

CHAPTER 7

REFERENCES, ACRONYMS, GLOSSARY AND INDEX

7.1 REFERENCES

- Agrium. 2002. North Rasmussen Ridge Mine Storm Water Pollution Prevention Plan. Agrium CPO, revised January 2002. Soda Springs, Idaho.
- Agrium. 2008. Phosphate Brochure. [Web Page]. Located at http://www.agrium.com/uploads/phosphate_brochure_ver3_092205_single.pdf. Accessed: October 16, 2008.
- Agrium, Astaris LLC., BLM, Idaho Department of Lands, J.R. Simplot Company, Monsanto Company, USFS. 2005. Selenium Management Practices. A cooperative document. 52 pp.
- ARCADIS. 2009. Groundwater Modeling Report, Blackfoot Bridge Project. Prepared for U.S. Department of Interior Bureau of Land Management, Idaho Falls District, Pocatello Field Office.
- Arena, S. 2008. Personal communication [*Dec 04* e-mail to Kyle Free, BLM, Soda Springs, Idaho. *RE: Canada Lynx inclusion in the EIS*]. Biologist, USFWS, Chubbuck, Idaho. 1 page.
- Armstrong, F.C. 1969. Geologic Map of the Soda Springs Quadrangle, Southeastern Idaho: United States Geological Survey Miscellaneous Geological Investigations Map I-557.
- Armstrong, F. and S. Oriel. 1965. Tectonic Development of the Idaho-Wyoming Thrust Belt. American Association of Petroleum Geologist Bulletin, v. 49, p. 1847-1866.
- Armstrong, R., W. Leeman, and H. Malde. 1975. K-Ar Dating, Quaternary and Neogene Volcanic Rocks of the Snake River Plane, Idaho: Amer. Jour. Sci., v. 275, p. 225-251.
- Balistreri L.S. and T.T. Chao. 1990. Adsorption of Selenium by Amorphous Iron Oxide-Hydroxide and Manganese Dioxide. *Geochimica et Cosmochimica Acta*, vol. 54, p.739-751.
- Bar-Yosef, B. and D. Meek. 1987. Selenium Adsorption by Kaolinite and Montmorillonite. *Soil Science*, vol. 144, No. 1 July 1987, p. 11-19.
- Beauwens, T., P. De Cannière, H. Moors, H. Wang, and M. Maes. 2005. Studying the Migration Behaviour of Selenate in Boom Clay by Electromigration. *Engineering Geology*, v. 77, 3-4, pp. 285-293.
- Bell, L.H. 1982. Lewis H. Bell, Industrial Noise Control, Fundamentals and Applications, Marcel Dekker, New York, NY, 1982
- Berglund, J. 1999. Montana Wetland Assessment Method. Montana Department of Transportation, Environmental Services, Helena, MT.

- Bio-Form. 2003. Approximate Soil Bulk Densities. [Web Page]. Located at <http://www.bio-formllc.com/obt-soilbulkdensities.html>. Accessed: March 16, 2009.
- Blanchard, T. 2002. Hardrock Phosphate Mining in Idaho, A Report by the Idaho Conservation League and Boulder-White Clouds Council. Idaho Conservation League, Boise, Idaho and Boulder-White Clouds Council, Ketchum, Idaho. 59 pages.
- Buck, B. and A. Mayo. 2004. Water Budget for the Groundwater Model. June 30 2004 memorandum to James Blair, Scott Gerwe, and Lori Hammond of J.R. Simplot Company regarding analysis of recharge values for groundwater model.
- Bureau of Labor Statistics. 2009. Employment by Industry. [Web Page]. Located at <http://www.bls.gov/cew/>. Accessed: February 2, 2009.
- Butler, B.R. 1986. Prehistory of the Snake and Salmon River Area. Handbook of North American Indians, Volume 11: Great Basin, edited by Warren L. D’Azevedo. Pages 127-134. Smithsonian Institution, Washington.
- Butterfield, B. 2008. Personal communication [December 9 email to R. Cruz, ARCADIS, Highlands Ranch, Colorado. RE: Special status plants and animals, community ecology (wetlands, terrestrial communities), natural areas (RNAs, ACECs, etc.) and conservation sites, known species (plants and/or animals) in the area, and elk and mule deer winter ranges.] Idaho Department of Fish and Game, Boise, Idaho. 2 pages
- California Wildlife Habitat Relationships (CWHR) System. 1988-1990 and subsequent revisions. Life History Accounts and Range Maps. California Department of Fish and Game, Sacramento, California. [Web Page]. Located at <http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx> Accessed: March 31, 2009.
- Caribou County. 2006. Caribou County 2006 Comprehensive Plan. Caribou County Planning and Zoning Commission. [Web Page]. Located at <http://stage.cariboucounty.us/departments/285/PlanningandZoning.aspx>. Accessed: January 29, 2009.
- Caribou County. 2008. Zoning Ordinance of Caribou County; Revised February 2008. Caribou County Planning and Zoning Commission. [Web Page]. Located at <http://stage.cariboucounty.us/departments/285/PlanningandZoning.aspx>. Accessed: January 29, 2009.
- Caribou County Sheriff’s Office (CCSO). 2008. Caribou County Sheriff’s Blog. [Web Page]. Located at <http://cariboucountysheriff.blogspot.com/>. Accessed: September 11, 2008.
- Caribou Memorial Hospital (CMH). 2008. Services. [Web Page]. Located at <http://www.cariboumemorial.org/services.htm>. Accessed: September 11, 2008.
- Caribou-Targhee National Forest (CTNF). 2007. Phosphate Newsletter. August 16, 2007.
- CTNF. 2008. Phosphate Newsletter. October 10, 2008.

- Carpenter, D. 2009. Personal Communication [*Feb. 10* email to S. Effner, Whetstone Associates, Gunnison, Colorado. *RE: the Geology of the Blackfoot Bridge Project Area.*] Exploration Geologist, Monsanto. 13 pages.
- Casey, J.L. 2008. The RC Theory. Research Report 1-2008, Space and Science Research Center, January 22, 2008.
- Cathles, L. and K. Breen. 1983. Removal of Pyrite from Coal by Heap Leaching. University Park: Pennsylvania State University, p. E1.
- Causey, J.D. and P.R. Moyle. 2001. Digital database of mining-related features at selected historic and active phosphate mines, Bannock, Bear Lake, Bingham, and Caribou Counties, Idaho. USGS Open File Report 01-142.
- Chafetz, H. and A. Reed. 2000. Syndepositional Shallow Water Precipitation of Glauconite Minerals, *Sediment. Geol.*, v 136, p 29-42
- DePangher, M. 2007. Blackfoot Bridge Project Petrographic Report #UEG. A Consultant Report Prepared for Whetstone Associates, 10 p.
- Chalfoun A.D., F.R. Thompson III, and M.J. Ratnaswamy. 2002. Nest Predators and Fragmentation: A Review and Meta-Analysis. *Conservation Biology*. Vol. 16, No. 2: pp. 306-318.
- Chambers, J.C. 2006. Climate change and the Great Basin, in proceedings prepared for Collaborative Watershed Research and Management Conference: November 28-30, 2006, Reno, Nevada. [Web Page]. Located at http://www.cabnr.unr.edu/GreatBasinWatershed/Issues_Papers.pdf. Accessed: March 27, 2009.
- Cowan, C.E., J.M. Zachara, and C.T. Resch. 1990. Solution ion effects on the surface exchange of selenite on calcite. *Geochimica et Cosmochimica Acta*, v. 54, p. 2223-2234.
- DeCelles, P., H. Pile, and J. Coogan. 1993. Kinematic History of the Mead Thrust Based on Provenance of Bechler Conglomerate at Red Mountain, Idaho, Sevier Thrust Belt Tectonics, v. 12(6): 1436-1450.
- DePangher, M. 2007. Blackfoot Bridge Project Petrographic Report #UEG. A Consultant Report Prepared for Whetstone Associates, 10 p.
- Dion, N.P. 1969. Hydrologic Reconnaissance of the Bear River Basin in Southeastern Idaho. *Water Information Bulletin # 13*. Prepared by the United States Geological Survey in Cooperation with Idaho Department of Reclamation.
- Dion, N.P. 1974. An Estimate of Leakage from Blackfoot Reservoir to Bear River Basin. *Water Information Bulletin # 34*. Prepared by the United States Geological Survey in Cooperation with Idaho Department of Water Administration.
- Dorr, J.D. 1985. Newfound Cretaceous Dinosaurs and Other Fossils in Southeastern Idaho and Westernmost Wyoming, *Contributions from the University of Michigan Museum of Paleontology*, 27(3), pp. 73-85.

- Easterbrook, D.J. 2008. *Global Cooling is Here*, Global Research. ca, November 2, 2008.
- Edman, J. and R. Surdam. 1984. Influence of Overthrusting on Maturation of Hydrocarbons in the Phosphoria Formation, Wyoming-Idaho-Utah Overthrust Belt. *American Association of Petroleum Geologist Bulletin*, v. 68 (11), p. 1803-1817.
- Elrashidi, M.A., D.C. Adriano, S.M. Workman, and W.L. Lindsay. 1987. Chemical Equilibria of Selenium in Soils: A Theoretical Development. *Soil Science*, v. 144, n. 2, p. 141-152.
- Evans, J. 2004. Strain Distribution and Structural Evolution of the Meade Plate, Southeastern Idaho. In: *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 137-166.
- Fenneman, N.M. 1917. Physiographic Division of the United States: *Assoc. Am. Geographers Annals* 6, p. 19 – 98.
- Fessler, A.J., G. Möller, P.A. Talcott, and J.H. Exon. 2003. Selenium toxicity in sheep grazing reclaimed mining sites. *Vet. Human Toxicology*. 45(6):294-298
- Freeze, R.A. and J.A. Cherry. 1979. *Groundwater*. Prentice-Hall, Englewood Cliffs New Jersey, 604 p.
- Frid, A. and L. Dill. 2002. Human-caused Disturbances Stimuli as a Form of Predation Risk. *Conservation Ecology*. Vol. 6, No. 1.
- Fuller, C. and J. Davis. 1987. Processes and Kinetics of Cd²⁺ sorption by calcareous Aquifer Sand. *Geochim. Cosmochim. Acta*, v. 51, p: 1491-1502.
- Furniss, M.J., M. Love and S.A. Flanagan. 1997. *Diversions Potential at Road Stream Crossings*. USFS Water/Road Interaction Technology Series
- Furniss M.J., S. Flanagan and B. McFadin. 2000. Hydrologically-Connected Roads: An Indicator of the Influence of Roads on Chronic Sedimentation, Surface Water Hydrology, and Exposure to Toxic Chemicals. In: *Stream Notes*, produced by Stream Systems Technology Center, USFS Rocky Mountain Research Station, Fort Collins, Colorado. July 2000.
- Gillerman, V.S. and G.H. Bennett. 2007. Idaho Mining and Exploration. *Mining Engineering*. Vol. 60(5). Pp. 84-88.
- Glennon, M. and H. Krestor. 2005. Impacts to Wildlife from Low Density, Exurban Development. Information and Considerations for the Adirondack Park. *Wildlife Conservation Society*. Technical Paper No. 3.
- Goddard Institute for Space Studies. 2009. Surface Temperature Analysis. Located at: <http://data.giss.nasa.gov/gistemp/html>. Accessed: May 21, 2009.

- Gough, L.P., H.T. Shacklette, and A.A. Case. 1979. Selenium. Pages 40-44 in Element Concentrations Toxic to Plants, Animals, and Man. U.S. Geological Survey Bulletin 1466. U.S. Government Printing Office, Washington, D.C. 80 pp.
- Grace Chamber of Commerce (GCC). 2008. Grace Area Services. [Web Page]. Located at <http://www.graceidaho.com/html/services.html>. Accessed: September 9, 2008.
- Graham, R.T., R.L. Rodriguez, K.M. Paulin, R.L. Player, A.P. Heap, and R. Williams. 1999. The northern goshawk in Utah: habitat assessment and management recommendations. Gen. Tech. Rep. RMRS-GTR-22. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 48 p.
- Grauch, R.I., G.A. Desborough, G.P. Meeker, A.L. Foster, R.G. Tysdal, J.R. Herring, H.A. Lowers, B.A. Ball, R.A. Zielinski, and E.A. Johnson. 2004. Petrogenesis and Mineralogic Residence of Selected Elements in the Meade Peak Phosphatic Shale Member of the Permian Phosphoria Formation, Southeast Idaho. In: Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment, Hein, James R., ed. p. 189-226.
- Greater Yellowstone Coalition (GYC). 2006. Scoping Comments for the Proposed Blackfoot Bridge Mine and Reclamation.
- Greystone Environmental Consultants (Greystone). 2006a. Vegetation Community and Sensitive Plant Technical Report for The Blackfoot Bridge Project Environmental Impact Statement. February 2006. 29 pages.
- Greystone. 2006b. Soil Survey of the Blackfoot Bridge Project Area and the Ballard Mine Site. January 2006. 195 pages.
- Greystone. 2006c. Wildlife Technical Report for the Blackfoot Bridge Project Environmental Impact Statement. January 2006. 48 pages.
- Greystone. 2006d. Aquatic Survey Report For the Blackfoot Bridge Project Environmental Impact Statement. June 2006. 33 pages.
- Greystone. 2006e. Scoping Summary for the Blackfoot Bridge Mine Environmental Impact Statement. April 2006. 76 pages.
- Greiner Environmental Consultants (Greiner). 1977. Hydrology - Soda Springs Phosphate Project.
- Gucinski, H., M.J. Furniss, R.R. Ziemer, and M.H. Brookes. 2001. Forest roads: a synthesis of scientific information. U.S. Forest Service General Technical Report PNW-GTR-509. Pacific Northwest Research Station, Corvallis, Oregon. 120 pages.
- Hamilton, S. 2004. Review of Selenium Toxicity in the Aquatic Food Chain. U.S. Geological Survey, Columbia Environmental Research Center. Yankton, South Dakota.

- Hamilton, S.J. and K.J. Buhl. 2003. Selenium and other trace elements in water, sediment, aquatic plants, aquatic invertebrates, and fish from streams in southeastern Idaho near phosphate mining operations: May 2001. U.S. Geological Survey, Columbia Environmental Research Center, Field Research Station, Yankton, SD. 65 pages.
- Hansen, J.E. and S. Lebedeff. 1987: Global trends of measured surface air temperature. *J. Geophys. Res.*, 92, 13345-13372.
- Hardy, C.C., K.M. Schmidt, J.M. Menakis, and N.R. Samson. 2001. Spatial data for national fire planning and fuel management. *International Journal of Wildland Fire*. 10:353-372.
- Harris, C.M. 1991. *Handbook of Acoustical Measurement and Noise Control*. McGraw Hill, New York, NY, 1991
- Hayes, K.F., A.L. Roe, G.E. Brown, K.O. Hodgson, and G.A. Parks. 1987. In-Situ X-Ray Adsorption Study of Surface Complexes: Selenium Oxyanions on Alpha-FeOOH. *Science*, Vol. 238, p. 783-786.
- Hein, J. 2004. The Permian Earth. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 3-17.
- Hein, J., R. Perkins, and B. McIntyre. 2004a. Evolution of thought concerning the origin of the Phosphoria Formation, Western U.S. Phosphate Field. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 399-435.
- Hein, J., B. McIntyre, R. Perkins, D. Piper, and J. Evans. 2004b. Rex Chert Member of the Permian Phosphoria Formation: Composition, with Emphasis on Elements of Environmental Concern. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 399-435.
- Hem, J.D. 1989. *Study and Interpretation of the Chemical Characteristics of Natural Water*. United States Geological Survey Water-Supply Paper 2254, 263 pp.
- Herring J. and R. Grauch. 2004. Litho geochemistry of the Meade Peak Phosphatic Shale Member of the Phosphoria Formation, Southeast Idaho. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 321-366.
- Hopkins W.A., S.E. DuRant, B.P. Staub, C.L. Rowe, and B.P. Jackson. 2006. Reproduction, Embryonic Development, and Maternal Transfer of Contaminants in the Amphibian *Gastrophryne carolinensis*. *Environmental Health Perspectives*. Vol. 114. No. 5. Pp. 61-66.
- HydroGeoLogic, Inc. 1996. MODFLOW-SURFACT Software Version 2.2. Code Documentation Report.
- Idaho Commerce and Labor. 2006. Southeast Idaho News. [Web Page]. Located at <http://labor.idaho.gov/lmi/pubs/idempnews/archived/iepoccurapr6.pdf>. Accessed: January 30, 2009.

- Idaho Conservation Data Center (ICDC). 2009. Appendix F: Species Accounts and Distribution Maps for Idaho Species of Greatest Conservation Need. [Web Page]. Located at <http://fishandgame.idaho.gov/apps/cwcs/index.cfm>. Accessed: February 4, 2009.
- Idaho Cooperative Fish and Wildlife Research Unit (ICFWRU). 1999. Idaho Land Cover. Geospatial Data. [Web Page]. Located at http://www.wildlife.uidaho.edu/data/id_g2veg.zip. Accessed: February 23, 2009.
- Idaho Department of Commerce (IDC). 2006. Soda Springs Community Profile. [Web Page]. Located at <http://commerce.idaho.gov/business/socioeconomic-profiles.aspx>. Accessed: September 3, 2008.
- IDC. 2007. Caribou County Profile. [Web Page]. Located at <http://commerce.idaho.gov/business/socioeconomic-profiles.aspx>. Accessed: September 3, 2008.
- IDC. Date unknown. Summary of Land Ownership. [Web Page]. Located at <http://commerce.idaho.gov/communities/idaho-community-and-county-profiles.aspx>. Accessed: September 3, 2008.
- Idaho Department of Education (IDE). 2008. 2007 – 2008 Educational Directory. [Web Page]. Located at http://www.sde.idaho.gov/site/edu_directory/. Accessed: September 11, 2008.
- Idaho Department of Environmental Quality (IDEQ). 2002a. Final Human Health and Ecological Risk Assessment. Southeast Idaho Phosphate Resource Area Selenium Project.
- IDEQ. 2002b. State of Idaho Air Quality Modeling Guideline. Air Quality Division Stationary Source Program. Revised 12/31/02.
- IDEQ. 2003. Area Wide Risk Management Plan: Remedial Action Goals and Objectives, and Risk-Based Action Levels for Addressing Releases from Historic Phosphate Mining Operations in Southeast Idaho. IDEQ, Soda Springs, Idaho. 42 pages + tables and appendices.
- IDEQ. 2005a. Principles and Policies for the 2002 Integrated (303(d)/305(b)) Report.
- IDEQ. 2005b. *Implementation Guidance for the Idaho Mercury Water Quality Criteria*; April, 2005; Negotiated Rulemaking Committee
- IDEQ. 2005c. 2004 Selenium Area Wide Investigation, Southeast Idaho Phosphate Mining Resource Area, Water Quality Sampling for Metals - Blackfoot River and Tributaries (HUC 17040207) and Selected Bear River Tributaries (HUC 16010201), 18-21 May 2004.
- IDEQ. 2005d. 2005 Selenium Project, Southeast Idaho Phosphate Mining Resource Area, Water Quality Sampling for Metals - Blackfoot River and Tributaries (HUC 17040207) and Selected Bear River Tributaries (HUC 16010201), 9-13 May 2005.

- IDEQ. 2006a. 2006 Selenium Project, Southeast Idaho Phosphate Mining Resource Area, Water Quality Sampling for Metals - Blackfoot River and Tributaries (HUC 17040207), Selected Bear River Tributaries (HUC 16010201), and Selected Salt River Tributaries (HUC 1704105), 8-19 May 2006
- IDEQ. 2006b. Blackfoot River TMDL Implementation Plan. Pocatello Regional Office, Idaho Department of Environmental Quality, Pocatello, ID.
- IDEQ. 2007. Selenium Project, Southeast Idaho Phosphate Mining Resource Area. Water Quality Sampling for Metals -Blackfoot River and Tributaries {HUC 17040207), Selected Bear River Tributaries (HUC 16010201), and Selected Salt River Tributaries (HUC 17040105). Idaho Department of Environmental Quality, Pocatello Regional Office, Pocatello, ID. 24 pages + appendices.
- IDEQ. 2008a. Greenhouse Gas Inventory and Reference Gas Projections 1990-2020. Center for Climate Strategies. Spring 2008.
- IDEQ. 2008b. 2008 Integrated (303[d]/(305[b]) Report.
- IDEQ. 2009a. Idaho Administrative Code, Idaho Administrative Procedures Act, IDAPA 58.01.02 Water Quality and Wastewater Treatment.
- IDEQ. 2009b. Idaho Administrative Code, IDAPA. IDAPA 58.01.11 Ground Water Quality Rule.
- Idaho Department of Fish and Game (IDFG). 1997. Atlas of Idaho's Wildlife. Idaho Department of Fish and Game, Nongame and Endangered Wildlife Program, Boise, Idaho.
- IDFG. 2003. Draft Fish Presence and Potential Presence Data. Unpublished Spatial Data Set. Idaho Fish and Wildlife Information System (IFWIS), Boise, ID.
- IDFG. 2006a. Idaho Bald Eagle Nest Monitoring, 2006 Annual Report. Idaho Department of Fish and Game, Nongame and Endangered Wildlife Program, Boise, Idaho.
- IDFG. 2006b. Scoping Comments for the Proposed Blackfoot Bridge Mine and Reclamation.
- IDFG. 2007. Management Plan for Conservation of Yellowstone Cutthroat Trout in Idaho. Idaho Department of Fish and Game, Boise, Idaho.
- IDFG. 2008. Information Request: Grouse Data. Idaho Department of Fish and Game, Boise, Idaho. Personal communication with R. Cruz, ARCADIS, on December 5, 2008.
- IDFG. 2009a. The Mule Deer Initiative. Mule Deer for the Future. IDFG, Boise, ID. [Web Page]. Located at <http://fishandgame.idaho.gov/cms/hunt/mdi/> Accessed: February 4, 2009.
- IDFG. 2009b. Idaho Conservation Data Center. [Web Page]. Located at <http://fishandgame.idaho.gov/cms/tech/CDC/>. Accessed: February 19, 2009.

- Idaho Department of Health and Welfare, Division of Health, Bureau of Community and Environmental Health (BCEH). 2006. Public Health Assessment: Southeast Idaho Phosphate Mining Resource Area, Bannock, Bear Lake, Bingham, and Caribou Counties, Idaho. U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, Atlanta, GA. 31 pages + appendices.
- Idaho Department of Labor. 2008a. Idaho Census 2000: Current and Historical Population Data. [Web Page]. Located at: <http://www.lmi.idaho.gov/Population/tabid/2021/Default.aspx>. Accessed: September 3, 2008.
- Idaho Department of Labor. 2008b. Caribou County Workforce Trends. [Web Page]. Located at <http://labor.idaho.gov/dnn/Default.aspx?tabid=698>. Accessed: September 3, 2008.
- Idaho Department of Labor. 2008c. Bear Lake County Workforce Trends. [Web Page]. Located at <http://labor.idaho.gov/dnn/Default.aspx?tabid=698>. Accessed: September 3, 2008.
- Idaho Department of Water Resources (IDWR). 2007. Online Database of Water Well Information for Caribou County. [Web Page]. Located at <http://www.idwr.idaho.gov/water/well/search.htm>. Accessed: September 3, 2008.
- Idaho Division of Financial Management (IDFM). 2008. Idaho Economic Forecast. [Web Page]. Located at http://dfm.idaho.gov/Publications/Econ_Publications.html. Accessed: September 9, 2008.
- Idaho Housing and Financing Association (IHFA). 2001. State of Idaho 5-Year Strategic Plan for Housing and Community Development. [Web Page]. Located at http://www.ihfa.org/pdf/2000_Idaho_Strategic_Plan.pdf. Accessed: October 26, 2001.
- Idaho Rural Partnership (IRP). 2006. Profile of Rural Idaho. [Web Page]. Located at http://irp.idaho.gov/Home/Profile_of_Rural_Idaho/. Accessed: February 2009
- IRP. 2007. Soda Springs Community Review, August 21-23, 2007. A report presented to the City of Soda Springs and its citizens by the Idaho Community Review program. [Web Page]. Located at http://irp.idaho.gov/Home/Community_Review/. Accessed: September 9, 2008.
- Idaho State Tax Commission (ISTC). 2008a. 2007 Annual Report: Taxes and Technology. [Web Page]. Located at http://tax.idaho.gov/annual_reports.htm. Accessed: September 3, 2008
- ISTC. 2008b. 2007 Property Appraisal: Net Taxable Values by Major Category. [Web Page]. Located at http://tax.idaho.gov/annual_reports.htm. Accessed: September 3, 2008
- Idaho Transportation Department (ITD). 2008. Annual Average Daily Traffic Counts on Highway Data Quest Traffic Statistics. [Web Page]. Located at <http://www.itd.idaho.gov/highways/>. Accessed: October 14, 2008.
- Inter-Mountain Laboratories, Inc. 2009. Calculation spreadsheets. Correspondence from Will Adler (Inter-Mountain Laboratories, Inc.) to Randy Vranes (P4).

- International Panel on Climate Change (IPCC). 2007. Climate Change 2007. Synthesis Report, 4th Assessment Report. November 2007.
- JBR Environmental Consultants (JBR). 2003. Waters of the U.S./Wetland Delineation, Monsanto Company Blackfoot Bridge Property, Caribou County, Idaho, September 2003, 27 pp. plus figures and appendices.
- JBR. 2006. Addendum: Monsanto Company Blackfoot Bridge Property – Waters of the U.S./Wetland Delineation. Caribou County, Idaho. January 2006. 94 pages.
- Jones, J.R. and N.V. DeByle. 1985. Fire, pages 77-81, In: N.V. DeByle and R.P. Winokur, eds. Aspen: ecology and management in western United States. General Technical Report RM-119, USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO. 283 p.
- Juell, K.E. 2004. A cultural Resources Inventory of the Blackfoot Bridge Phosphate Exploration Project, Caribou County, Idaho. BLM EA No. ID-075-2004-006. Northwest Archaeological Associates, Inc., Seattle, Washington, Project No. NWAA ID03-16. Prepared for JBR Environmental Consultants, Inc., Sandy, Utah.
- Kennedy, C.J., L.E. McDonald, R. Loveridge, and M. M. Strosher. 2000. The effect of bioaccumulated selenium on mortalities and deformities in the eggs, larvae, and fry of a wild population of cutthroat trout (*Oncorhynchus clarki lewisi*). Archives of Environmental Toxicology 39: 46-52.
- Knight, J. 2004. Relationship Between Soil and Plant Selenium with Blood from Steers Grazing at Reclaimed Mine Site. A Thesis, Draft.
- Knudsen, A.C. and M.E. Gunter. 2004. The Effects of Weathering on the Mineralogy of the Phosphoria Formation, Southeast Idaho. pp. 169-187 in Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment, ed. J. R. Hein, Vol. 8 of Handbook of Exploration and Environmental Geochemistry, ed. M. Hall Elsevier B.V., Amsterdam.
- Knudsen, A., M.E. Gunter, J. Herring, and R. Grauch. 2002. Mineralogical Characterization of Weathered and Less Weathered Strata of The Meade Peak Phosphatic Shale Member of The Permian Phosphoria Formation, Measured Sections E and F, Rasmussen Ridge, and Measured Sections G and H, Sage Creek area of the Webster Range, Caribou County, Idaho. USGS Open File Report 02-392.
- Krahn, J. 2007. Vadose zone modeling with VADOSE/W 2007 – an engineering methodology. Second Edition, GEO-SLOPE International Ltd., May.
- Kuck, L. 2003. An Evaluation of the Effects of Selenium on Elk, Mule Deer, and Moose in Southeastern Idaho. Prepared for the Idaho Mining Association Selenium Committee. March 2003. 81 pp.

- Kuck, L., G.L. Hompland, and E. H. Merrill. 1985. Elk calf response to simulated mine disturbance in southeast Idaho. *Journal of Wildlife Management* 48(3): 751-757.
- Landscape Dynamics Lab. 2001. Idaho GAP Predicted Habitat. Spatial Data Sets. Idaho Cooperative Fish and Wildlife Research Unit, Moscow, ID. [Web Page]. Located at <http://insideidaho.org/asp/geodata.asp> Accessed: February 5, 2009.
- Lapp, A. 2007. Blackfoot Bridge Mine. ASI Archaeological and Historical Inventory Record, Idaho Archaeological Survey, Bureau of Land Management, Idaho Falls District, Pocatello Field Office.
- Lapp, A. 2008. Blackfoot Bridge Mine (amended). ASI Archaeological and Historical Inventory Record, Idaho Archaeological Survey, Bureau of Land Management, Idaho Falls District, Pocatello Field Office.
- Lee, W.H. 2000. A History of Phosphate Mining in Southeast Idaho. USGS Open File Report 00-425.
- Lemly, A.D. 1997. A teratogenic deformity index for evaluating impacts of selenium on fish populations. *Ecotoxicology and Environmental Safety* 37: 259–266.
- Lemly, A.D. 1999. Selenium impacts on fish. *Human and Ecological Risk Assessment* 5(6):1139-1151.
- Loope, L.L. and G.E. Gruell. 1973. The ecological role of fire in the Jackson Hole Area, northwestern Wyoming. *Quat. Res.* 3:425-443.
- Lyon, L.J. 1983. Road Density Models Describing Habitat Effectiveness for Elk. *Journal of Forestry*. 81(9):592-595.
- Mabey, D.R. and S.S. Oriol. 1970. Gravity and Magnetic Anomalies in the Soda Springs Region, Southeastern Idaho. United States Geologic Survey Professional Paper 646E., 15 p.
- Mackowiak, C., M. Amacher, J. Hall, and J. Herring. 2004. Uptake of Selenium and other Contaminant Elements into Plants and Implications for Grazing Animals in Southeast Idaho. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 527-558.
- Mackowiak, C.L. and M.C. Amacher. 2003. Plant Uptake of Selenium in Phosphatic Shale Deposits and Mine Waste Rock Dumps. USDA Forest Service Rocky Mountain Research Station, Logan Utah, Western Nutrient Management Conference 2003, Proceedings (Vol. 5), Salt Lake City, Utah.
- Mackowiak, C. L. and M. C. Amacher. 2008. Soil sulfur amendments suppress selenium uptake by alfalfa and western wheatgrass. *Journal of Environmental Quality* 37: 772–779.
- Mansfield, G.R. 1927. Geography, Geology, and Mineral Resources of Part of Southeastern Idaho: U.S. Department of the Interior, Geological Survey, Professional Paper 152.

- Maret, T.R. and D.S. Ott. 2002. Assessment of Fish Assemblages and Minimum Sampling Effort Required to Determine Biotic Integrity of Large Rivers in Southern Idaho, 2002: U.S. Geological Survey Water-Resources Investigations Report 03 –4274, 16 p.
- Masscheleyn, P.H., R.D. Delaune, and W.H. Patrick. 1990. Transformations of Selenium as Affected by Sediment Oxidation-Reduction Potential and pH. *Environmental Science and Technology*, v. 24, p. 91-96.
- Maxim Technologies, Inc. (Maxim). 2000. Overburden Environmental Geochemistry Report for FMC Dry Valley Mine Extension EIS, Caribou County, Idaho. Technical Report prepared for Bureau of Land Management, U.S. Forest Service, and FMC Corporation.
- Maxim. 2002a. North Rasmussen Ridge Mine Expansion Final Environmental Geochemistry Study. Prepared for Agrium Conda Phosphate Operations.
- Maxim. 2002b. Baseline Data Collection Water Resources Investigation Revised August 2002, North Rasmussen Ridge Mine, Caribou County, Idaho. Prepared for Agrium U. S. Inc. August 2002. Helena, Montana.
- Maxim. 2004. Manning and Deer Creek Phosphate Lease Areas (Panels F&G) Smoky Canyon Mine, Caribou County, Idaho. Phase 1 Baseline Technical Report. Prepared for J.R. Simplot Company. Maxim Technologies. 2005. Final Baseline Technical Report on Environmental Geochemistry for Manning and Deer Creek Phosphate Lease Areas (Panels F and G) at Smoky Canyon Mine. Prepared by Maxim Technologies for J.R. Simplot Company, March 2005.
- Maxim. 2006. Agrium Dry Valley Mine Operational Geochemistry Baseline Validation Study. Prepared by Maxim Technologies for Agrium Conda Phosphate Operations.
- Medcraft, J. R. and W. R. Clark. 1986. Big game habitat use and diets on a surface mine in northeastern Wyoming. *Journal of Wildlife Management* 50(1): 135-142.
- Miller, J.C. 1991. *Lithic Resources. Prehistoric Hunters of the High Plains*, Second Edition. Academic Press. Pages 449 to 476.
- Miller, R.F. 2001. Spatial and Temporal Changes of Sage Grouse Habitat in the Sagebrush Biome. Oregon State University Agricultural Experiment Station Technical Bulletin 151.
- Minerals Management Service. 2008. States and Offshore Regions Fiscal Year 2007 (Accounting Year); Idaho Total Reported Royalty Revenues. [Web Page]. Located at <http://www.mrm.mms.gov/MRMWebStats/default.aspx>. Accessed: January 30, 2009.
- Moench, A.F. 1984. Double Porosity Models for a Fissured Groundwater Reservoir with Fracture Skin. *Water Resources Research*, vol. 20, no. 7, pp 831-846.
- Morin, K. and N. Hutt. 1994. Observed Preferential Depletion of Neutralization Potential over Sulfide Minerals in Kinetic Tests: Site Specific Criteria for Safe NP/AP Ratios. In Proceedings of the international Land Reclamation and Mine Drainage Conference, and

- Third International Conference on the Abatement of Acidic Drainage, Pittsburgh, PA, April 24-29, v. 1, p. 148-156.
- Moser, A. 2008. Idaho Department of Fish and Game, Boise, Idaho. Personal communication with R. Cruz, ARCADIS, on December 17, 2008.
- Moulton, C. 2008. Idaho Bald Eagle Nest Monitoring. 2007 Annual Report. Idaho Department of Fish and Game, Nongame and Endangered Wildlife Program, Boise, Idaho.
- Moyle, P.R. and H.Z. Kayser. 2006. Spatial Database of Mining-Related Features in 2001 at Selected Phosphate Mines, Bannock, Bear Lake, Bingham, and Caribou Counties, Idaho. Spatial Data Set. USGS, Spokane, WA. [Web Page]. Located at <http://pubs.usgs.gov/ds/2006/223/> Accessed: January 23, 2009.
- Moyle, P. and P. Piper. 2004. Western Phosphate Field – Depositional and Economic Deposit Models. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 575-598.
- Murchev, B. 2004. Regional Analysis of Spiculite Faunas in the Permian Phosphoria Basin: Implications for Paleoceanography. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 111-135.
- Mutch, R. 1970. Wildland fires and ecosystems a hypothesis. *Ecology* 51: 10461051.
- Nagpal, N.K. and K. Howell. 2001. Water quality guidelines for selenium. Table 5.01: Bioaccumulation and bioconcentration of selenium in freshwater aquatic organisms. Water Protection Branch, Water, Lands and Air Protection, Victoria, British Columbia. [Web Page]. Located at <http://www.env.gov.bc.ca/wat/wq/BCguidelines/selenium/tbl501.html> Accessed: March 31, 2009.
- Narloch, B., T. Nava, and W. Wright. 2002. Selenium Disposition in a Cold Water Ecosystem: Biological Uptake and Trophic Transfer. SETAC 23rd Annual Meeting, Salt Lake City, Utah, November 16-20, 2002.
- National Park Service (NPS). 2009. Class 1 Area Locations. [Web Page]. Located at <http://www.nature.nps.gov/air/maps/classILoc.cfm>. Accessed: April 27, 2009.
- National Oceanic and Atmospheric Administration (NOAA). 1973. NOAA ATLAS 2, Precipitation-Frequency Atlas of the Western United States. U.S. Dept. of Commerce, NOAA, National Weather Service. Washington DC.
- National Research Council (NRC). 1980. Mineral Tolerance of Domestic Animals. National Academy of Sciences, Washington, DC.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virginia. [Web Page]. Located at <http://www.natureserve.org/explorer>. Accessed: March 16, 2009. Newfields. 2006. Digital

- Compilation of Water Quality Monitoring Data for State Land Creek Below Conda Mine. Excel Spreadsheet.
- NewFields. 2008. FINAL Conda/Woodall Mountain Mine RI/FS Work Plan, September 2008. Prepared for J.R. Simplot Company by NewFields.
- NewFields. 2009. Excel Spreadsheet file of Conda water quality data “PrelimConda08GWdata.xls” provided by R.P. Smit on 3/18/09.
- North Dakota (ND) Extension Service. 2004. Soil, Water, and Plant Characteristics Important to Irrigation. [Web Page]. Located at <http://www.ext.nodak.edu/extpubs/ageng/irrigate/eb66w.htm>. Accessed: October 13, 2004.
- Northwest Area Foundation. 2008. Indicators Website. [Web Page]. Located at <http://www.indicators.nwaf.org/>. Accessed: January 30, 2009.
- Oberlindacher, P., D. Hovland, and S. Miller. 1982. Geologic Map of the Aspen Range, Grays Range-Wooley Range, Schmid Ridge, and Webster Range-Dry Ridge Known Phosphate Leasing Areas, Southeastern Idaho.
- O’Kane Consultants (O’Kane). 2009a. P4 – Blackfoot Bridge Mine Proposed Mine Development–Modeling of Soil Cover System Alternatives. Report No. 777/02-01. O’Kane Consultants, Saskatoon, SK, Canada. Prepared for P4 Production, LLC (Revised January 2009).
- O’Kane. 2009b. Predicted Performance of GCLL Cover System for Blackfoot Bridge Mine. O’Kane Consultants, Saskatoon, SK, Canada. Prepared for P4 Production, LLC (March 17, 2009).
- Ohlendorf, H. M. 2003. Ecotoxicology of Selenium. In: Hoffman, D. J., Rattner, B. A., Burton Jr., G. A., and J. Cairns Jr. (eds.) Handbook of Ecotoxicology, Second Edition. Lewis Publishers, Boca Raton, FL. Pages 465-500.
- Oriel S.S. and L.B. Platt. 1980. Geologic Map of the Preston 1°X 2° Quadrangle, Southeastern Idaho and Western Wyoming. United States Geological Survey Miscellaneous Investigations Series. Map I-1127.
- Orris, G.J. and R. L. Grauch. 2002. Rare Earth Element Mines, Deposits, and Occurrences. U.S.G.S. Open-File Report 02-189. Tucson, Arizona.
- P4 Production LLC (P4). 2005. Blackfoot Bridge Mine and Reclamation Plan. Submitted to Bureau of Land Management, Pocatello Field Office, November 15, 2005.
- P4 Production LLC (P4). 2005. Blackfoot Bridge Mine and Reclamation Plan. P4 Production LLC, Soda Springs, ID.
- P4. 2008a. Revised Blackfoot Bridge Mine and Reclamation Plan. P4 Production LLC, Soda Springs, ID. 41 pages + figures and appendices.

- P4. 2008b. Joint Application for Section 404 Permit, Preliminary 404(b)(1) Showing and Conceptual Monitoring Plan. Prepared for P4 by AMEC Geomatrix, Inc., Helena, MT.
- P4. 2009a. Blackfoot Bridge Revised Mine Water Management Plan. Submitted to: Bureau of Land Management Pocatello Field Office. Prepared for P4 by AMEC Geomatrix, Inc., Helena, MT. 31 pages + figures and appendices.
- P4. 2009b. Eagle Management Plan, Blackfoot Bridge Project, Southeastern Idaho. Prepared for P4 by AMEC Geomatrix, Inc., Helena, MT. 16 pages + appendices.
- P4. 2009c. Excel Spreadsheet Containing Waste Rock Volumes for the 2008 Mine Plan. “*Mat_balcorrected.xlsx*” dated 4/22/09.
- P4. 2009d. Personal communication *RE: P4 Emissions from Fuel Combustion and Explosives*. Email to S. Riggs, ARCADIS from Kurowski, Glenn. April 7, 2009.
- Parametrix. 2009. Database of Selenium Concentrations in Fish Tissues from Reference Sites. Parametrix, Bellevue, Washington.
- Patterson, R.T. 2007. Read the Sunspots. Financial Post. June 20, 2007.
- PBS&J. 2008. Montana Wetland Assessment Method. Montana Department of Transportation, Environmental Services, Helena, MT.
- Perkins, R. and A. Foster. 2004. Mineral Affinities and Distribution of Selenium and other Trace Elements in Black Shale and Phosphorite of the Phosphoria Formation. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 251-295.
- Perkins, R. and D. Piper. 2004. The Meade Peak Member of the Phosphoria Formation: Temporal and Spatial Variations in Sediment Geochemistry. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 251-295.
- Petrun, R. 1999. Field Guide to the Southeast Idaho Phosphate District. In *Guidebook to the Geology of Eastern Idaho*, Hughes and Thackray, G., eds. p. 269-279.
- Peters, E.F. and S.C. Bunting. 1994. Fire conditions pre- and post-occurrence of annual grasses on the Snake River Plain. Pages 31-36 In *Proceedings - Ecology, Management, and Restoration of Intermountain Rangelands Symposium*. USDA Forest Service INT-GTR-313, Ogden, Utah.
- Pickering I., G. Brown, and T. Tokunaga. 1995. Quantitative Speciation of Selenium in Soils Using X-Ray Absorption Spectroscopy. *Environmental Science and Technology*, vol 29, No. 9, p. 2456-2459.
- Piper, D.Z. 2001. Marine Chemistry of the Permian Phosphoria Formation and Basin, Southeast Idaho. *Economic Geology*, vol 96, No. 3: p. 599-620.

- Piper, D. and P. Link. 2002. An Upwelling Model for the Phosphoria Sea – a Permian Ocean-Margin Basin in the Northwest United States. *American Association of Petroleum Geology Bulletin*, 86: p 1217-1235.
- Potter, G. 1981. Design Factors for Heap Leaching Operations. *Mining Engineering*, v. 33, pp. 277 – 281.
- Presser, T., Piper, D., Bird, K., Skorupa, J, Hamilton, S., Detwiler, S. and Huebner, M. 2004. The Phosphoria Formation: A Model for Forecasting Global Selenium Sources to the Environment. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 299-319.
- Public Lands Information Center (PLIC). 2008. Dike Lake Campground, Idaho. [Web Page]. Located at <http://www.publiclands.org/explore/site.php?plicstate=ID&id=2589>. Accessed: October 14, 2008.
- Raisbeck, M. F., Smith, M. A., and P. Talcott. 2006. Grazing Reclaimed Minelands in SE Idaho. Report prepared for MWH, Bellevue, Washington.
- Rajan, S. 1979. Adsorption of Selenite, Phosphate, and Sulphate on Hydrous Alumina. *Journal of Soil Science*, No. 30, p. 709-718.
- Ralston, D., A. Mayo, J. Arrigo, J. Baglio, L. Coleman, J. Hubbell, and K. Souder. 1983. Thermal Groundwater Flow Systems in the Thrust Zone in Southeastern Idaho. Idaho Water and Energy Resources Research Institute, University of Idaho, Moscow, 336p.
- Ralston, D., O. Mohammad, M. Robinette, and T. Edwards. 1977. Solutions to Water Resource Problems Associated With Open Pit Mining in the Phosphate Area of Southeastern Idaho. A report prepared for Idaho Bureau of Mines and Geology.
- Ratti, J.T., A.M. Moser, E.O. Garton, and R. Miller. 2006. Selenium Levels in Bird Eggs and Effects on Avian Reproduction. *Journal of Wildlife Management* 70(2): 572-578.
- Ratti, J.T., A. Rocklage, and E.O. Garton. 2002. Analysis of selenium levels in bird eggs and assessment of the effects of selenium on avian reproduction in Southeast Idaho. Final report to Montgomery Watson Harza (Salt Lake City, Utah) and the Idaho Mining Association.
- Rawls, W.J., D.L. Brakensiek, and K.E. Saxton. 1982. Estimation of Soil Water Properties. *Trans. Am. Soc. Agric. Eng.* 25(5):1316-1320
- Reed, J., M. Bedinger, W. Langer, D. Mulvihill. and J. Mason. 1984. Maps Showing Ground-Water Units, and Levels, Springs, and Depth to Water, Basin and Range Province Idaho. United States Geological Survey Water Resources Investigations Report 83-4117-A.
- Rose, A., H. Hawkes, and J. Webb. 1979. *Geochemistry in Mineral Exploration*. Academic Press, Orlando, Florida.
- Rudolph, B., I. Andreller, and K. Kennedy. 2008. Reproductive Success, Early Life Stage Development, and Survival of Westslope Cutthroat Trout (*Oncorhynchus clarki lewisi*)

- Exposed to Elevated Selenium in an Area of Active Coal Mining. Environmental Science Technology.
- Safford, R.K. 2004. Modelling critical winter habitat of four ungulate species in the Robson Valley, British Columbia. *BC Journal of Ecosystems and Management*. 4(2): 1-13.
- Sallabanks, R. 2008. Agenda Item: Pelican Management Plan (Action Item). Idaho Department of Fish and Game.
- Scott, J.M., C.R. Peterson, J.W. Karl, E. Strand, L.K. Svancara, and N.M. Wright. 2002. A Gap Analysis of Idaho: Final Report. Idaho Cooperative Fish and Wildlife Research Unit. Moscow, ID.
- Seed, K., M. Cave, J. Carter, and A. Parker. 2000. Determination of Soil Selenium Speciation Using a New Extraction Methodology and Chemometric Data Analysis. *Journal of Conference Abstracts*, v. 5(2) p. 902-903.
- Sharpley, A.N., T. Daniel, T. Sims, J. Lemunyon, R. Stevens, and R. Parry. 2003. Agricultural Phosphorus and Eutrophication. Second Edition. United States Department of Agriculture, Agricultural Research Service, Washington, D.C. 38 pages.
- Skorupa, J. 1998. Selenium. P.L. Martin and D.E. Larsen, editors. In: Guidelines for Interpretation of the Biological Effects of Selected Constituents in Biota, Water, and Sediment. Information Report No. 3. National Irrigation Water Quality Program. United States Department of the Interior, Bureau of Land Management. Denver, Colorado.
- Smith, J.P. 1914. The Middle Triassic Marine Invertebrate Faunas of North America. USGS Professional Paper 83. 254 pages.
- Southeastern District Health Department. 2009. Solid Waste Disposal. [Web Page]. Located at http://www.sdhdidaho.org/eh/solid_waste_disposal.php. Accessed: May 1, 2009.
- Stephens, G. 2008. Idaho Department of Fish and Game, Boise, Idaho. Personal communication with R. Cruz, ARCADIS, on December 5, 2008.
- Stillings, L. M. and Amacher. 2004. Selenium Attenuation in a Wetland Formed from Mine Drainage in the Phosphoria Formation, Southeast Idaho. In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 467-482.
- Stolz, J.F., P. Basu, and R.S. Oremland. 2002. Microbial transformation of elements: the case of arsenic and selenium. *International Microbiology*, v.5, p. 201-207.
- StreamNet. 2009. StreamNet Fish Data for the Northwest. StreamNet, Portland, Oregon. [Web Page]. Located at http://www.streamnet.org/mapping_apps.html. Accessed: February 5, 2009.

- TetraTech. 2002a. Final 2001 Total Maximum Daily Load Baseline Monitoring Report, Upper Blackfoot, Salt, and Bear River Watersheds, Southeastern Idaho Phosphate Resource Area. Prepared for Idaho Department of Environmental Quality by TetraTech EM Inc.
- TetraTech. 2002b Selenium Project, Southeast Idaho Phosphate Resource Area, Final 2002 Supplement to 2001 Total Maximum Daily Load Baseline Monitoring Report - November 2002. Prepared for Idaho Department of Environmental Quality by TetraTech EM Inc.
- TetraTech. 2002c. Final Area Wide Human Health and Ecological Risk Assessment. Selenium Project, Southeast Idaho Phosphate Mining Resource Area. Tetra Tech EM Inc., Boise, ID. 165 pages + tables, figures, and appendices.
- TetraTech. 2004. Selenium Project, Southeast Idaho Phosphate Resource Area, Final 2003 Supplement to 2001 Total Maximum Daily Load Baseline Monitoring Report - January 2004. Prepared for Idaho Department of Environmental Quality by TetraTech EM Inc.
- TetraTech. 2008. Characterization of Phosphate Mining Overburden. Characterization of Solids and Vapor Composition in Overburden Disposal Facilities with Implications for Weathering and Selenium Release. Prepared for Idaho Phosphate Working Group.
- Thomas, J.W., H. Black Jr., R.J. Sherzinger, and R.J. Pederson. 1979. Deer and Elk. Pp. 104-127 In: Wildlife habitats in managed forests – the Blue Mountains of Oregon and Washington, J.W. Thomas, Ed. United States Department of Agriculture Handbook No. 553.
- Thurrow, R.F., C.E. Corsi, and V.K. Moore. 1988. Status, ecology, and management of Yellowstone cutthroat trout in the Upper Snake River Drainage, Idaho. American Fisheries Society Symposium 4: 25-36.
- TRC Mariah Associates, Inc. (TRC). 1999. Selenium Values in Topsoil in Central Rasmussen, September 29, 1999, prepared for Agrium Conda Phosphate Mines, Caribou County, Idaho.
- USDI Bureau of Land Management (BLM). 1987. Draft Pocatello resource management plan and environmental impact statement, Idaho Falls District. Bannock, Bear Lake, Bingham, Bonneville, Caribou, Frankling, and Power Counties, State of Idaho. Prepared by Department of the Interior, Bureau of Land Management, Idaho Falls, District. (With map).
- BLM. 1996. Acid Rock Drainage Policy for Activities Authorized under CFR 3802/3809. Instruction Memorandum no. 96-79, April 2, 1996.
- BLM. 2003. Final Environmental Impact Statement, North Rasmussen Ridge Mine. BLM Pocatello Field Office, Pocatello, ID.
- BLM. 2004a. Blackfoot Bridge Phosphate Exploration Project – Monsanto Company Monsanto/P4 Production LLC Environmental Assessment BLM# ID-075-2004-06-EA. April 2004.
- BLM. 2004b. Phosphate Exploration Plan for Exploration License Application IDI-34751.

- BLM. 2006a. Draft Pocatello Resource Management Plan and Environmental Impact Statement. [Web Page]. Located at http://www.blm.gov/id/st/en/fo/pocatello/planning/pocatello_resource.html. Accessed: September 3, 2008
- BLM. 2006b. Federal Mineral Leasing (BLM_MAP_SOLID_MINERALS). Spatial Data Set. BLM, Land and Resources Project Office, Denver, CO. [Web Page]. Located at <http://www.geocommunicator.gov/NILS-PARCEL2/map.jsp?MAP=SM> Accessed: January 28, 2009.
- BLM. 2008a. Proposed Fire, Fuels, and Related Vegetation Management Direction - Plan Amendment and Final Environmental Impact Statement. Idaho Falls and Twin Falls Districts Bureau of Land Management Department of Interior. FES-08-05. February 2008.
- BLM. 2008b. 2008 Allotment Permit/Lease Renewal Environmental Assessment. Pocatello Field Office. Environmental Assessment ID-320-2008-EA-136. May 2008. 34 pages.
- BLM. 2008c. Wildfire Perimeters [1937-2007] on or Adjacent to Bureau of Land Management Administered Lands in Idaho. Spatial Data Set. BLM, Boise District Office, Boise, ID. [Web Page]. Located at http://data.insideidaho.org/data/BLM/archive/statewide/wildfire_id_blm.tgz Accessed: January 23, 2009.
- BLM. 2008d. Range Pastures of Idaho. Spatial Data Set. BLM, Idaho State Office, Boise, ID. [Web Page]. Located at http://data.insideidaho.org/data/BLM/archive/statewide/rngPasture_id_blm.tgz Accessed: January 27, 2009.
- BLM. 2008e. Landscape-scale Sage-Grouse Habitat Types of Idaho. Spatial Data Set. Idaho State Office, Boise, ID. [Web Page]. Located at http://data.insideidaho.org/data/BLM/archive/statewide/sagegrousehab_id_blm.tgz Accessed: February 6, 2009.
- BLM. 2009. Upper Snake-Pocatello Integrated Weed Control Program Programmatic Environmental Assessment. BLM, Upper Snake Field Office, Idaho Falls, ID, and Pocatello Field Office, Pocatello, ID. 120 pages.
- BLM and U.S. Forest Service (USFS). 2002. Final Supplemental Environmental Impact Statement, Smoky Canyon Mine, Panels B and C. U.S. BLM, Pocatello Field Office, Pocatello, Idaho. USFS, Caribou National Forest. 442 pages.
- BLM and USFS. 2007. Smoky Canyon Mine, Panels F & G Final Environmental Impact Statement. October, 2007.
- U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, MS. Tech. Rep. Y-87-1. 100 pp. + appendices.

- U.S. Census. 2000a. Census 2000 Summary File 1 (SF 1) 100-Percent Data; American Factfinder. [Web Page]. Located at http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_submenuId=datasets_1&_lang=en. Accessed: September 3, 2008.
- U.S. Census. 2000b. Census 2000 Summary File 3 (SF 3) - Sample Data; American Factfinder. [Web Page]. Located at: http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_submenuId=datasets_1&_lang=en. Accessed: September 3, 2008.
- U.S. Census. 2008a. 2007 Population Estimates; American Factfinder. [Web Page]. Located at http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=PEP&_submenuId=datasets_3&_lang=en. Accessed: September 3, 2008.
- U.S. Census. 2008b. Annual Estimates of Housing Units for Counties: April 1, 2000 to July 1, 2007. [Web Page]. Located at <http://www.census.gov/popest/housing/HU-EST2007-4.html>. Accessed: September 9, 2008.
- United States Congress. 1868. Articles of a Treaty with the Shoshoni (Eastern Band) and Bannock Indians, made the third Day of July, 1868, at Fort Bridger, Utah Territory (Fort Bridger Treaty of 1868). United States Statutes at large, 40th Congress, 1867-1869, Volume 15 pp. 673-678.
- U.S. Department of Agriculture (USDA). 1993a. Soil survey manual. US Department of Agriculture Natural Resource Conservation Service, Washington, DC. USDA Handbook no. 18, issued October 1993. [Web Page]. Located at <http://soils.usda.gov/technical/manual/> (updated 2003) Accessed: September 9, 2008.
- USDA. 1993b. National Soil Survey Handbook, title 430-VI. Soil Conservation Service. Washington D.C., U.S. Government Printing Office, November. 836 pages.
- USDA. 2006. Selenium-Accumulating Plants. [Web Page]. Located at <http://www.ars.usda.gov/Services/docs.htm?docid=9979> Accessed: April 24, 2009.
- USDA. 2008. *Artemisia tridentata* subsp. *wyomingensis*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. [Web Page]. Located at <http://www.fs.fed.us/database/feis/> Accessed: February 18, 2009.
- USDA. 2009. Upper Blackfoot Watershed Analysis. Caribou – Targhee National Forest. March 2009
- United States Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Office of Noise Abatement Control. April 1974.
- EPA. 1978. Protective Noise Levels. Condensed Version of EPA Levels Document. EPA-560/9-79-100, Arlington, VA, 1974.

- EPA. 1981. Noise Effects Handbook, A Desk Reference to Health and Welfare Effects of Noise, Office of the Scientific Assistant Office of Noise Abatement and Control, July 1981.
- EPA. 1992. Batch-Type Procedures for Estimating Soil Adsorption of Chemicals, Technical Resource Document, Office of Solid Waste and Emergency Response, EPA/530/SW-87/006-F, April 1992.
- EPA. 1994. U.S. EPA Method 1312; U.S. Environmental Protection Agency, 1986; 1994 update.
- EPA. 1995. AP 42, Volume I, fifth edition. [Web Page]. Located at <http://www.epa.gov/ttnchie1/ap42/>. Accessed: January.
- EPA. 2001. Geosynthetic Clay Liners Used in Municipal Solid Waste Landfills. EPA-530-F-97-002. U.S. Environmental Protection Agency, Washington, D. C.
- EPA. 2004. Draft Aquatic Life Criteria for Selenium. U.S. Environmental Protection Agency. Office of Water. Office of Science and Technology. Washington, D.C.
- EPA. 2008. “Climate Change—Science—State of Knowledge”. [Web Page]. Located at <http://www.epa.gov/climatechange/science/stateofknowledge.html>. Accessed: March 27, 2009.
- U.S. Department of Energy – Energy Information Administration (EIA). 2008. Emissions of greenhouse gases in the US 2007-Carbon Dioxide Emissions, Report # DOE/EIA-0573(2007). December 3, 2008.
- U.S. Fish and Wildlife Service (USFWS). 2006a. P4 Production, LLC Blackfoot Bridge Phosphate Exploration Project Biological Assessment Addendum – Concurrence. Supervisor, Eastern Idaho Field Office, Fish and Wildlife Service, Chubbuck, Idaho.
- USFWS. 2006b. Scoping Comments - Bonneville Power Administrations Proposed Caribou 138/115-kilovolt Substation and Caribou-Lower Valley 115-kilovolt Transmission Line. Supervisor, Eastern Idaho Field Office, Fish and Wildlife Service, Chubbuck, Idaho.
- USFWS. 2007. National Bald Eagle Management Guidelines. USFWS, Washington, D.C. 23 pages.
- USFWS. 2009. National Wetlands Inventory website. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D. C. [Web Page]. Located at <http://www.fws.gov/wetlands/> Accessed: January 23, 2009.
- United States Forest Service (USFS). 2003a. Final environmental impact statement – Caribou Revised Forest Plan. US Department of Agriculture, Forest Service, Caribou-Targhee National Forest, Idaho Falls, Idaho.
- USFS. 2003b. Caribou-Targhee National Forest, Idaho; Aspen Range Timber Sale/Vegetation Treatment. Notice of Intent to Prepare and Environmental Impact Statement. 68 Fed. Reg. 25319 (May 12, 2003).

- USFS. 2009. Schedule of Proposed Action (SOPA), 1/01/2009 to 03/31/2009. Caribou-Targhee National Forest, Idaho Falls, Idaho.
- U.S. Geological Survey (USGS). 1985. Idaho Roads Digital Line Graph (DLG) Data. Spatial Data Set. USGS, Reston, VA. [Web Page]. Located at <http://www.idwr.idaho.gov/gisdata/new%20data%20download/transportation.htm>. Accessed: January 23, 2009.
- USGS. 2001. Digital Database of Mining-Related Features at Selected Historic and Active Phosphate Mines, Bannock, Bear Lake, Bingham, and Caribou Counties, Idaho. J. Douglas Causey and Phillip R. Moyle. U.S.G.S. Open-File Report 01-142. [Web Page]. Located at <http://geopubs.wr.usgs.gov/open-file/of01-142/>. Accessed: October 16, 2008.
- USGS. 2002. Mineral Commodity Summaries 2002.
- USGS. 2007a. 2007 Minerals Yearbook: Phosphate Rock. Advanced Release. [Web Page]. Located at http://minerals.er.usgs.gov/minerals/pubs/commodity/phosphate_rock/myb1-2007-phosp.pdf. Accessed: 2007.
- USGS. 2007b. National Land Cover Database Zone 18 Land Cover Layer. Spatial Data Set. USGS, Sioux Falls, SD. [Web Page]. Located at <http://www.mrlc.gov/>. Accessed: January 23, 2009.
- USGS. 2008. Monitoring Data for USGS Gaging Station 13063000 on Blackfoot River above Reservoir near Henry, ID. [Web Page]. Located at: <http://waterdata.usgs.gov/nwis>. Accessed: April 4, 2008.
- USGS. 2009. Phosphate Rock: from U.S. Geological Survey, Mineral Commodity Summaries, January 2009. [Web Page]. Located at http://minerals.usgs.gov/minerals/pubs/commodity/phosphate_rock/mcs-2009-phosp.pdf. Accessed: February 16, 2009.
- USGS, BLM, and USFS. 1976. Final Environmental Impact Statement. Development of Phosphate Resources in Southeastern Idaho. USGS, Reston, Virginia.
- University of Idaho. 2001. Hagerman Fish Culture Experiment Station, Annual Report for 2000-2001. University of Idaho, Moscow, Idaho.
- Verner, J. and A.S. Boss, technical coordinators. 1980. California Wildlife and Their Habitats: Western Sierra Nevada. Pacific Southwest Forest and Range Experiment Station., USDA Forest Service, Berkeley, California. [Web Page]. Located at http://www.fs.fed.us/psw/rsl/projects/wild/verner/psw_37.html. Accessed: March 31, 2009.
- Vice, M. 2007. Bald Eagle Observations at the Blackfoot Bridge Property. Unpublished data.
- Vice, M. 2008. Bald Eagle Observations at the Blackfoot Bridge Property in 2008. Unpublished data. 12 pages.

- Waters, T.F. 1995. *Sediment in Streams. Sources, Biological Effects and Control*. American Fisheries Society, Bethesda, Maryland. 251 pages.
- Weber, F. 2005. Report Describing Selenium Analyses for Surface Water and Biota in Southeastern Idaho. Prepared for Marv Hoyt, Greater Yellowstone Coalition.
- Weber, F. 2006. Report Describing Selenium Analyses for Surface Water in Southeastern Idaho. Prepared for Marv Hoyt, Greater Yellowstone Coalition.
- Whetstone Associates. 2002. Installation of Monitoring Wells GW-11D and GW-16D, Astaris Dry Valley Mine. A report prepared for Astaris, LLC.
- Whetstone Associates. 2003. Water Resources Technical Report for the Proposed North Rasmussen Ridge Mine Expansion. A report dated April 8, 2003, prepared for U.S. Department of Interior Bureau of Land Management, Upper Snake River District, Pocatello Field Office.
- Whetstone Associates. 2005a. Surface Water Baseline Study Plan, Blackfoot Bridge Mine EIS. Prepared for U.S. Department of Interior Bureau of Land Management, Idaho Falls District, Pocatello Field Office.
- Whetstone Associates. 2005b. Installation of Monitoring Well GW-12D, Agrium Dry Valley Mine. A report prepared for Agrium Conda Phosphate Operations.
- Whetstone Associates. 2006. Site Investigation Report: North Pit Aquifer Test, Blackfoot Bridge Mine EIS Project. Prepared for U.S. Department of Interior Bureau of Land Management, Idaho Falls District, Pocatello Field Office.
- Whetstone Associates. 2007. Monitoring Well GW-13D Installation Report, Agrium Dry Valley Mine. A report prepared for Agrium Conda Phosphate Operations.
- Whetstone Associates. 2008. Installation of Monitoring Well GW-14D, Agrium Dry Valley Mine. A report prepared for Agrium Conda Phosphate Operations.
- Whetstone Associates. 2009a. Water Resources Baseline Characterization Report, Blackfoot Bridge Mine EIS. Prepared for U.S. Department of Interior Bureau of Land Management, Idaho Falls District, Pocatello Field Office.
- Whetstone Associates. 2009b. Baseline Geochemical Characterization Study, Blackfoot Bridge Mine EIS. Prepared for U.S. Department of Interior Bureau of Land Management, Idaho Falls District, Pocatello Field Office.
- Whetstone Associates. 2009c. Source Term Development Report to Support Numerical Modeling of Groundwater Flow and Solute Transport for the Proposed Blackfoot Bridge Mine. Prepared for U.S. Department of Interior Bureau of Land Management, Idaho Falls District, Pocatello Field Office.

- Whisenant, S.G. 1990. Changing fire frequencies on Idaho's Snake River Plains: ecological and management implications. Pages 4-10 in E.D. McArthur, E.M. Romney, S.D. Smith, and P.T. Tueller, Compilers. Proceedings: Symposium on Cheatgrass Invasion, Shrub Die-Off, and Other Aspects of Shrub Biology and Management, Las Vegas, NV, April 5-7, 1989. U.S. Forest Service, Intermountain Research Station, GTR INT-276, Ogden, UT
- Winter, G. 1980. Groundwater Flow Systems in the Phosphate Sequence, Caribou County, Idaho. University of Idaho, M.S. thesis.
- Witte, S.T. and L.A. Will. 1993. Investigation of selenium sources associated with chronic selenosis in horses of western Iowa. *Journal of Veterinary Diagnostic Investigation* 5: 128-131.
- Wright, W., A. Dukelow, and B. Narloch. 2002. Elk Tissue Quality within the Southeast Idaho Phosphate Resource Area. SETAC 23rd Annual Meeting, Salt Lake City, Utah, November 16-20, 2002.
- Wyoming Department of Employment. 2009. Local Area Unemployment Statistics; Annual Average Civilian Labor Force Estimates for the State of Wyoming and its 23 counties. [Web Page]. Located at <http://doe.state.wy.us/lmi/LAUS/TOC.HTM>. Accessed: February 2, 2009.
- Zachara, J., C. Cowan, and C. Resch. 1993. Metal Cation/Anion Adsorption on Calcium Carbonate: Implications to Metal Ion Concentrations in Groundwater. In: *Metals in Groundwater*, Allen, H, Perdue, E., and Brown, D., editors, 1993, Lewis Publishers.
- Zielinski, R.A., J.R. Budahn, R.I. Grauch, J.B. Paces, and K.R. Simmons. 2004. Weathering of the Meade Peak Phosphatic Shale Member, Phosphoria Formation: Observations based on Uranium and its Decay Products In *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment*, Hein, James R., ed. p. 227-246.
- Zouhar, K. 2003. *Bromus tectorum*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). [Web Page]. Located at <http://www.fs.fed.us/database/feis/> Accessed: January 28, 2009.

7.2 ACRONYMS AND ABBREVIATIONS

ABA	Acid-Base Accounting	CMC	Criteria Maximum Concentration
ACEC	Area of Critical Environmental Concern	CO	Carbon Monoxide
AF	Acre Feet	COPC	Constituent of Potential Concern
AGP	Acid Generating Potential	CP1	Central Pond 1
AIRFA	American Indian Religious Freedom Act	CP2	Central Pond 2
amsl	Above Mean Sea Level	CTNF	Caribou-Targhee National Forest
ANP	Acid Neutralizing Potential	dB	Decibels
ANR	Agriculture Natural Resource	dBA	A-weighted Decibels
AOC	Administrative Order on Consent	°C	Degrees Celsius
ARD	Acid Rock Drainage	°F	Degrees Fahrenheit
ATV	All-terrain Vehicle	DEIS	Draft Environmental Impact Statement
AUM	Animal Unit Month	EA	Environmental Assessment
AWHC	Available Water Holding Capacity	EC	Electrical Conductivity
bcy	Bank Cubic Yard	EE/CA	Engineering Evaluation/Cost Analysis
BET	Brunauer, Emmett, and Teller Method	E.O.	Executive Order
BLM	Bureau of Land Management	EIS	Environmental Impact Statement
BMP	Best Management Practices	EOP	East Overburden Pile
btoc	Below the Top of the Well Casing	EP1	East Pond 1
CaCO ₃	Calcium Carbonate	EP2	East Pond 2
CCC	Criteria Continuous Concentration	EP3	East Pond 3
CEA	Cumulative Effects Area	EP4	East Pond 4
CEC	Cation Exchange Capacity	EPA	Environmental Protection Agency
CEQ	Council of Environmental Quality	ESA	Endangered Species Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	ET	Evapotranspiration
CFA	Carbonate Fluorapatite	FCR	Fire-cracked Rock
CFR	Code of Federal Regulations	ft	Feet
cfs	Cubic Feet Per Second	FONSI	Finding of No Significant Impact
		FY	Fiscal Year

GCL	Geosynthetic Clay Liner	mg/kg	Milligrams Per Kilogram
GCLL	Laminated Geosynthetic Clay Liner	mi	Miles
GHG	Greenhouse Gas	ml	Milliliters
gpm	Gallons Per Minute	mlcy	Million Loose Cubic Yards
G _s	Specific Gravity	mm	Millimeters
HCO ₃ /l	Bicarbonate per Liter	MOU	Memorandum of Understanding
HDPE	High-density Polyethylene	MRC	Moisture Retention Curve
HUC	Hydrologic Unit Code	MSGP	Multi-sector General Permit
Hz	Hertz	MSHA	Mine Safety and Health Act
IDAPA	Idaho Administrative Procedures Act	MW	Monitoring Well
IDC	Idaho Department of Commerce	NAAQS	National Ambient Air Quality Standards
IDEQ	Idaho Department of Environmental Quality	NPDES	National Pollution Discharge Elimination System
IDFG	Idaho Department of Fish and Game	NEPA	National Environmental Policy Act
IDL	Idaho Department of Lands	NFS	National Forest System
IDWR	Idaho Department of Water Resources	NHPA	National Historic Preservation Act
IMA	Idaho Mining Association	NOA	Notice of Availability
in/yr	inches per year	NOI	Notice of Intent
ITD	Idaho Transportation Department	NO _x	Nitrogen Oxide
km	kilometer	NRCS	Natural Resources Conservation Service
KOP	Key Observation Point	NRHP	National Register of Historic Places
KPLA	Known Phosphate Lease Area	NTU	Nephelometric Turbidity Unit
k _{sat}	Saturated Hydraulic Conductivity	NWI	National Wetland Inventory
kV	Kilovolt	NWOP	Northwest Overburden Pile
L _{eq}	Equivalent Continuous Noise Level	NWP1	Northwest Pond 1
L _{dn}	Day-night Average Sound	NWP2	Northwest Pond 2
μg/g	Micrograms Per Gram	NWP3	Northwest Pond 3
μm	Micrometers	NWP4	Northwest Pond 4
MBTA	Migratory Bird Treaty Act	NWS	National Weather Service
MDT	Montana Department of Transportation	OHV	Off-Highway Vehicle
mg/l	Milligrams Per Liter		

P4	P4 Production, LLC	SPLP	Synthetic Precipitation Leaching Procedure
pH (s.u.)	pH Standard Units	SRMA	Special Recreation Management Area
PM ₁₀	Particulate Matter Less Than 10 Micrometers in Diameter	SWPPP	Storm Water Pollution Prevention Plan
PM _{2.5}	Particulate Matter Less Than 2.5 Micrometers in Diameter	TCP	Traditional Cultural Properties
PPGM	Primary Plant Growth Medium	TDS	Total Dissolved Solids
ppm	Parts Per Million	TMDL	Total Maximum Daily Loads
PSD	Prevention of Significant Deterioration	USACE	United States Army Corps of Engineers
RCRA	Resource Conservation and Recovery Act	U.S.C.	United States Code
RI/FS	Remedial Investigation/Feasibility Study	USD	United States Dollar
RMP	Resource Management Plan	USDOT	United States Department of Transportation
ROD	Record of Decision	USFS	United States Forest Service
ROM	Run of Mine	USFWS	United States Fish and Wildlife Service
SAR	Sodium Absorption Ratio	USGS	United States Geological Survey
SARA	Superfund Amendments and Reauthorization Act	VOC	Volatile Organic Compound
Se	Selenium	VQO	Visual Quality Objective
SeAWAC	Selenium Area-wide Advisory Committee	VRM	Visual Resource Management
SEH	Soil Erosion Hazard	WEG	Wind Erodibility Group
SNOTEL	Snow Telemetry	WER	Water Effect Ratio
SHPO	State Historic Preservation Office	WMP1	Water Management Pond 1
SPCC	Spill Prevention Control and Countermeasures	WMP2	Water Management Pond 2
		yd	Yards

7.3 GLOSSARY

Acre-feet - The volume of liquid or solid required to cover 1 acre to a depth of 1 foot, or 43,560 cubic feet; measure for volumes of water, reservoir rock, etc.

Allotment - A unit of land suitable and available for livestock grazing that is managed as one grazing unit.

Alluvial - Pertaining to material or processes associated with transportation or deposition of soil and rock by flowing water (e.g., streams and rivers).

Alluvium - Unconsolidated or poorly consolidated gravel, sands, and clays, deposited by streams and rivers on riverbeds, floodplains, and alluvial fans.

Ambient - The environment as it exists at the point of measurement and against which changes or impacts are measured.

Animal Unit Months (AUMs) - The amount of forage consumed by a 1,000-pound cow and calf (less than 6 months of age) over a 1-month period (approximately 800 pounds of forage).

Anticline - A fold in rock, where the interior of the fold is composed of rocks that are older than the rocks on the exterior of the fold.

Aquatic Resources - Biological resources (plants, animals, and other life forms) present in or dependent on streams, lakes, and other surface water.

Aquifer - A body of rock that is sufficiently permeable to conduct groundwater and to yield economically significant quantities of water to wells and springs.

Aspect - The direction toward which a slope faces with respect to the compass or the sun.

Attenuation - The process of becoming thinner, or diminished, in dimension, concentration, or density.

Background - The viewing area of a distance zone that lies beyond the foreground-middleground. Usually from a minimum of 3 to 5 miles to a maximum of about 15 miles from a travel route, use area, or other observer position. Atmospheric conditions in some areas may limit the maximum to about 8 miles or increase it beyond 15 miles.

Baseflow - Groundwater discharge to streams and rivers.

Baseline Study - A study conducted to gather data prior to mining for the purpose of outlining conditions existing on an undisturbed site. Impacts are evaluated against the baseline data, and reclamation success is measured against baseline data.

Best Management Practices (BMPs) - Innovative, dynamic, and improved environmental protection practices applied to industry to help ensure that development is conducted in an environmentally responsible manner.

Bioaccumulation - A process by which chemicals are taken up by organisms from water or sediment directly or through consumption of food containing the chemicals.

Biodiversity - The diversity of species, ecosystems, and natural processes in an area.

Biological Assessment - Information prepared by or under the direction of the federal agency concerning listed species that may be present in the action area and the evaluation of potential effects of the action on such species and habitats. The purpose of the biological assessment is to evaluate the potential effects of the action on listed or proposed species or designated or proposed critical habitat, and determine whether any such species and habitats are likely to be adversely affected by the action. Biological assessments are conducted for major federal construction projects requiring an EIS.

Characteristic Landscape - The established landscape within an area being viewed. The term does not necessarily mean a naturalistic character, but may refer to features of the cultural landscape, such as a farming community, an urban landscape, or other landscape that has an identifiable character.

Chert - A hard, dense, microcrystalline sedimentary rock, consisting chiefly of interlocking crystals of quartz less than about 30 micrometers in diameter; it may contain amorphous silica (opal). It may be white or variously colored. Chert occurs primarily as nodular or concretionary segregations, or nodules in limestone or dolomite, and less commonly as layered deposits or bedded chert.

Code of Federal Regulations (CFR) - The compilation of federal regulations adopted by federal agencies through a rule-making process.

Colluvium - General term applied to loose and incoherent deposits, usually at the foot of a slope of cliff and brought there chiefly by gravity; such as talus and cliff debris.

Column Test - A leaching laboratory test where water or other leaching solution is percolated through a vertical column of earth material, and the resulting leachate is collected and analyzed for dissolved parameters.

Community Types (vegetation) - A group of plants living in a specific region under relatively similar conditions.

Contrast - The effect of a striking difference in the form, line, color, or texture of the landscape features within the area being viewed.

Critical (Crucial) Habitat - Habitat that is present in minimum amounts and is a determining factor for population maintenance and growth.

Cultural Resources - The archaeological and historical remains of human occupation or use. Includes any manufactured objects, such as tools or buildings. May also include objects, sites, or geological/geographical locations significant to Native Americans.

Cumulative Effects -As defined by 40 CFR 1508.7, cumulative effects are the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

dBA - The sound pressure levels in decibels measured with a frequency weighing network corresponding to the A-scale on a standard sound level meter. The A-scale tends to suppress lower frequencies (e.g., below 1,000 Hz).

Decibel (dB) - A unit used in expressing ratios of electric or acoustic power. The relative loudness of sound.

Direct Effects - As defined by 40 CFR 1508.9, these are effects caused by the action and which occur at the same time and place as the action. Synonymous with direct impacts.

Discharge - The volume of water flowing past a point per unit time, commonly expressed as cubic feet per second (cfs), gallons per minute (gpm), or million gallons per day (mgd).

Disturbed Area - Area where natural vegetation and soils have been removed or disrupted.

Drainage - Natural channel through which water flows during some time of the year. Natural and artificial means for effecting discharge of water as by a system of surface and subsurface passages.

Drawdown - The lowering of the water level in a well as a result of withdrawal.

Electrical Conductivity (or Specific Conductance) - The ability of a water or a soil-water paste to transmit electrical current, used to estimate ion concentration.

Endangered Species - Any species in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.

Ephemeral Stream - A stream or portion of a stream that flows briefly in direct response to precipitation in the immediate vicinity, and whose channel is at all times above the water table.

Erosion - The wearing away of soil and rock by weathering, mass wasting, and the action of streams, glaciers, waves, wind, and underground water.

Evapotranspiration - The portion of precipitation returned to the air through evaporation and plant transpiration.

Exploration - The search for economic deposits of minerals, ore, and other materials through practices of geology, geochemistry, geophysics, drilling, and/or mapping.

Fate and Transport - Description of the movement of a contaminant through a groundwater system which may include the effects of dilution, dispersion, attenuation, and various chemical reactions.

Fault - Surface of rock rupture along which there has been differential movement.

Fisheries - Streams and lakes used for fishing.

Floodplain - That portion of a river valley adjacent to the channel which is built of sediments deposited during the present regimen of the stream and is covered with water when the river overflows its banks at flood stages.

Footprint - The actual surface area physically disturbed by mining operations and ancillary facilities.

Forage - Vegetation used for food by wildlife, particularly big game wildlife and domestic livestock.

Forb - Any herbaceous plant other than a grass.

Foreground-Middleground - The area visible from a travel route, use area, or other observer position to a distance of 3 to 5 miles. The outer boundary of this zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape, and vegetation is apparent only in pattern or outline.

Fugitive Dust - Dust particles suspended randomly in the air from road travel, excavation, and rock loading operations.

Game Species - Animals commonly hunted for food or sport.

Geochemistry - The study of the distribution and amounts of the chemical elements in minerals, ores, rocks, soils, water, and the atmosphere, and their circulation in nature, on the basis of the properties of their atoms and ions.

Geotechnical - A branch of engineering concerned with the engineering design aspects of slope stability, settlement, earth pressures, bearing capacity, seepage control, and erosion.

Grade - A slope stated in terms of feet per mile or as feet per foot (percent); the content of precious metals per volume of rock (ounces per ton).

Groundwater - All subsurface water, especially that as distinct from surface water in the zone of saturation.

Groundwater Table - The surface between the zone of saturation and the zone of aeration; that surface of a body of unconfined groundwater at which the pressure is equal to that of the atmosphere.

Habitat - The place or type of site where a plant or animal naturally or normally lives and grows. Includes all biotic, climatic, and soils conditions, or other environmental influences affecting living conditions.

Haul Road - All roads utilized for transport of an extracted mineral, waste, overburden, or other earthen materials.

Heavy Metals - A group of elements that may be acquired by organisms in trace amounts that are toxic in higher concentrations. Includes copper (Cu), lead (Pb), mercury (Hg), molybdenum (Mo), nickel (Ni), cobalt (Co), chromium (Cr), iron (Fe), silver (Ag), etc.

Hydraulic Conductivity (K) - A coefficient of proportionality describing the rate at which water can move through a permeable medium.

Hydraulic Gradient - For groundwater, the rate of change of total head per unit of distance of flow at a given point and in a given direction.

Hydrograph - A graph that shows some property of groundwater or surface water as a function of time.

Hydrology - A science that deals with the properties, distribution, and circulation of surface and subsurface water.

Hydrophytic Vegetation - Plants that grow in and are adapted to an aquatic or very wet environment.

Hydrostratigraphic Unit - A formation, part of a formation, or group of formations in which there are similar hydrologic characteristics allowing for grouping into aquifers or confining layers.

Impoundment - The accumulation of any form of water in a reservoir or other storage area, generally resulting from a man-made embankment.

Indirect Effects - As defined by 40 CFR 1508.8, these are reasonably foreseeable effects that are caused by the action but occur later in time or are removed in distance from the action. Synonymous with indirect impacts.

Infiltration - The movement of water or some other liquid into the soil or rock through pores or other openings.

Infrastructure - The basic framework or underlying foundation of a community including road networks, electric and gas distribution, water and sanitation services, and facilities.

Intermittent Stream - 1) A stream that flows only at certain times of the year, as when it receives water from springs or from a surface source and 2) a stream that does not flow continuously, as when water losses from evaporation or seepage exceed the available stream flow.

Irretrievable - Applies to the loss of production, harvest, or use of natural resources. For example, some or all of the timber production from an area is lost irretrievably while an area is

serving as a winter sports site. The production lost is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume timber production.

Irreversible - Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans such as soil productivity and aspen regeneration. Irreversible also includes loss of future options.

Jurisdictional Wetland - A wetland area identified and delineated by specific technical criteria, field indicators, and other information for purposes of public agency jurisdiction. The public agencies which administer jurisdictional wetlands are the US Army Corps of Engineers, US Environmental Protection Agency, US Fish and Wildlife Service, and USDA-Soil Conservation Service.

K-Soil Erosion Factor - A ranking of susceptibility of soils to erosion by water. Factors below 0.25 = low susceptibility, 0.25 to 0.4 = moderately susceptible, and 0.4 and above = highly susceptible.

Key Observation Point (KOP) - An observer position on a travel route used to determine visible area.

Land Use - Land uses determined for a given area that establish the types of activities allowed (e.g., mining, agriculture, timber production, residences, industry) and the size of buildings and structures permitted.

Landform - Any physical, recognizable form or feature of the Earth's surface, having a characteristic shape and produced by natural causes. Includes major features such as plains, plateaus, and mountains and minor features, such as hills, valleys, slopes, canyons, arroyos, and alluvial fans.

Landscape Character - The arrangement of a particular landscape as formed by the variety and intensity of the landscape features as defined by the four basic elements (form, line, color, and texture). These factors give the area a distinctive quality that distinguishes it from its immediate surroundings.

Lifts - Waste rock dumps constructed in a series of layers.

Limestone - A sedimentary rock consisting chiefly of the mineral calcite (calcium carbonate, CaCO₃), with or without magnesium carbonate. Common impurities include chert and clay. It is the consolidated equivalent of limy mud, calcareous sand, and/or shell fragments.

Lithology - The description of rocks in terms of the physical character of a rock, mineral composition, grain size, color, and other physical characteristics.

Long-Term Effects - Long-term effects are effects that would remain following completion of the project. As an example, the loss of vegetation from the development of an open pit would be a long-term effect if the pit were not reclaimed and vegetation not re-established at the end of the project.

Mesic - Moist habitats associated with springs, seeps, and riparian areas.

Mitigate, Mitigation - To cause to become less severe or harmful to reduce impacts. Actions to avoid, minimize, rectify, reduce or eliminate, and compensate for impacts to environmental resources.

Modification - A visual quality objective in which human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

Monitor - To systematically and repeatedly watch, observe, or measure environmental conditions in order to track changes.

National Environmental Policy Act of 1969 (NEPA) - The national charter for protection of the environment. NEPA establishes policy, sets goals, and provides means for carrying out the policy. Regulations at 40 CFR 1500-1508 implement the act.

National Register of Historic Places (NRHP) - A list, maintained by the National Park Service, of areas which have been designated as being of historical significance.

Native Species - Plants that originated in the area in which they are found, i.e., they naturally occur in that area.

Noxious Weed - An alien, introduced or exotic species that is adventive, aggressive, or overly competitive with more desirable species.

Nutrients - Essential chemicals needed by plants or animals for growth and health. If other physical and chemical conditions are optimal, excessive amounts of nutrients can lead to degradation of water quality by promoting excessive growth, accumulation, and subsequent decay of plants, especially algae. Some nutrients can be toxic to animals in high concentrations.

One-hundred year, twenty four-hour storm event (100-year, 24-hour) - The maximum precipitation predicted to occur within any 24-hour period over 100 years.

Ore - A deposit of rock from which a valuable mineral or minerals can be economically extracted.

Overburden - Material (sub-economic, non-ore) which overlies a deposit of valuable material.

Pit Backfill - Placing waste rock in a mined-out pit.

Partial Retention - A visual quality objective in man's activities may be evident, but must remain subordinate to the characteristic landscape.

Perched Water - Unconfined groundwater separated from the underlying main body of groundwater by unsaturated sediments or rock.

Perennial Stream - A stream or reach of a stream that flows throughout the year.

Permeable - The property or capacity of a porous rock, sediment, or soil to transmit a liquid.

pH - The negative \log_{10} of the hydrogen ion activity in solution; a measure of acidity or basicity of a solution. pH 1 is highly acidic, and pH 14 is strongly basic.

PM_{2.5} - Particulate matter less than 2.5 microns in aerodynamic diameter.

PM₁₀ - Particulate matter less than 10 microns in aerodynamic diameter.

Peak Flow - The greatest flow attained during melting of winter snowpack or during a large precipitation event.

Productivity - In reference to vegetation, productivity is the measure of live and dead accumulated plant materials.

Project Alternatives - Alternatives to the proposed project developed through the NEPA process.

Protohistoric - Time period when native culture is in contact with outside culture before written record.

Public Scoping - See Scoping.

Raptor - A bird of prey (e.g., eagles, hawks, falcons, and owls).

Recontouring - Restoration of the natural topographic contours by reclamation measures, particularly in reference to roads.

Record of Decision (ROD) - A decision document for an EIS or Supplemental EIS that publicly and officially discloses the responsible official's decision regarding the actions proposed in the EIS and their implementation.

Reserves - Identified resources of mineral-bearing rock from which the mineral can be extracted profitably with existing technology and under present economic conditions.

Resources (geologic) - Reserves plus all other mineral deposits that may eventually become available, either known deposits that are not presently recoverable or unknown deposits, that may be inferred to exist but have not yet been discovered.

Riparian - Situated on or pertaining to the bank of a river, stream, or other body of water. Riparian is normally used to refer to plants of all types that grow along streams, rivers, or at spring and seep sites.

Runoff - That part of precipitation that appears in surface streams; Precipitation that is not retained on the site where it falls and is not absorbed by the soil.

Run-of-Mine Overburden - Sub-economic rock mined from the ore body which is placed in surface dumps or as pit backfill.

Run-on - That part of precipitation that runs onto the site from adjacent areas.

Scoping - Procedures by which agencies determine the extent of analysis necessary for a proposed action, (i.e., the range of actions, alternatives, and impacts to be addressed; identification of significant issues related to a proposed action; and the depth of environmental analysis, data, and task assignments needed). (40 CFR 1501.7)

Sediment Load - The amount of sediment (sand, silt, and fine particles) carried by a stream or river.

Sediment - Material suspended in or settling to the bottom of a liquid. Sediment input comes from natural sources such as soil erosion, rock weathering, agricultural practices, or construction activities.

Seismicity - The likelihood of an area being subject to earthquakes; the phenomenon of earth movements.

Shale - A fine-grained sedimentary rock formed by the compaction of clay, silt, or mud. It has a finely laminated structure which gives it a natural plain along which the rock splits, especially on weathered surfaces. It may be red, brown, black, or gray.

Short-Term Effects - Short-term effects are defined as those effects that would not last longer than the life of the project. As an example, the loss of vegetation from the construction of a haul road would be a short-term effect because the road would be reclaimed and vegetation re-established following completion of the project.

Significant - As used in NEPA, determination of significance requires consideration of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole, and the affected region, interests, and locality. Intensity refers to the severity of impacts (40 CFR 1508.27).

Soil - Loose, unconsolidated surface material including the A and E horizon (topsoil) and B horizon (subsoil).

Specific Yield - See Storativity.

Storage Coefficient (S) - Volume of water that an aquifer absorbs or releases from storage per unit surface area of aquifer per unit decline in the component of hydraulic head normal to the surface; S is dimensionless.

Storativity - The volume of water an aquifer releases from, or takes into storage per unit surface area of the aquifer per unit change in head. In an unconfirmed aquifer, the storativity is equivalent to the specific yield.

Swell - The increase in volume exhibited by certain soils and rocks on absorption of water; an enlarged place in an orebody; a general, imprecise term for dome or arch.

Syncline - A folded rock sequence where the interior of the fold is younger than the rock on the exterior.

Synthetic Precipitation Leachability Procedure (SPLP) Test - A laboratory testing procedure established by the U.S. Environmental Protection Agency where a prescribed amount of solid material is mixed for a set time with a prescribed amount of acidified water. The leachate is then separated from the solid and analyzed for parameters of interest.

Threatened Species - Any species of plant or animal which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Tipple Facility - Area where ore is loaded onto haul trucks for transport to the processing plant.

Total Dissolved Solids (TDS) - Total amount of dissolved material, organic or inorganic, contained in a sample of water.

Transmissivity (T) - The rate at which water will flow through a vertical strip of aquifer of one unit width and extending through the full saturated thickness under a hydraulic gradient of 1.0.

Visual Quality Objective (VQO) - A desired level of excellence based on physical and sociological characteristics of an area. Refers to degree of acceptable alteration of the characteristic landscape.

Visual Resource - The composite of basic terrain, geologic features, water features, vegetation patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for viewers.

Waters of the United States - A jurisdictional term from Section 404 of the Clean Water Act referring to waterbodies, such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce.

Watershed - The geographic region from which water drains into a particular stream, river, or body of water. A watershed includes hills, lowlands, and the body of water into which the land drains. Watershed boundaries are defined by the ridges or divides separating watersheds.

Wetland Functions - Dynamic biological, chemical, and physical processes that characterize wetland ecosystems.

Wetlands - Areas inundated by surface or groundwater with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Wilderness - Land designated by the U.S. Congress as a component of the National Wilderness Preservation System.

7.4 INDEX

A

Acid Rock Drainage, 7-20, 7-27, 3-21

Air Quality, 7-7, 7-28, 1-10, 1-15, 2-44, 3-39, 6-7
 air quality, 1-10, 1-14, 2-69, 3-1, 3-39, 3-40, 4-8, 4-9, 4-10, 4-12, 4-13, 5-9, 5-10, 5-11

Alternative, 2-1, 2-51, 2-53, 2-54, 2-55, 2-57, 2-59, 2-68, 2-69, 2-71, 2-74, 2-76, 2-77, 3-1, 4-1, 4-5, 4-6, 4-7, 4-12, 4-13, 4-59, 4-66, 4-67, 4-68, 4-69, 4-70, 4-72, 4-74, 4-75, 4-76, 4-78, 4-80, 4-83, 4-84, 4-93, 4-94, 4-96, 4-105, 4-106, 4-110, 4-111, 4-114, 4-115, 4-119, 4-120, 4-123, 4-125, 4-127, 4-131, 4-132, 4-135, 4-136, 4-137

alternative, 1-2, 1-7, 1-12, 1-13, 1-17, 2-1, 2-46, 2-51, 2-53, 2-54, 2-59, 2-60, 2-61, 2-62, 2-64, 2-65, 2-66, 2-67, 2-68, 3-94, 3-97, 3-163, 4-1, 4-59, 4-68, 4-69, 4-87, 4-99, 4-123, 4-125, 4-127, 4-131, 4-132, 4-135, 4-136, 4-137, 5-44

alternatives, 7-39, 1-2, 1-7, 1-14, 2-1, 2-49, 2-51, 2-53, 2-59, 2-62, 2-65, 2-66, 2-68, 3-1, 3-161, 3-174, 4-1, 4-5, 4-6, 4-7, 4-11, 4-12, 4-13, 4-14, 4-33, 4-83, 4-94, 4-95, 4-96, 4-111, 4-119, 4-120, 4-123, 4-124, 4-125, 4-132, 4-134, 4-135, 4-137, 5-1, 5-9, 5-13, 5-25, 5-26, 5-30, 5-31, 5-32, 5-33, 5-37, 5-41, 5-42, 5-44, 5-48, 5-49, 5-50, 5-55, 5-57, 5-58, 5-63

Alternatives, 7-15, 7-38, 1-17, 2-1, 2-51, 2-59, 2-67, 2-68, 2-76, 4-1, 4-5, 4-7, 4-12, 4-13, 4-22, 4-77, 4-84, 4-96, 4-106, 4-107, 4-111, 4-115, 4-119, 4-120, 4-123, 4-124, 4-125, 4-127, 4-131, 4-132, 4-135, 4-136, 5-9, 5-21, 5-25, 5-31, 5-41, 5-44, 5-48, 5-55

Amphibians, 3-136, 4-105, 5-39
 amphibian, 3-137, 3-138, 4-105
 Amphibian, 7-7, 3-138
 amphibians, 2-51, 2-75, 3-137, 3-138, 4-98, 4-105, 5-34, 5-39, 5-40, 5-41, 5-48

Aquatic, 7-5, 7-6, 7-22, 7-31, 2-45, 2-46, 2-75, 3-19, 3-57, 3-68, 3-69, 3-131, 3-138, 4-96, 5-39, 5-42, 6-6
 aquatic, 7-6, 7-14, 7-35, 7-41, 2-29, 2-51, 2-59, 2-75, 2-76, 3-17, 3-19, 3-20, 3-27, 3-28, 3-45, 3-50, 3-57, 3-58, 3-65, 3-66, 3-67, 3-69, 3-70, 3-71, 3-72, 3-75, 3-126, 3-138, 3-139, 3-140, 3-141, 3-142, 3-143, 4-14, 4-45, 4-49, 4-54, 4-67, 4-74, 4-105, 4-108, 4-109, 4-110, 4-111, 4-114, 4-115, 5-19, 5-37, 5-38, 5-39, 5-41, 5-42, 5-43, 5-44, 5-47, 5-48, 5-49

Aspen, 7-10, 7-15, 7-23, 2-23, 2-24, 2-74, 3-1, 3-2, 3-11, 3-12, 3-13, 3-34, 3-37, 3-46, 3-49, 3-58, 3-65, 3-66, 3-75, 3-76, 3-77, 3-95, 3-96, 3-97, 3-103, 3-118, 3-120, 3-121, 3-124, 3-126, 3-140, 3-145, 3-149, 3-151, 3-159, 3-160, 4-4, 4-24, 4-33, 4-35, 4-84, 4-92, 4-99, 5-16
 aspen, 7-36, 1-16, 2-24, 2-72, 3-101, 3-115, 3-119, 3-120, 3-121, 3-126, 3-127, 3-128, 3-133, 3-135, 3-137, 3-145, 3-146, 3-147, 3-149, 3-161, 4-87, 4-99, 4-101, 4-104, 4-106, 4-112, 4-113, 4-115, 5-11, 5-16, 5-29, 5-45, 5-46, 5-48

B

Bald Eagle, 7-9, 7-14, 7-23, 7-24, 1-8, 2-44, 2-45, 3-133, 3-145, 4-101, 4-102, 4-107, 4-112, 5-38, 5-45
 bald eagle, 1-16, 2-44, 2-66, 2-75, 3-128, 3-133, 3-136, 3-145, 4-96, 4-100, 4-101, 4-102, 4-107, 4-112, 4-115, 5-38, 5-45
 bald eagles, 2-44, 2-66, 2-75, 3-128, 3-133, 4-101, 4-102, 4-107, 4-115, 5-38
 Bald Eagles, 4-101, 5-38

Bats, 3-127, 4-100, 5-37
 bat, 3-127, 4-100
 Bat, 3-145

Big Game, 3-126, 3-129, 4-99, 5-37
 big game, 7-34, 2-74, 3-127, 3-160, 4-98, 4-99, 5-37, 5-40, 5-41, 5-51, 5-52, 5-56, 6-2

Birds, 3-128, 3-134, 4-103, 4-104, 5-38, 5-39
 birds, 1-7, 1-8, 2-36, 2-51, 2-75, 3-20, 3-128, 3-134, 3-136, 4-97, 4-98, 4-103, 4-104, 4-105, 4-117, 5-34, 5-38, 5-39

BLM, 7-1, 7-10, 7-20, 7-21, 7-24, 7-27, 1-1, 1-2, 1-7, 1-8, 1-13, 1-14, 2-1, 2-2, 2-3, 2-39, 2-41, 2-59, 2-60, 2-68, 3-14, 3-18, 3-21, 3-22, 3-34, 3-37, 3-40, 3-49, 3-78, 3-126, 3-127, 3-128, 3-133, 3-134, 3-136, 3-137, 3-139, 3-141, 3-144, 3-145, 3-147, 3-148, 3-149, 3-152, 3-159, 3-160, 3-161, 3-162, 3-165, 3-166, 4-6, 4-7, 4-11, 4-12, 4-86, 4-87, 4-92, 4-95, 4-97, 4-98, 4-101, 4-109, 4-112, 4-114, 4-115, 4-116, 4-121, 4-122, 4-123, 4-126, 4-127, 4-129, 4-134, 5-5, 5-6, 5-7, 5-9, 5-10, 5-15, 5-20, 5-26, 5-27, 5-28, 5-29, 5-30, 5-31, 5-33, 5-34, 5-39, 5-40, 5-43, 5-44, 5-45, 5-46, 5-47, 5-48, 5-49, 5-50, 5-57, 5-58, 6-1, 6-2, 6-3, 6-4, 6-5, 6-10
 Bureau of Land Management, 7-1, 7-11, 7-13, 7-15, 7-16, 7-18, 7-20, 7-25, 7-27, 7-1

Boreal Owl, 3-146

C

Cadmium, 3-15, 3-20, 3-22, 3-25, 3-27, 3-28, 3-29, 3-67, 3-68, 3-69, 3-70, 3-72, 3-95, 4-31, 4-32, 4-45, 4-49, 4-66, 4-67, 4-74, 4-75
 cadmium, 3-15, 3-16, 3-18, 3-19, 3-22, 3-27, 3-28, 3-29, 3-32, 3-33, 3-34, 3-69, 3-70, 3-71, 3-98, 4-15, 4-16, 4-30, 4-58, 4-109, 5-19

Canada Lynx, 7-1

Caribou County, 7-2, 7-7, 7-9, 7-10, 7-11, 7-13, 7-20, 7-25, 1-1, 1-12, 2-44, 2-79, 3-40, 3-97, 3-143, 3-144, 3-148, 3-159, 3-162, 3-165, 3-167, 3-168, 3-169, 3-170, 3-171, 3-172, 3-173, 3-174, 3-175, 4-122, 4-123, 4-128, 4-129, 4-130, 4-131, 4-132, 4-134, 5-9, 5-20, 5-24, 5-57, 5-59, 5-63, 5-65, 6-1

Conifer, 2-74, 3-120, 3-126, 4-92

conifer, 3-102, 3-126, 3-128, 3-145, 3-146, 3-149, 3-161, 4-112, 4-113, 5-11, 5-16, 5-29, 5-45
 COPC, 7-27, 2-51, 2-60, 2-71, 2-76, 4-30, 4-32, 4-44, 4-45, 4-46, 4-49, 4-50, 4-52, 4-58, 4-66, 4-69, 4-74, 5-15, 5-16, 5-43
 COPCs, 2-51, 2-59, 2-60, 2-61, 2-64, 2-67, 2-69, 2-71, 2-75, 2-77, 3-17, 3-18, 3-21, 3-29, 3-33, 3-34, 3-69, 3-70, 3-71, 3-72, 4-14, 4-16, 4-17, 4-18, 4-20, 4-21, 4-30, 4-37, 4-38, 4-44, 4-45, 4-48, 4-49, 4-54, 4-58, 4-66, 4-67, 4-68, 4-74, 4-75, 4-76, 4-77, 4-89, 4-105, 4-108, 4-110, 4-114, 5-2, 5-15, 5-16, 5-20, 5-21, 5-22, 5-25

D

Deer, 7-9, 7-13, 7-19, 3-141, 3-142, 4-100
 deer, 1-16, 3-127, 3-160, 4-96, 4-97, 4-99, 4-100, 4-106, 5-37
 Dinwoody Formation, 2-64, 3-12, 3-34, 3-37, 3-77, 3-89, 3-96, 4-2, 4-6, 4-7, 4-17, 4-24, 4-37, 4-44, 4-45, 4-58, 4-77, 4-89, 5-20

E

Eagle, 7-16, 1-8, 2-44, 2-66, 2-75, 3-128, 3-133, 4-101, 4-103, 4-107, 5-41, 5-48
 eagle, 2-41, 2-44, 2-45, 2-66, 3-128, 3-133, 3-134, 3-135, 3-164, 4-100, 4-101, 4-102, 4-107, 5-38
 eagles, 7-38, 1-8, 2-44, 2-75, 3-128, 3-133, 4-101, 4-102, 4-107, 5-38, 5-41, 5-48
 Eagles, 3-134
 Education, 7-7, 6-5, 6-6, 6-7, 6-8
 education, 3-173
 Elk, 7-11, 7-12, 7-19, 7-26, 3-160
 elk, 7-2, 1-16, 3-19, 3-127, 4-96, 4-98, 4-99, 4-100, 5-37, 5-41
 Employment, 7-2, 7-26, 3-169, 3-170, 3-171, 4-129
 employment, 2-78, 3-167, 3-168, 3-169, 3-170, 3-172, 4-128, 4-129, 4-130, 4-131, 4-135, 5-60, 5-63
 Environmental Justice, 1-15, 2-79, 3-174, 4-134, 6-7
 environmental justice, 2-79, 4-135, 4-136, 5-63
 Erosion, 7-29, 7-33, 7-36, 3-103, 4-9
 erosion, 7-34, 7-36, 7-39, 1-15, 2-4, 2-7, 2-34, 2-39, 2-40, 2-41, 2-43, 2-46, 2-53, 2-71, 3-1, 3-103, 3-114, 4-7, 4-8, 4-12, 4-34, 4-35, 4-38, 4-44, 4-45, 4-48, 4-82, 4-83, 4-85, 4-97, 4-108, 4-111, 4-124, 5-15, 5-16, 5-23, 5-24, 5-25, 5-43

F

Finance, 3-174
 finance, 3-174
 Fisheries, 7-19, 7-24, 7-34, 1-16, 2-75, 6-6, 6-7
 fisheries, 2-59, 3-167, 4-108, 4-109, 4-110, 4-111, 4-126, 5-42, 5-44, 6-1
 Flammulated Owl, 3-145, 4-112, 5-45

G

Game Birds, 3-133, 4-104, 5-39
 game bird, 3-160, 4-98, 4-104, 5-39, 5-51
 Game Bird, 3-133, 4-104, 5-39
 game birds, 3-160, 4-98, 4-104, 5-39, 5-51
 Geology, 7-1, 7-3, 7-12, 7-16, 7-17, 1-15, 2-69, 3-63, 6-6, 6-7, 6-8
 geology, 7-34, 2-31, 3-1, 3-2, 3-21, 3-75, 3-97, 3-148, 5-1
 Grazing, 7-11, 7-12, 7-17, 3-129, 3-159, 4-120, 4-122, 5-10, 5-27, 5-43, 5-46, 5-52, 5-55, 5-56, 6-7
 grazing, 7-4, 7-31, 1-14, 1-16, 1-17, 2-39, 2-45, 2-46, 2-78, 3-18, 3-45, 3-125, 3-140, 3-142, 3-150, 3-159, 3-161, 4-98, 4-120, 4-121, 4-122, 4-123, 5-1, 5-10, 5-15, 5-20, 5-22, 5-23, 5-24, 5-26, 5-27, 5-28, 5-29, 5-30, 5-32, 5-33, 5-34, 5-37, 5-38, 5-39, 5-40, 5-42, 5-43, 5-45, 5-46, 5-47, 5-51, 5-52, 5-55, 5-56, 5-59, 5-60
 Groundwater, 7-1, 7-2, 7-4, 7-13, 7-17, 7-25, 7-26, 7-31, 7-35, 1-11, 2-51, 3-75, 3-76, 3-77, 3-78, 3-79, 3-83, 3-89, 3-90, 3-94, 3-95, 3-96, 4-18, 4-19, 4-20, 4-24, 4-30, 4-37, 4-40, 4-45, 4-49, 4-50, 4-52, 4-54, 4-55, 4-58, 4-66, 4-68, 4-74, 4-75, 4-76, 4-77, 5-22
 groundwater, 7-2, 7-31, 7-34, 7-35, 7-38, 7-41, 1-1, 1-11, 1-15, 2-17, 2-18, 2-29, 2-30, 2-31, 2-32, 2-46, 2-49, 2-51, 2-59, 2-60, 2-61, 2-62, 2-64, 2-67, 2-70, 2-71, 2-73, 3-13, 3-14, 3-16, 3-21, 3-32, 3-34, 3-58, 3-66, 3-75, 3-76, 3-77, 3-78, 3-79, 3-87, 3-89, 3-90, 3-94, 3-95, 3-96, 3-97, 3-125, 4-12, 4-14, 4-15, 4-16, 4-17, 4-18, 4-19, 4-20, 4-21, 4-24, 4-29, 4-30, 4-32, 4-35, 4-36, 4-37, 4-38, 4-44, 4-45, 4-48, 4-54, 4-55, 4-58, 4-59, 4-66, 4-68, 4-69, 4-74, 4-75, 4-76, 4-77, 4-86, 4-88, 4-89, 4-105, 4-108, 4-110, 4-114, 5-15, 5-16, 5-19, 5-20, 5-21, 5-22, 5-23, 5-26, 5-31, 5-37, 5-43, 5-47, 5-56

H

Hazardous Materials, 1-16, 2-47, 2-79, 4-136
 hazardous material, 1-16, 2-47, 2-48, 2-79, 4-135, 4-136, 4-137
 Hazardous Material, 1-16, 2-47, 2-79, 4-136
 hazardous materials, 1-16, 2-47, 2-48, 2-79, 4-135, 4-136, 4-137
 Hazardous Waste, 1-10
 hazardous waste, 1-10, 2-47, 2-48, 4-136, 5-64, 5-65
 hazardous wastes, 1-10, 2-47, 2-48, 5-64, 5-65
 Health, 7-7, 7-9, 7-18, 7-19, 7-22, 7-28, 1-9, 1-10, 1-17, 2-47, 2-49, 3-18, 3-19, 3-44, 3-68, 3-159, 3-171, 5-37, 5-65
 health, 7-37, 1-17, 2-47, 3-16, 3-19, 3-44, 3-68, 3-94, 3-161, 3-173, 3-174, 4-98, 4-108, 4-134, 4-135, 4-136, 4-137
 Housing, 7-10, 7-21, 3-172, 3-173, 4-130, 5-40, 5-47
 housing, 7-21, 2-79, 3-44, 3-167, 3-172, 3-173, 4-128, 4-130, 4-131, 4-134, 5-63

I

Income, 3-174, 4-134

income, 1-15, 3-172, 3-174, 3-175, 4-128, 4-129, 4-133, 4-134, 4-135, 4-136, 5-63, 5-64

M

Macroinvertebrates

macroinvertebrate, 3-140

Macroinvertebrate, 3-140

macroinvertebrates, 3-139, 3-141

Manganese, 7-1, 3-25, 3-70, 3-72, 3-95, 4-15, 4-16, 4-31, 4-32, 4-45, 4-49, 4-64, 4-66, 4-67, 4-68, 4-72, 4-74, 4-75, 4-80

manganese, 2-71, 3-16, 3-18, 3-22, 3-29, 3-32, 3-33, 3-34, 3-96, 3-97, 3-98, 4-15, 4-16, 4-30, 4-58, 4-68, 4-76, 4-77, 4-109

Map, 7-1, 7-15, 3-3, 3-81, 3-85, 3-101, 3-102, 3-107, 3-108, 3-111, 3-115, 3-123, 3-124

map, 7-20, 2-2, 3-1, 3-45, 3-97, 3-98, 3-103, 3-114, 3-118, 3-123, 3-124, 3-162

Minerals, 7-3, 7-13, 7-24, 2-60, 2-69, 3-174, 6-5

mineral, 7-35, 7-37, 7-38, 7-39, 1-1, 1-7, 1-8, 2-1, 2-60, 3-2, 3-14, 3-15, 3-16, 3-20, 3-34, 3-80, 3-90, 3-150, 3-152, 3-162, 3-174, 4-2, 4-3, 4-6, 4-7, 4-15, 4-107, 4-111, 4-122, 4-123, 4-130, 5-2, 5-6, 5-7, 5-8, 5-57, 5-58, 5-60, 5-63, 5-64

Mineral, 7-12, 7-14, 7-16, 7-18, 7-20, 7-23, 7-24, 1-2, 1-5, 1-9, 2-1, 2-60, 3-2, 3-162, 4-2, 4-122

minerals, 7-24, 7-34, 7-36, 7-38, 1-13, 2-60, 3-2, 3-14, 3-15, 3-16, 3-20, 3-21, 3-152, 4-3, 4-16, 4-123, 4-130, 5-1, 5-52, 5-57

Mining, 7-2, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9, 7-11, 7-12, 7-14, 7-16, 7-17, 7-18, 7-19, 7-23, 7-26, 7-28, 1-1, 1-12, 2-4, 2-8, 2-29, 2-36, 2-39, 2-60, 2-66, 2-78, 3-17, 3-93, 3-167, 3-169, 3-171, 4-3, 4-10, 4-11, 4-12, 4-21, 4-34, 4-35, 4-37, 4-55, 4-89, 4-99, 4-117, 4-121, 4-122, 4-127, 5-2, 5-3, 5-7, 5-10, 5-15, 5-19, 5-20, 5-22, 5-24, 5-27, 5-28, 5-32, 5-34, 5-50, 5-51, 5-55, 5-59, 6-5

mining, 7-3, 7-4, 7-6, 7-31, 7-34, 7-36, 1-1, 1-2, 1-7, 1-9, 1-12, 1-13, 1-16, 1-17, 2-2, 2-3, 2-4, 2-7, 2-8, 2-18, 2-27, 2-29, 2-30, 2-31, 2-32, 2-34, 2-35, 2-36, 2-37, 2-39, 2-41, 2-42, 2-44, 2-45, 2-47, 2-49, 2-51, 2-54, 2-60, 2-61, 2-62, 2-66, 2-68, 2-69, 2-70, 2-73, 2-78, 2-79, 3-17, 3-18, 3-19, 3-20, 3-22, 3-39, 3-45, 3-93, 3-94, 3-119, 3-150, 3-159, 3-161, 3-165, 3-167, 3-169, 3-170, 3-172, 3-174, 4-1, 4-2, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 4-17, 4-18, 4-19, 4-20, 4-21, 4-24, 4-29, 4-32, 4-33, 4-34, 4-35, 4-36, 4-37, 4-38, 4-44, 4-45, 4-48, 4-54, 4-55, 4-58, 4-77, 4-82, 4-88, 4-89, 4-92, 4-95, 4-96, 4-99, 4-100, 4-104, 4-106, 4-108, 4-109, 4-111, 4-115, 4-116, 4-117, 4-119, 4-120, 4-121, 4-122, 4-126, 4-127, 4-128, 4-130, 4-131, 4-132, 4-135, 4-136, 4-137, 5-1, 5-2, 5-5, 5-6, 5-7, 5-8, 5-9, 5-10, 5-11, 5-13, 5-14, 5-15, 5-16, 5-19, 5-20, 5-21, 5-22, 5-23, 5-25, 5-26, 5-27, 5-28, 5-29, 5-30, 5-31, 5-32, 5-33, 5-34, 5-37, 5-

38, 5-39, 5-40, 5-41, 5-42, 5-44, 5-45, 5-46, 5-47, 5-48, 5-49, 5-50, 5-51, 5-52, 5-55, 5-56, 5-57, 5-58, 5-59, 5-60, 5-63, 5-64, 5-65, 6-1, 6-2

Monitoring, 7-9, 7-14, 7-15, 7-16, 7-19, 7-24, 7-25, 7-28, 2-30, 2-32, 2-41, 2-45, 2-46, 2-50, 2-51, 3-41, 3-49, 3-53, 3-68, 3-70, 3-71, 3-72, 3-73, 3-79, 3-83, 3-89, 3-94, 3-95, 3-139, 5-38

monitoring, 2-2, 2-35, 2-41, 2-45, 2-46, 2-49, 2-50, 2-64, 3-17, 3-19, 3-38, 3-39, 3-40, 3-49, 3-58, 3-65, 3-66, 3-67, 3-69, 3-71, 3-72, 3-75, 3-78, 3-79, 3-80, 3-89, 3-90, 3-93, 3-94, 3-95, 3-96, 3-97, 3-141, 3-142, 4-29, 4-36, 4-54, 4-92, 4-96, 4-104, 5-12, 5-19

Mule Deer, 7-9, 7-11, 4-99

mule deer, 7-2, 3-127, 4-98, 4-99, 4-100

N

National Environmental Policy Act

NEPA, 7-28, 7-37, 7-38, 7-40, 1-2, 1-8, 3-163, 5-7

Native American, 7-33, 1-2, 1-14, 3-163, 5-63

Native Americans, 7-33

NEPA, 7-28, 7-37, 7-38, 7-40, 1-2, 1-8, 3-163, 5-7

Nickel, 3-15, 3-25, 3-68, 3-69, 3-70, 3-72, 4-31, 4-32, 4-45, 4-49, 4-66, 4-67, 4-74, 4-75

nickel, 7-35, 3-2, 3-15, 3-16, 3-18, 3-19, 3-20, 3-22, 3-29, 3-33, 3-34, 3-67, 3-98, 4-30, 4-109, 5-19

Noise, 7-1, 7-6, 7-22, 7-28, 2-44, 2-69, 3-43, 3-44, 4-8, 4-11, 4-12, 4-13, 5-13, 5-14, 5-38, 6-7

noise, 2-44, 2-45, 2-66, 2-67, 2-69, 2-70, 2-74, 2-75, 3-43, 3-44, 4-8, 4-11, 4-12, 4-13, 4-14, 4-100, 4-101, 4-103, 4-107, 5-14, 5-34, 5-37, 5-38, 5-39, 5-41, 5-45, 5-48

Noxious Weed, 7-37, 3-125, 4-92, 4-96, 5-28, 5-30, 5-31, 5-32

noxious weed, 1-16, 2-73, 3-125, 4-84, 4-92, 4-94, 4-96, 5-13, 5-28, 5-30, 5-31, 5-32, 5-40, 5-47, 5-55, 5-56

noxious weeds, 1-16, 2-73, 4-84, 4-92, 4-94, 4-96, 5-13, 5-28, 5-31, 5-55, 5-56

Noxious Weeds, 3-125, 4-92, 4-96, 5-28, 5-30, 5-31, 5-32

O

Off-Highway Vehicle, 7-29

off-highway vehicle, 3-160

Ore, 7-38, 2-3, 2-4, 2-37, 2-38, 2-54, 3-21, 3-22, 3-30, 4-2, 4-14, 4-15, 4-24, 4-31, 4-87

ore, 7-34, 7-38, 7-39, 7-40, 1-2, 1-13, 2-1, 2-2, 2-3, 2-4, 2-7, 2-18, 2-23, 2-28, 2-29, 2-31, 2-36, 2-37, 2-38, 2-39, 2-44, 2-49, 2-54, 2-60, 2-61, 2-66, 2-67, 2-68, 2-69, 3-2, 3-11, 3-13, 3-14, 3-20, 3-22, 3-25, 3-27, 3-28, 3-29, 3-30, 3-31, 3-37, 3-39, 3-49, 3-150, 3-159, 3-161, 3-170, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-14, 4-15, 4-23, 4-30, 4-35, 4-48, 4-85, 4-87, 4-89, 4-116, 4-117, 4-118, 4-119, 4-129, 4-131, 4-132, 4-137, 5-1, 5-2, 5-7, 5-10, 5-22, 5-52, 5-59, 6-1

Overburden, 7-13, 7-19, 7-27, 7-29, 7-38, 7-39, 2-4, 2-7, 2-39, 2-42, 2-47, 2-49, 2-51, 2-53, 2-54, 2-60, 2-62, 2-65,

2-67, 3-21, 3-22, 3-30, 3-79, 3-89, 4-2, 4-3, 4-4, 4-6, 4-12, 4-15, 4-16, 4-17, 4-23, 4-31, 4-58, 4-59, 4-68, 4-83, 4-93, 4-105, 4-106, 4-110, 4-114, 4-115, 4-117, 4-119, 4-123, 4-125, 4-127, 4-131, 4-135, 4-136
 overburden, 7-35, 1-1, 1-15, 2-4, 2-7, 2-8, 2-17, 2-18, 2-27, 2-30, 2-31, 2-33, 2-35, 2-36, 2-37, 2-38, 2-39, 2-41, 2-43, 2-47, 2-49, 2-51, 2-52, 2-53, 2-54, 2-59, 2-60, 2-61, 2-62, 2-63, 2-65, 2-66, 2-67, 2-68, 2-69, 2-71, 3-1, 3-14, 3-17, 3-18, 3-19, 3-20, 3-22, 3-27, 3-28, 3-29, 3-30, 3-31, 3-32, 3-33, 3-34, 3-69, 3-97, 3-98, 3-119, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-15, 4-16, 4-17, 4-21, 4-22, 4-23, 4-30, 4-32, 4-33, 4-35, 4-38, 4-45, 4-48, 4-55, 4-58, 4-59, 4-66, 4-68, 4-77, 4-82, 4-83, 4-85, 4-86, 4-87, 4-89, 4-92, 4-93, 4-95, 4-98, 4-105, 4-106, 4-107, 4-108, 4-110, 4-111, 4-114, 4-115, 4-117, 4-118, 4-119, 4-121, 4-124, 4-125, 4-127, 5-2, 5-6, 5-8, 5-15, 5-16, 5-19, 5-20, 5-21, 5-22, 5-31, 5-37, 5-48, 5-51, 5-52, 5-56, 5-65

P

Paleontologic Resources

paleontologic resource, 1-15, 2-69, 4-1, 4-2, 4-5, 4-6, 4-7, 5-2, 5-6, 5-8, 5-9

paleontologic resources, 1-15, 2-69, 4-1, 4-2, 4-5, 4-6, 4-7, 5-2, 5-6, 5-8, 5-9

Permit, 7-16, 7-20, 7-28, 1-7, 1-8, 1-9, 1-10, 1-11, 1-12, 2-62, 2-65, 4-88, 4-96, 6-2, 6-3

permit, 1-2, 1-7, 1-9, 1-11, 1-12, 2-27, 2-29, 2-30, 2-31, 2-32, 2-43, 2-45, 2-59, 2-62, 2-65, 3-39, 3-114, 3-123, 3-165, 4-8, 4-92, 4-96, 5-11, 5-44, 5-57, 6-3

permits, 1-7, 1-10, 1-11, 1-12, 2-1, 2-44, 3-39, 3-162, 3-174, 4-92, 4-129, 5-11

Permits, 1-7, 1-8, 2-29

Phosphoria Formation, 7-4, 7-5, 7-6, 7-7, 7-11, 7-12, 7-14, 7-16, 7-17, 7-19, 7-26, 2-2, 2-41, 3-1, 3-2, 3-11, 3-14, 3-17, 3-20, 3-34, 3-37, 3-75, 3-76, 3-77, 3-89, 3-101, 3-102, 3-124, 3-141, 3-143, 3-165, 4-2, 4-5, 4-24, 4-95

Population, 7-9, 7-21, 3-167, 3-168, 3-169, 4-97, 4-128

population, 7-11, 7-32, 2-79, 3-19, 3-128, 3-139, 3-140, 3-141, 3-148, 3-167, 3-168, 3-169, 3-172, 3-173, 3-175, 4-97, 4-99, 4-103, 4-104, 4-109, 4-114, 4-128, 4-129, 4-130, 4-131, 4-132, 4-134, 4-135, 5-15, 5-38, 5-40, 5-42, 5-47, 5-50, 5-51, 5-60, 5-63, 5-64

populations, 7-12, 1-16, 2-45, 3-31, 3-45, 3-125, 3-128, 3-137, 3-138, 3-139, 3-140, 3-143, 3-160, 3-165, 3-168, 3-169, 3-174, 3-175, 4-96, 4-99, 4-100, 4-105, 4-106, 4-107, 4-108, 4-109, 4-111, 4-115, 4-129, 4-134, 4-135, 5-13, 5-33, 5-37, 5-38, 5-41, 5-42, 5-43, 5-44, 5-47, 5-48, 5-52, 5-63, 5-64

Populations, 3-174, 4-134

Predator

predator, 3-127, 4-103

predators, 3-127, 4-98, 4-99, 4-100, 4-103, 4-106

Predators, 7-3, 3-127

R

Reclamation, 7-3, 7-5, 7-9, 7-13, 7-15, 1-1, 1-8, 1-12, 1-13, 1-14, 1-17, 2-11, 2-39, 2-42, 2-43, 2-54, 4-3, 4-4, 4-6, 4-34, 4-60, 4-77, 4-85, 4-94, 4-95, 4-97, 4-106, 4-107, 4-111, 4-115, 4-117, 4-119, 5-20, 5-52

reclamation, 7-31, 7-38, 1-1, 1-2, 1-9, 1-12, 1-13, 1-14, 1-17, 2-2, 2-4, 2-7, 2-39, 2-41, 2-53, 2-60, 2-68, 2-69, 2-70, 2-71, 2-72, 2-75, 2-74, 2-78, 2-77, 3-14, 3-97, 3-98, 3-114, 3-119, 3-121, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-29, 4-32, 4-33, 4-34, 4-36, 4-37, 4-38, 4-44, 4-45, 4-54, 4-58, 4-68, 4-75, 4-76, 4-82, 4-83, 4-84, 4-87, 4-92, 4-93, 4-94, 4-95, 4-97, 4-103, 4-104, 4-106, 4-110, 4-111, 4-114, 4-115, 4-118, 4-119, 4-120, 4-121, 4-122, 4-124, 4-125, 4-127, 4-130, 4-131, 5-5, 5-23, 5-24, 5-25, 5-30, 5-31, 5-41, 5-51, 5-52, 5-56, 5-57, 5-59

Recreation, 7-29, 3-57, 3-150, 3-153, 3-159, 3-160, 4-122, 5-40, 5-47, 5-52, 5-55, 5-56, 6-5, 6-7

recreation, 1-15, 1-17, 2-39, 3-45, 3-50, 3-57, 3-58, 3-65, 3-66, 3-67, 3-148, 3-150, 3-151, 3-152, 3-159, 3-160, 3-161, 3-170, 4-92, 4-116, 4-122, 4-123, 4-124, 4-127, 4-129, 5-1, 5-20, 5-23, 5-24, 5-26, 5-34, 5-38, 5-39, 5-41, 5-42, 5-46, 5-49, 5-50, 5-51, 5-52, 5-55, 5-56, 5-60

Regulation

regulation, 1-1, 3-44, 5-32

regulations, 7-32, 1-2, 1-7, 1-10, 1-15, 2-35, 2-47, 2-48, 2-54, 2-59, 2-60, 3-44, 3-67, 3-162, 3-163, 3-166, 4-10, 4-101, 4-125, 4-137, 5-32, 5-64, 5-65

Regulations, 7-27, 7-37, 1-2, 3-44

Reptiles, 3-136, 4-105, 5-39

reptile, 3-136

Reptile, 3-137

reptiles, 2-51, 2-75, 3-136, 3-137, 4-98, 4-105, 5-34, 5-39, 5-41, 5-48

Revegetation, 1-16

revegetation, 2-17, 2-39, 2-41, 4-84, 4-95, 4-99, 4-119, 5-21, 5-30

Riparian, 7-39, 1-16, 2-24, 2-45, 2-72, 3-119, 3-120, 3-121, 3-126, 3-145, 3-146, 4-112, 5-33, 5-45

riparian, 7-37, 1-16, 1-17, 2-24, 2-30, 2-45, 2-46, 2-50, 2-73, 3-19, 3-119, 3-120, 3-121, 3-126, 3-127, 3-137, 3-145, 3-146, 3-147, 3-149, 4-84, 4-112, 4-113, 4-120, 5-15, 5-25, 5-26, 5-27, 5-43, 5-45, 5-46

Roads, 7-4, 7-23, 4-2, 4-5, 4-9, 5-27, 5-28, 5-34, 5-43

road, 7-34, 7-36, 7-39, 1-11, 1-17, 2-2, 2-18, 2-28, 2-31, 2-32, 2-34, 2-37, 2-38, 2-39, 2-40, 2-45, 2-48, 2-49, 2-62, 2-63, 2-64, 2-66, 2-67, 2-77, 3-20, 3-34, 3-44, 3-46, 3-57, 3-65, 3-66, 3-121, 3-123, 3-127, 3-128, 3-133, 3-134, 3-135, 3-136, 3-140, 3-142, 3-149, 3-150, 3-151, 3-152, 3-159, 3-161, 3-162, 3-175, 4-2, 4-4, 4-5, 4-10, 4-11, 4-12, 4-14, 4-19, 4-34, 4-38, 4-82, 4-87, 4-95, 4-97, 4-101, 4-102, 4-107, 4-108, 4-113, 4-116, 4-117, 4-118, 4-119, 4-122, 4-136, 5-8, 5-14, 5-15, 5-16, 5-20, 5-22, 5-23, 5-24, 5-26, 5-30, 5-38, 5-39, 5-42, 5-50, 5-52, 5-55, 5-60

- Road, 7-4, 7-12, 7-35, 2-4, 2-42, 2-48, 3-142, 3-150, 3-151, 3-152, 3-159, 3-160, 3-162, 4-10, 4-11, 4-12, 4-116, 4-118, 4-122, 4-136, 5-9, 5-14, 5-16, 5-43, 5-55
- roads, 7-6, 7-35, 7-38, 1-11, 2-2, 2-4, 2-37, 2-38, 2-39, 2-41, 2-43, 2-47, 2-49, 2-66, 2-69, 3-39, 3-133, 3-150, 3-152, 3-159, 3-160, 3-162, 3-167, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-12, 4-13, 4-34, 4-35, 4-96, 4-99, 4-104, 4-111, 4-116, 4-117, 4-122, 4-124, 4-128, 5-1, 5-6, 5-10, 5-11, 5-14, 5-15, 5-16, 5-24, 5-27, 5-28, 5-33, 5-34, 5-37, 5-43, 5-45, 5-46, 5-47, 5-49, 5-50, 5-51, 5-52, 6-2
- ## S
- Safety, 7-12, 7-22, 7-28, 1-9, 1-10, 1-12, 1-17, 2-29, 2-41, 2-47, 2-49, 3-44
- safety, 1-10, 2-41, 2-47, 2-48, 2-49, 2-66, 3-44, 3-94, 4-118, 4-136, 4-137, 5-29, 5-56
- Sagebrush, 7-13, 3-120, 3-137, 3-146, 4-84, 4-94
- sagebrush, 2-24, 2-72, 2-75, 2-77, 3-119, 3-120, 3-121, 3-126, 3-127, 3-133, 3-137, 3-142, 3-146, 3-147, 3-149, 4-93, 4-99, 4-103, 4-104, 4-106, 4-112, 4-113, 5-10, 5-11, 5-28, 5-29, 5-33, 5-34, 5-39, 5-46, 5-46, 5-48
- Scoping, 7-5, 7-9, 7-23, 7-38, 7-39, 1-14, 1-15, 6-1, 6-5
- scoping, 1-7, 1-13, 1-14, 2-51, 2-59, 5-1, 6-1, 6-2
- Sedimentation, 7-4, 5-42
- sedimentation, 1-15, 2-43, 2-47, 2-64, 2-71, 2-75, 3-50, 3-57, 3-140, 4-82, 4-104, 4-108, 4-111, 5-16, 5-24, 5-28, 5-30, 5-38, 5-39, 5-40, 5-42, 5-43, 5-44, 5-49
- Seeps, 3-19
- seep, 7-39, 2-49, 2-50, 3-17, 5-21
- seeps, 7-37, 3-17, 3-65, 3-66, 3-77, 3-78, 3-124, 4-16, 4-17, 4-29, 4-32, 4-36, 4-89, 4-98, 4-105, 5-37, 5-47, 5-51
- Seismicity, 7-39, 3-14
- Selenium, 7-1, 7-4, 7-5, 7-6, 7-7, 7-8, 7-11, 7-12, 7-14, 7-15, 7-16, 7-17, 7-18, 7-19, 7-20, 7-22, 7-24, 7-29, 2-72, 2-76, 3-16, 3-17, 3-18, 3-19, 3-22, 3-25, 3-27, 3-28, 3-29, 3-33, 3-57, 3-68, 3-70, 3-71, 3-72, 3-95, 3-96, 3-125, 3-141, 3-142, 3-143, 4-9, 4-31, 4-32, 4-45, 4-49, 4-54, 4-58, 4-62, 4-66, 4-67, 4-70, 4-74, 4-75, 4-77, 4-78, 4-86, 4-89, 4-98, 4-108, 5-8, 5-16, 5-19, 5-29, 5-38, 5-40, 5-47
- selenium, 7-11, 7-12, 7-14, 7-17, 7-19, 7-26, 1-1, 1-15, 1-17, 2-7, 2-30, 2-35, 2-47, 2-49, 2-50, 2-71, 2-72, 2-74, 2-76, 2-77, 3-15, 3-16, 3-17, 3-18, 3-19, 3-20, 3-22, 3-27, 3-29, 3-32, 3-33, 3-34, 3-57, 3-65, 3-67, 3-69, 3-70, 3-71, 3-96, 3-98, 3-125, 3-140, 3-141, 3-142, 3-143, 3-159, 4-9, 4-12, 4-14, 4-15, 4-16, 4-18, 4-20, 4-21, 4-30, 4-45, 4-48, 4-54, 4-58, 4-66, 4-68, 4-74, 4-76, 4-77, 4-85, 4-86, 4-87, 4-89, 4-92, 4-93, 4-94, 4-96, 4-98, 4-104, 4-105, 4-106, 4-107, 4-108, 4-109, 4-110, 4-111, 4-114, 4-115, 4-120, 4-121, 5-6, 5-8, 5-9, 5-15, 5-16, 5-19, 5-21, 5-22, 5-24, 5-25, 5-27, 5-28, 5-30, 5-31, 5-32, 5-37, 5-38, 5-39, 5-40, 5-41, 5-42, 5-43, 5-44, 5-47, 5-48, 5-49, 5-55, 5-56, 6-2
- Shoshone-Bannock, 1-14, 2-78, 3-18, 6-4
- Social and Economic Conditions, 2-78
- social and economic condition, 3-167, 5-59, 5-60
- Social and Economic Condition, 2-78
- social and economic conditions, 3-167, 5-59, 5-60
- Soil, 7-1, 7-2, 7-4, 7-5, 7-11, 7-12, 7-15, 7-17, 7-18, 7-22, 7-29, 7-36, 7-40, 1-15, 2-7, 2-17, 2-24, 2-71, 3-19, 3-97, 3-98, 3-101, 3-103, 3-105, 3-107, 3-110, 3-114, 3-115, 3-119, 3-147, 4-83, 4-113, 5-23, 5-24, 5-46
- soil, 7-31, 7-33, 7-35, 7-36, 7-38, 7-39, 7-41, 1-15, 2-4, 2-17, 2-24, 2-34, 2-38, 2-39, 2-41, 2-46, 2-47, 2-71, 2-74, 3-12, 3-17, 3-34, 3-39, 3-76, 3-77, 3-97, 3-98, 3-101, 3-105, 3-106, 3-114, 3-115, 3-118, 3-119, 3-120, 3-123, 4-5, 4-9, 4-22, 4-35, 4-82, 4-83, 4-84, 4-86, 4-94, 4-96, 4-98, 5-8, 5-15, 5-16, 5-23, 5-24, 5-25, 5-26, 5-31, 5-41, 5-48, 5-56
- soils, 7-22, 7-33, 7-34, 7-35, 7-36, 7-40, 1-14, 2-18, 2-46, 2-51, 2-71, 3-1, 3-12, 3-37, 3-97, 3-98, 3-101, 3-102, 3-102, 3-103, 3-103, 3-114, 3-115, 3-116, 3-117, 3-118, 3-119, 3-124, 3-147, 3-149, 4-2, 4-5, 4-7, 4-82, 4-83, 4-116, 4-117, 4-118, 4-119, 5-15, 5-16, 5-23, 5-24, 5-25, 5-31, 5-42
- Soils, 7-4, 7-16, 1-15, 2-39, 2-41, 2-71, 3-97, 3-99, 3-108, 3-111, 4-83, 4-95, 5-24, 6-7
- Solid Waste, 7-18, 7-22, 1-16
- solid waste, 1-14, 4-131, 5-64, 5-65
- solid wastes, 1-14, 5-64, 5-65
- Solid Wastes, 1-16
- Species, 7-7, 7-27, 7-33, 7-34, 7-37, 7-40, 1-8, 1-16, 2-53, 2-76, 3-127, 3-131, 3-134, 3-137, 3-138, 3-139, 3-143, 3-144, 3-145, 3-147, 4-92, 4-93, 4-97, 4-106, 4-110, 4-112, 4-113, 4-114, 4-115, 5-31, 5-35, 5-42, 5-45
- species, 7-2, 7-18, 7-32, 7-33, 7-37, 7-40, 1-7, 1-8, 1-14, 1-16, 2-53, 2-59, 2-72, 2-73, 2-74, 2-75, 2-76, 2-77, 2-78, 3-16, 3-34, 3-38, 3-119, 3-120, 3-121, 3-123, 3-124, 3-125, 3-126, 3-127, 3-128, 3-133, 3-134, 3-136, 3-137, 3-138, 3-139, 3-140, 3-143, 3-144, 3-147, 3-148, 3-167, 4-84, 4-85, 4-86, 4-87, 4-88, 4-92, 4-93, 4-94, 4-97, 4-98, 4-99, 4-100, 4-101, 4-103, 4-104, 4-105, 4-106, 4-108, 4-109, 4-110, 4-111, 4-112, 4-113, 4-114, 4-115, 4-116, 4-126, 4-127, 5-13, 5-27, 5-28, 5-30, 5-31, 5-32, 5-33, 5-34, 5-37, 5-38, 5-39, 5-40, 5-41, 5-42, 5-43, 5-44, 5-45, 5-46, 5-47, 5-48, 5-49, 5-56, 6-2
- Springs, 7-1, 7-6, 7-7, 7-8, 7-10, 7-12, 7-15, 7-18, 1-1, 2-1, 2-3, 2-8, 2-36, 2-38, 2-44, 2-48, 2-49, 2-66, 3-22, 3-37, 3-38, 3-39, 3-40, 3-44, 3-65, 3-66, 3-72, 3-150, 3-159, 3-160, 3-161, 3-162, 3-165, 3-167, 3-168, 3-172, 3-173, 3-174, 3-175, 4-2, 4-11, 4-29, 4-35, 4-37, 4-89, 4-117, 4-122, 4-129, 4-130, 4-131, 4-132, 4-134, 4-136, 5-5, 5-9, 5-50, 5-55, 5-57, 5-58, 5-59, 5-63, 5-65, 6-1
- spring, 7-39, 2-23, 2-27, 2-30, 2-31, 2-50, 2-64, 2-70, 3-17, 3-49, 3-58, 3-65, 3-66, 3-68, 3-69, 3-71, 3-72, 3-75, 3-77, 3-78, 3-79, 3-93, 3-95, 3-134, 3-142, 4-17, 4-35, 4-36, 4-37, 4-38, 4-54, 4-59, 4-69, 4-76, 4-77, 4-89, 4-109, 5-13, 5-19, 5-21, 5-22, 5-39
- Spring, 7-8, 2-70, 2-73, 3-45, 3-46, 3-49, 3-57, 3-65, 3-66, 3-72, 3-75, 3-76, 3-79, 3-161, 4-24, 4-35, 4-37, 4-38, 4-40, 4-45, 4-46, 4-59, 4-66, 4-69, 4-100, 4-121, 5-13, 5-19, 5-51

springs, 7-31, 7-36, 7-37, 2-17, 2-18, 2-39, 2-41, 2-70, 3-13, 3-49, 3-50, 3-58, 3-65, 3-66, 3-67, 3-72, 3-75, 3-76, 3-77, 3-78, 3-102, 3-122, 3-124, 3-138, 3-139, 3-146, 4-14, 4-16, 4-17, 4-20, 4-24, 4-29, 4-32, 4-36, 4-37, 4-38, 4-44, 4-45, 4-59, 4-69, 4-76, 4-77, 4-89, 4-98, 4-105, 4-108, 5-15, 5-37, 5-47

Stockpiles
 stockpile, 2-37, 2-38, 2-63, 3-31, 3-49, 4-5, 4-8, 4-14, 4-15, 4-23, 4-48, 4-117
 Stockpile, 2-37, 3-30, 4-14, 4-15, 4-24, 4-31
 stockpiles, 2-4, 2-38, 3-21, 3-29, 4-3, 4-82, 4-83, 4-110, 4-111, 5-20

Surface Water, 7-4, 7-24, 7-25, 2-18, 3-18, 3-19, 3-45, 3-49, 3-53, 3-55, 3-57, 3-67, 3-68, 3-75, 4-32, 4-45, 4-49, 4-59, 4-66, 4-68, 4-74
 surface water, 7-31, 7-35, 1-1, 1-11, 1-15, 2-4, 2-18, 2-27, 2-30, 2-31, 2-32, 2-35, 2-43, 2-47, 2-51, 2-60, 2-61, 2-63, 2-67, 2-70, 2-71, 3-16, 3-19, 3-21, 3-45, 3-49, 3-50, 3-58, 3-66, 3-67, 3-68, 3-69, 3-76, 3-93, 3-141, 4-14, 4-21, 4-29, 4-33, 4-34, 4-35, 4-36, 4-37, 4-38, 4-44, 4-45, 4-48, 4-54, 4-59, 4-66, 4-69, 4-74, 4-76, 4-77, 4-86, 4-89, 4-105, 4-115, 5-15, 5-19, 5-20, 5-21, 5-22, 5-25, 5-26, 5-37, 5-42, 5-43, 5-47

T

Timber, 7-23, 3-141, 5-24, 5-27, 5-34, 5-38, 5-40, 5-51, 5-52
 timber, 7-36, 1-14, 1-16, 3-161, 3-164, 3-165, 3-166, 4-116, 4-122, 5-1, 5-9, 5-10, 5-20, 5-23, 5-25, 5-29, 5-34, 5-39, 5-45, 5-46, 5-49, 5-50, 5-51, 5-52, 5-56, 5-57, 5-59

Topography, 3-34, 4-3
 topography, 1-15, 2-39, 2-61, 3-14, 3-37, 3-75, 3-77, 3-147, 4-1, 4-2, 4-3, 4-4, 4-5, 4-7, 4-12, 4-16, 4-17, 4-18, 4-29, 4-83, 4-111, 4-119, 4-120, 5-1, 5-7, 5-8, 5-14, 5-28

Topsoil, 7-20, 2-4, 2-7, 2-38, 2-42, 4-82, 4-95
 topsoil, 7-40, 2-4, 2-17, 2-18, 2-30, 2-38, 2-39, 2-41, 2-43, 2-52, 2-53, 2-62, 2-63, 2-72, 3-45, 3-46, 3-97, 3-98, 3-114, 3-119, 4-3, 4-5, 4-38, 4-44, 4-45, 4-48, 4-86, 4-87, 4-93, 4-95, 4-98, 4-106, 4-110, 4-111, 4-114, 4-118, 4-119, 4-124, 5-23

Traffic, 7-10, 2-79, 3-150, 4-11, 4-12, 4-99, 4-122, 5-55
 traffic, 2-7, 2-49, 2-66, 2-67, 2-69, 3-44, 4-7, 4-8, 4-11, 4-12, 4-86, 4-97, 4-99, 4-102, 4-122, 4-123, 4-124, 5-9, 5-14, 5-55, 5-57, 6-2

Treaty Rights, 1-16, 2-78, 5-61
 treaty rights, 1-14, 2-78, 3-166, 4-126, 4-127, 5-58, 5-59, 6-4

Trout, 7-18, 3-140
 trout, 7-11, 7-19, 2-77, 3-138, 3-139, 3-140, 3-141, 3-143, 4-108, 4-109, 4-112, 4-114, 5-42, 5-43, 5-47

Trumpeter Swan, 3-145, 4-112, 5-45

V

Vegetation, 7-5, 7-20, 7-23, 7-34, 7-35, 1-16, 2-72, 3-99, 3-119, 3-120, 3-125, 3-144, 4-84, 4-85, 4-90, 4-94, 4-95, 5-26, 5-27, 5-28, 5-29, 5-30, 5-32, 5-40, 6-7
 vegetation, 7-32, 7-33, 7-34, 7-37, 7-38, 7-39, 7-40, 7-41, 1-14, 1-16, 2-4, 2-24, 2-35, 2-39, 2-40, 2-41, 2-46, 2-50, 2-51, 2-53, 2-72, 2-74, 3-1, 3-17, 3-18, 3-19, 3-97, 3-119, 3-120, 3-121, 3-122, 3-123, 3-124, 3-125, 3-126, 3-138, 3-147, 3-148, 3-149, 3-167, 4-12, 4-22, 4-82, 4-84, 4-85, 4-86, 4-87, 4-89, 4-92, 4-93, 4-94, 4-95, 4-98, 4-99, 4-103, 4-106, 4-107, 4-115, 4-116, 4-117, 4-119, 4-120, 4-121, 4-126, 5-10, 5-12, 5-13, 5-14, 5-15, 5-16, 5-23, 5-25, 5-26, 5-27, 5-28, 5-29, 5-30, 5-31, 5-32, 5-33, 5-34, 5-37, 5-38, 5-39, 5-40, 5-42, 5-43, 5-46, 5-47, 5-48, 5-49, 5-50, 5-51, 5-55, 5-56, 5-59, 5-60

Visual Resources, 1-15, 2-77, 6-7
 visual resource, 2-77, 3-148, 3-149, 3-160, 4-116, 4-119, 4-120, 5-49, 5-50
 Visual Resource, 7-29, 7-40, 1-15, 2-77, 3-148, 6-7
 visual resources, 2-77, 3-148, 3-149, 3-160, 4-116, 4-119, 4-120, 5-49, 5-50

W

Water Quality, 7-8, 7-15, 7-18, 1-11, 3-68, 3-69, 3-71, 3-72, 3-75, 3-93, 3-95, 3-96, 4-37, 4-68, 4-76, 5-21
 water quality, 7-15, 7-37, 1-11, 1-15, 1-16, 2-27, 2-28, 2-30, 2-31, 2-39, 2-41, 2-51, 2-59, 2-62, 2-67, 2-68, 2-76, 3-27, 3-32, 3-50, 3-57, 3-65, 3-66, 3-67, 3-68, 3-69, 3-70, 3-71, 3-72, 3-75, 3-78, 3-79, 3-90, 3-93, 3-94, 3-96, 3-97, 3-140, 3-141, 3-142, 3-167, 4-1, 4-14, 4-16, 4-18, 4-21, 4-32, 4-37, 4-38, 4-44, 4-45, 4-48, 4-66, 4-68, 4-74, 4-76, 4-89, 4-92, 4-108, 4-109, 4-111, 4-115, 4-120, 4-126, 5-15, 5-19, 5-23, 5-39, 5-43, 5-44, 5-45, 5-59, 6-1, 6-3

Water Resources, 7-9, 7-13, 7-18, 7-25, 7-28, 1-11, 1-12, 1-15, 1-17, 2-29, 2-70, 3-68, 3-80, 3-95, 6-4, 6-7, 6-8
 water resource, 1-14, 2-17, 3-1, 4-14, 4-24, 4-30, 4-76, 4-77, 5-9, 5-15, 5-20, 5-22, 5-23
 Water Resource, 7-9, 7-13, 7-17, 7-18, 7-25, 7-28, 1-11, 1-12, 1-15, 1-17, 2-29, 2-70, 3-68, 3-80, 3-95, 6-4, 6-7, 6-8
 water resources, 1-14, 2-17, 3-1, 4-14, 4-24, 4-30, 4-76, 4-77, 5-9, 5-15, 5-20, 5-22, 5-23

Watershed, 7-3, 7-22, 7-41, 3-45, 3-46, 3-47, 3-51, 5-15, 5-16, 5-17, 5-19, 5-20, 5-23, 5-25, 5-42, 6-6
 watershed, 7-41, 3-1, 3-17, 3-18, 3-45, 3-46, 3-49, 3-123, 3-141, 4-19, 4-21, 4-24, 4-32, 4-34, 4-35, 4-38, 4-109, 4-111, 5-1, 5-16, 5-22, 5-23, 5-26
 watersheds, 7-41, 3-45, 3-77, 5-1, 5-15, 5-25, 5-43
 Watersheds, 7-19, 3-45, 3-46, 3-49

Wetlands, 7-21, 7-23, 7-41, 1-16, 2-45, 2-72, 3-99, 3-102, 3-107, 3-117, 3-121, 3-122, 3-123, 3-124, 3-125, 4-18, 4-34, 4-44, 4-84, 4-87, 4-88, 4-90, 4-96, 5-26, 5-27, 5-28, 5-30, 5-31, 5-32, 5-33, 6-6

- wetland, 7-36, 7-41, 2-18, 2-23, 2-29, 2-31, 2-35, 2-45, 2-46, 2-50, 2-63, 2-64, 2-65, 2-73, 2-75, 3-17, 3-65, 3-75, 3-117, 3-119, 3-120, 3-121, 3-122, 3-123, 3-124, 3-125, 3-126, 3-128, 3-137, 4-35, 4-36, 4-38, 4-45, 4-87, 4-88, 4-89, 4-94, 4-96, 4-107, 4-113, 5-26, 5-27, 5-30, 5-31, 5-39, 5-44
- Wetland, 7-2, 7-10, 7-16, 7-19, 7-29, 7-36, 7-41, 2-23, 2-24, 2-28, 2-29, 2-31, 2-35, 2-37, 2-45, 2-62, 2-65, 2-70, 2-73, 3-65, 3-66, 3-72, 3-75, 3-78, 3-95, 3-120, 3-121, 3-122, 3-123, 3-125, 3-126, 3-138, 3-148, 4-16, 4-18, 4-20, 4-21, 4-29, 4-34, 4-35, 4-37, 4-38, 4-45, 4-46, 4-48, 4-66, 4-69, 4-77, 4-87, 4-88, 4-89, 4-94, 4-96, 4-105, 5-26, 5-31, 5-33
- wetlands, 7-2, 7-23, 7-36, 7-41, 1-7, 1-8, 1-16, 2-4, 2-18, 2-37, 2-39, 2-45, 2-46, 2-50, 2-51, 2-59, 2-62, 2-63, 2-64, 2-65, 2-73, 2-75, 2-76, 3-13, 3-18, 3-76, 3-121, 3-122, 3-123, 3-124, 3-125, 3-127, 3-128, 3-137, 3-138, 3-139, 3-145, 4-17, 4-20, 4-24, 4-34, 4-36, 4-44, 4-77, 4-84, 4-87, 4-88, 4-89, 4-94, 4-96, 4-104, 4-105, 4-106, 4-107, 4-110, 4-112, 4-114, 4-115, 5-25, 5-26, 5-27, 5-28, 5-30, 5-31, 5-32, 5-40, 5-43, 5-44, 5-45
- Wild and Scenic Rivers, 1-17, 3-160, 5-33
- Wilderness, 7-41, 1-17, 3-40, 3-44, 3-160
- wilderness, 1-17, 3-40, 5-33
- Wildlife, 7-2, 7-5, 7-7, 7-8, 7-9, 7-11, 7-13, 7-14, 7-17, 7-18, 7-19, 7-23, 7-24, 7-29, 7-36, 1-7, 1-8, 1-16, 2-44, 2-74, 3-57, 3-136, 3-137, 3-144, 3-160, 3-163, 4-97, 4-99, 5-33, 5-34, 5-35, 5-38, 5-40, 5-55, 6-4, 6-5, 6-6, 6-7
- wildlife, 7-7, 7-34, 1-7, 1-14, 1-16, 2-28, 2-39, 2-50, 2-74, 2-78, 3-19, 3-50, 3-57, 3-65, 3-66, 3-67, 3-124, 3-125, 3-126, 3-137, 3-143, 3-160, 3-167, 4-14, 4-36, 4-44, 4-88, 4-96, 4-97, 4-98, 4-99, 4-103, 4-105, 4-106, 4-107, 4-111, 4-112, 4-115, 4-126, 4-127, 5-21, 5-29, 5-32, 5-33, 5-34, 5-37, 5-38, 5-39, 5-40, 5-41, 5-42, 5-44, 5-46, 5-47, 5-48, 5-59, 6-7
- Wind, 7-29, 3-103, 3-164, 4-9
- wind, 7-33, 2-39, 3-37, 3-39, 3-103, 3-114, 4-8, 4-12, 4-22, 5-12, 5-25
- Y**
- Yellowstone Cutthroat Trout, 7-9, 2-77, 3-145, 4-112, 5-45
- Z**
- Zinc, 3-22, 3-25, 3-68, 3-69, 3-70, 3-72, 3-95, 4-32, 4-45, 4-49, 4-66, 4-67, 4-74, 4-75
- zinc, 3-15, 3-16, 3-18, 3-19, 3-20, 3-22, 3-29, 3-33, 3-34, 3-67, 3-72, 3-98, 4-30, 4-58, 4-109, 5-19