3-6. HLMP Surface Disturbance by Land Ownership 1989-2004.....3-167
Figure 3-7. Annual Mineral Materials Production 1980-2004.....3-207
Figure 3-8. Comparison of Per Capita Income (2000) 3-262
Figure 3-9. Percent of Private Sector Workers Who Are Local Residents.....3-265