

REFERENCES

Ahlstedt, S.A., J.F. Connell, S. Bakaletz, and M.T. Fagg

- 2001 Freshwater Mussels of the National Park Service's Obed Wild and Scenic River, Tennessee. Prepared for the National Park Service. Oneida, Tennessee

Anderson, L.M., B.E. Mulligan, and L.S. Goodman

- 1984 "Effects of Vegetation on Human Response to Sound." *Journal of Arboriculture* 10(2): February 1984. Available at <http://joa.isa-arbor.com/request.asp?JournalID=1&ArticleID=1931&Type=2>.

Argus of Western America

- 1818 Description of Beatty Well. 12/4/1818. *Argus of Western America*, Frankfort, Kentucky Newspaper, page 1, Column 2, Filson Club Archives, Louisville, Kentucky

Barker, Scott

- 2005 "Landslide at Reclaimed Strip Mine Brings Reclamation Problems into Forefront." *Knoxville News-Sentinel*. March 9, 2005.

Big South Fork Scenic Railway (BSFSR)

- 2008 The Big South Fork Scenic Railway. Available at <http://www.bsfsry.com/picsstearns/depot.htm>. Accessed June 15, 2009.
- 2009 Extension of BSFSRY Excursion Line. Available at <http://www.bsfsry.com>. Accessed January 14, 2009.

Blount, Tom

- 2007 Personal communication via phone between Tom Blount, Big South Fork NRRA, and Josh Schnabel, The Louis Berger Group, Inc., re: park soundscapes. June 17, 2007.
- 2009a Personal communication via e-mail between Tom Blount, Big South Fork NRRA, and Dan Niosi, The Louis Berger Group, Inc., re: federally listed species at Big South Fork NRRA and Obed WSR. May 14, 2009.
- 2009b Personal communication via phone between Tom Blount, Big South Fork NRRA, and Landon Vine, The Louis Berger Group, Inc., re: park management and operations. January 15, 2009.

Bogan, A.E. and P.W. Parmalee.

- 1983 Tennessee's Rare Wildlife, Volume II: The Mollusks. Tennessee Wildlife Resources Agency, Nashville, Tennessee, 123 pp., 53 maps, 53 plates, Volume 2 of Tennessee Wildlife

Botanical Society of America

- 2009 Website. <http://www.botany.org>. Accessed January 30, 2009.

References

Britzke, R.

- 2007 *Mammal Inventory of Big South Fork National River and Recreation Area, Tennessee and Kentucky*. A report submitted to National Park Service, Appalachians Highlands Network. March 2007.

Brown, Nancy, David Hasty, Tom Keohan, and Lee Terzis

- 2001 More Than a Database: The National Park Service's Cultural Landscapes Inventory Improves Resource Stewardship from the 2001 GWS Biennial Conference. Available at <http://www.georgewright.org/53brown.pdf>.

Bucur, Voichita

- 2006 *Urban Forest Acoustics*. Springer.

Bureau of Land Management (BLM), U.S. Department of the Interior

- 1999 Noise Analysis for the Pineland Anticline Oil and Gas Exploration and Development Project. Sublette County, Wyoming. January 1999.

Bureau of Outdoor Recreation, U.S. Department of the Interior

- 1976 *Obed River Wild and Scenic River Study*. June 1976. Wartburg, Tennessee.

California Department of Transportation (Caltrans)

- 1998 *Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol*. October 1998. Available at <http://www.dot.ca.gov/hq/env/noise/pub/Technical%20Noise%20Supplement.pdf>. Accessed July 21, 2009.

Campbell, Philip

- 2009 Personal communication via phone between Philip Campbell (ret.), Obed Wild and Scenic River, and Landon Vine, The Louis Berger Group, Inc., re: park management and operations. January 15, 2009.

Center for Plant Conservation

- 2007 "National Collection of Imperiled Plants Profile—*Calamovilfa arcuata*." Updated August 15, 2007. Available at http://www.centerforplantconservation.org/ASP/CPC_ViewProfile.asp?CPCNum=667. Accessed April 8, 2009.

Chapman, Jefferson

- 1975 *The Rose Island Site and the Bifurcated Point Tradition*. University of Tennessee, Department of Anthropology, Report of Investigations 14, Knoxville.

Cohen, Mark Nathan

- 1977 *The Food Crisis in Prehistory: Overpopulation and the Origins of Agriculture*. New Haven, Connecticut: Yale University Press.

Comiskey, C. E. and D. A. Etnier.

- 1972 Fishes of the Big South Fork Cumberland River. *J. Tenn. Acad. Sci* 47:140–145

Commonwealth of Kentucky

- 1970 House Resolution #78. Available at:
[Http://www.lrc.state.ky.us/recarch/02rs/HR78/bill.doc](http://www.lrc.state.ky.us/recarch/02rs/HR78/bill.doc) Accessed December 1, 2010.

Cornell University

- 2009 Department of Entomology website. <http://www.entomology.cornell.edu/>. Cornell University College of Agriculture and Life Sciences. Accessed January 30, 2009.

Council on Environmental Quality (CEQ)

- 1981 “Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations.” *Federal Register* 46(55):18026-38. Available at:
[Http://www.nepa.gov/nepa/regs/40/40p3.htm](http://www.nepa.gov/nepa/regs/40/40p3.htm)
- 1997 “Considering Cumulative Effects under the National Environmental Policy Act.”

Cowardin, Lewis M., Virginia Carter, Francis C. Golet, and Edward T. LaRoe

- 1979 *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, North Dakota: Northern Prairie Wildlife Research Center Online. Available at
<http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm> (version 04DEC1998). Accessed April 9, 2009.

Dean, Kevin

- 2009 Personal communication via e-mail between Kevin Dean, City of Crossville, Tennessee, and Landon Vine, The Louis Berger Group, Inc., re: water intakes. January 29, 2009.

Des Jean, Tom

- 1994 “A Lithic Based Prehistoric Cultural Chronology of the Upper Cumberland Plateau.” *Tennessee Anthropologist* 19(2):92–115.
- 1997 “Niter Mining in the Area of the Big South Fork of the Cumberland River”. *Tennessee Anthropologist* 22(2):178–225.
- 2009 Personal communication via telephone between Tom Des Jean, Big South Fork National Recreation Area, and Stephen Anderson, The Louis Berger Group Inc., re: status of archeological, historic, and ethnographic resources. February 13, 2009.
- 2010 Personal communication via telephone between Tom Des Jean, Big South Fork National Recreation Area, and Lucy Bambrey, The Louis Berger Group Inc., re: update on cultural resources. April 7, 2010.

Dragoo, Don W.

- 1976 “Some Aspects of Eastern North American Prehistory: A Review 1975.” *American Antiquity* 41(1):3–27.

References

Ecological Society of America

- 2000 "Acid Deposition." Summer 2000. Available at http://www.esa.org/education_diversity/pdfDocs/aciddeposition.pdf. Accessed September 20, 2010.

Elliston, Morgan

- 2009 Personal communication via e-mail between Morgan Elliston, Kentucky Division of Water, and Landon Vine, The Louis Berger Group, Inc., re: water intakes. February 4, 2009.

Etnier, D.A., and W.C. Starnes

- 1993 *The Fishes of Tennessee*. Knoxville, Tennessee: University of Tennessee Press.

Evaldi, R. D., Garcia, R.

- 1991 Quality of South Fork Cumberland River, near Stearns, Kentucky, in Proceedings of the Second International Conference on the Abatement of Acidic Drainage: Ottawa, MEND Program, CANMET, Tome 3, p. 417-424 (as cited in NPS 2005a).

Federal Highway Administration, U.S. Department of Transportation (FHWA)

- 1995 *Highway Traffic Noise Analysis and Abatement Policy and Guidance*. U.S. Department of Transportation Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch. Washington D.C. June 1995.
- 2006 *FHWA Highway Construction Noise Handbook*. Final Report, August 2006. Available at <http://www.fhwa.dot.gov/environment/noise/handbook/index.htm>. Accessed January 15, 2010.

Federal Interagency Committee on Noise

- 1992 Federal Agency Review of Selected Airport Noise Analysis Issues. August 1992.

Fenneman, N.M., and Johnson, D.W.

- 1946 *Physical Divisions of the United States* (map). In: U.S. Forest Service Collaborative Environmental Monitoring and **Research Initiative (CEMRI)** Physiographic Divisions. Available at http://www.fs.fed.us/ne/global/research/drb/data/delr_physio.html. Accessed April 8, 2009.

Fiegel, Kurt H.

- 1988 Disputing the Titusville Myth. Paper presented at the 23rd Ohio Valley Urban and Historic Symposium.

Flora of North America

- n.d. Species profiles. Available at <http://www.efloras.org>. Accessed January 30, 2009.

Ruth Ann Hales

- n.d. Air Pollution Affects Local Trees and Shrubs. Available at: <http://www.colostate.edu/Dept/CoopExt/4DMG/Trees/airpollu.htm>. Accessed June 23, 2009.

Harris, Clay

- 2009 Personal communication via e-mail between Clay Harris, Middle Tennessee State University, Department of Geosciences, and Joshua Schnabel, The Louis Berger Group, Inc., re: physiography of the Cumberland Plateau. November 18, 2009.

Hench, Bill

- 2009a Personal communication via e-mail between Bill Hench, Tennessee Division of Water Supply, and Landon Vine, The Louis Berger Group, Inc., re: water resources (intakes in Big South Fork watershed). January 27, 2009.
- 2009b Personal communication via e-mail between Bill Hench, Tennessee Division of Water Supply, and Landon Vine, The Louis Berger Group, Inc., re: water resources (intakes in Big South Fork watershed). January 27, 2009.

Hudson, Matt

- 2009 Personal communication via e-mail between Matt Hudson, Obed Wild and Scenic River, and Michael Edwards, NPS Environmental Quality Division, re: Obed WSR oil and gas incidents. December 17, 2009.

Huling, Marcus

- 1820 Letter to his brother in Lewistown, Pennsylvania, dated April 8, 1820 from the Adair Salt Well. Filson Club Archives, Louisville, Kentucky;

International Panel on Climate Change (IPCC)

- 2007 *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, New York.

Jennings, Jesse E.

- 1989 Prehistory of North America (third edition). Mountain View, California: Mayfield Publishing Company.

Jillison, W. R.

- 1952 The First Oil Well in Kentucky, Frankfort, Roberts Printing Company, Lexington.

Jones, J.W. and Neves, R.J.

- 2000 Annual Progress Report for 1999; Life History and Artificial Culture of Endangered Mussels. Unpublished report for the Tennessee Wildlife Resources Agency, Nashville, Tennessee, 41 pages.

References

Keaton, Mike

- 2009 Personal communication via telephone from Mike Keaton, Oneida Water Commission, re: water intakes. January 28, 2009.

Kentucky Department of Fish and Wildlife Resources (KDFWR)

- 2008 *Kentucky Hunting and Trapping Guide: July 2008–February 2009*. Available at <http://www.kdfwr.state.ky.us/navigation.aspx?cid=775&navpath=C772>. Accessed April 8, 2009.

Kentucky Environmental and Public Protection Cabinet (KY EPPC)

- 2008 Final 2008 Integrated Report to Congress on the Condition of Water Resources in Kentucky. Volume II. 303(d) List of Surface Waters. Division of Water.

Kentucky State Nature Preserves Commission

- 2009 County Report of Endangered, Threatened, and Special Concern Plants, Animals, and Natural Communities of Kentucky. Data Current as of February 2009. Available at http://www.naturepreserves.ky.gov/inforesources/reports_pubs.htm. Accessed April 7, 2009.

Kerr, Jonathan P.

- 1998 Prehistory of the Upper Cumberland River Drainage in the Kentucky, Virginia and Tennessee Border Region.

Law, G.S., R.R. Knight, and B.A. Bryan

- 2010 Hydrologic Data and Analysis for the Obed River Watershed, Cumberland Plateau, Tennessee. U.S. Geological Survey Scientific Investigations Report.

McCoy, Steven

- 2009 Personal communication via telephone from Steven McCoy, Jamestown Water and Sewer Department, re: water intakes. January 28, 2009.

McNutt, Charles H., and Lisa C. Lumb

- 1987 Three Archeological Sites near Hartsville: Smith and Trousdale Counties, Tennessee. Memphis State University, Department of Anthropology, Anthropological Research Center, Occasional Papers 14, Memphis, Tennessee Valley Authority, Publications in Anthropology 48, Norris.

Meek, B. D., E.R. Rechel, L.M. Carter, W.R. DeTar, and A.L. Urie

- 1992 “Infiltration Rate of a Sandy Loam Soil: Effects of Traffic, Tillage, and Plant Roots.” *Soil Science Society of America Journal* 56:908–913.

National Fire Plan, U.S. Department of the Interior and U.S. Department of Agriculture

- 2004 *Fire Management Plan—Glossary of Terms*. Last updated August 31, 2004. Available at <http://www.fireplan.gov/resources/glossary/d.html>. Accessed March 17, 2007.

National Institute for Occupational Health and Safety (NIOSH)

- 2009 *Hearing Protection and Air-Rotary Drilling—Part 2*. March 5, 2009. Available at <http://www.cdc.gov/niosh/mining/pubs/pubreference/outputid1700.htm>. Accessed January 18, 2010.

National Park Service (NPS), U.S. Department of the Interior

- n.d.a Big South Fork NRRA Draft SOP B-2. On file at the park.
- n.d.b Reference Manual 77: Natural Resource Management.
- 1983 The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. September 29, 1983.
- 1986 Obed Wild and Scenic River Land Protection Plan. October 1986. Wartburg, Tennessee.
- 1993 Obed Wild and Scenic River Resource Management Plan. Wartburg, Tennessee.
- 1995a Final General Management Plan, Development Concept Plan, Environmental Impact Statement, Obed Wild and Scenic River Tennessee. August 1995. Wartburg, Tennessee.
- 1995b Secretary of the Interior's Standards for the Treatment of Historic Properties.
- 1996 Big South Fork National River and Recreation Area Resource Management Plan. June 1996. Oneida, Tennessee.
- 1997 Big South Fork National River and Recreation Area Water Resources Management Plan. June 1997. Oneida, Tennessee.
- 1998a Big South Fork National River and Recreation Area Land Protection Plan Update. April 1998. Oneida, Tennessee.
- 1998b Obed Wild and Scenic River Water Resources Management Plan. August 1998. Wartburg, Tennessee.
- 1998c Director's Order 28: Cultural Resource Management.
- 2000 *Director's Order 47: Soundscape Preservation and Noise Management*. Available at <http://www.nps.gov/policy/DOrders/DOrder47.html>. Accessed December 15, 2008.
- 2001 Director's Order 12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making. Washington, D.C.
- 2002a Obed Wild and Scenic River Final Climbing Management Plan.
- 2002b Director's Order 77-1: Wetland Protection.
- 2003a Howard/White Unit No. 1 Oil Spill Natural Resources Damage Assessment—Preassessment Phase Report. Prepared by Research Planning, Inc. (RPI). April 2003. Wartburg, Tennessee.

References

- 2003b Revised Draft Environmental Assessment for Recovery of Freshwater Mussels in the Free-Flowing Reach of the Big South Fork of the Cumberland River. September 2003. Oneida, Tennessee.
- 2003c “NPS: Nature and Science, Natural Sounds, Understanding Soundscapes and Acoustics.” Last updated December 18, 2003. Available at <http://www.nature.nps.gov/naturalsounds/understanding/>. Accessed March 23, 2009.
- 2003d Director’s Order 77-2: Floodplain Management.
- 2004a *Damage Assessment Study Plan: Pryor Oil Well Fire and Spill, Obed Wild and Scenic River—Trustee Review Draft*. Submitted by the Department of the Interior on behalf of the State of Tennessee, the National Park Service, and the U.S. Fish and Wildlife Service. September 30, 2004. Wartburg, Tennessee.
- 2004b Obed Wild and Scenic River Fire Management Plan. U.S. Department of the Interior.
- 2004c Director’s Order 28A: Archeology.
- 2004d “Appalachian Highlands Network – Assessing the Risk of Foliar Injury from Ozone on Vegetation in Parks in the Appalachian Highlands Network.” October 2004. Available at <http://www.nature.nps.gov/air/Pubs/pdf/03Risk/aphnO3RiskOct04.pdf>. Accessed September 20, 2010.
- 2005a Big South Fork National River and Recreation Area Final General Management Plan and Environmental Impact Statement. February 2005. Oneida, Tennessee.
- 2005b Obed Wild and Scenic River Strategic Plan, October 1, 2005 to September 30, 2008. Wartburg, Tennessee.
- 2005c Big South Fork National River and Recreation Area Business Plan, Fiscal Year 2004. Oneida, Tennessee.
- 2005d Final Oil and Gas Management Plan / Environmental Impact Statement. December 2005. Big Thicket National Preserve, Texas.
- 2005e Director’s Order and Reference Manual 53: Special Park Uses.
- 2006a *Operators Handbook for Non-federal Oil and Gas Development in Units of the National Park System*. Prepared by the National Park Service Geologic Resources Division. October 2006. Denver, Colorado
- 2006b “Briefing Statement: Oil and Gas Development in the National Park System.” October 26, 2006. Denver, Colorado.
- 2006c *Management Policies 2006*. Washington, D.C.
- 2006d Big South Fork National River and Recreation Area Fields Management Plan. March 2006. Oneida, Tennessee.
- 2006e Big South Fork National River and Recreation Area Fire Management Plan. September 2004. Oneida, Tennessee.

- 2006f *Big South Fork National River and Recreation Area—Plants*. Last updated August 15, 2006. Available at <http://www.nps.gov/biso/naturescience/plants.htm>. Accessed March 31, 2009.
- 2006g *Big South Fork National River and Recreation Area—Fish*. Available at <http://www.nps.gov/biso/naturescience/fish.htm>. Accessed March 23, 2009.
- 2006h *Big South Fork National River and Recreation Area—Mussels*. Available at <http://www.nps.gov/biso/naturescience/mussels.htm>. Accessed March 23, 2009.
- 2007a Big South Fork National River and Recreation Area/Obed Wild and Scenic River Oil and Gas Management Plan/EIS Final Internal Scoping Report.
- 2007b Obed Wild and Scenic River certified lists of bird, amphibian, and fish species. Reports generated by the NPS Inventory and Monitoring Program. February 14, 2007.
- 2008a Environmental Assessment Plug and Reclaim Eleven Abandoned Wells at Big South Fork National River and Recreation Area. June 2008.
- 2008b “Big South Fork National River and Recreation Area: History and Culture.” Available at <http://www.nps.gov/biso/historyculture/tragictale.htm>. Accessed June 24, 2008.
- 2008c “Obed Wild and Scenic River: History and Culture.” Available at <Http://www.nps.gov/obed/historyculture/places.htm>. Accessed June 24, 2008.
- 2008d “Big South Fork National River and Recreation Area: Night Sky Viewing.” Available at <http://www.nps.gov/biso/planyourvisit/astronomy.htm>. Accessed June 24, 2008.
- 2008e Programmatic Agreement among the National Park Service (U.S. Department of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act.
- 2008f “2004-2008 5-year Air Quality Estimates.” Air Resources Division. Available at http://www.nature.nps.gov/air/planning/docs/NPS_AQC_0408_values_web.pdf. Accessed September 20, 2010.
- 2009a Big South Fork National River and Recreation Area—Google Earth—Big South Fork. Available at <http://www.nps.gov/biso/photosmultimedia/virtualtour.htm>. Accessed January 21, 2009.
- 2009b NPS: Nature and Science, Natural Sounds. Available at <http://www.nature.nps.gov/naturalsounds/>. Accessed February 16, 2009.
- 2009c Great Smoky Mountains National Park Acoustical Monitoring Snapshot—Winter. Natural Resource Program Center Natural Sounds Program. January, 2009.
- 2009d Great Smoky Mountains National Park Acoustical Monitoring Snapshot-Summer. Natural Resource Program Center Natural Sounds Program. January, 2009.

References

- 2009e Big South Fork National River and Recreation Area. Available at <http://www.nps.gov/biso/>. Accessed February 6, 2009.
- 2009f List of Classified Structures. Available at <http://www.hscl.cr.nps.gov/insidenps/summary.asp>. Accessed February 24, 2009.
- 2009g Big South Fork National River and Recreation Area: Plan your visit. Available at <http://www.nps.gov/biso/planyourvisit/index.htm>. Accessed April 8, 2009
- 2009h Obed Wild and Scenic River: Plan your visit. Available at <http://www.nps.gov/obed/planyourvisit/index.htm>. Accessed April 8, 2009
- 2009i National Park Service Public Use Statistics Office. Available at <http://www.nature.nps.gov/stats/index.cfm>. Accessed January 14, 2009.
- 2009j Big South Fork National River and Recreation Area, Kentucky and Tennessee. Draft Biological Assessment of Proposal to Plug and Reclaim Abandoned Oil and Natural Gas Wells. November 2009.
- 2009k Interim Guidance: Considering Climate Change in NEPA Analysis. NPS Natural Resource Program Center, Environmental Quality Division. November 2009.
- 2010a Environmental Assessment for Well Plugging and Reclamation; Big South Fork National River and Recreation Area, Kentucky and Tennessee; January 2009.
- 2010b "Rating Air Quality Conditions." Air Resources Division. January 2010. Available at http://www.nature.nps.gov/air/planning/docs/20100112_Rating-AQ-Conditions.pdf. Accessed September 2010.
- 2010c Technical Guidance on Assessing Impacts to Air Quality in NEPA and Planning Documents. NPS Air Resources Division, Internal Review Draft, April 24, 2010.
- 2010d 2010, Emissions Estimates for Oil & Gas Sources - Big South Fork NR&RA & Obed River W&SR ARD.
- 2010e Appalachian Highlands network (APHN). Climate Change Resource Brief. NPS, USDI, Southeast Region Inventory and Monitoring.
- National Parks and Conservation Association (NPCA)
- 2007 Unnatural Disaster: Global Warming and Our National Parks. Washington, D.C.
- National Register of Historic Places (NRHP)
- 2009 National Register of Historic Places NPS focus search portal. Available at <http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome>. Accessed February 6, 2009.
- Native Plant Information Network
- n.d. "Explore Plants." The University of Texas at Austin, Lady Bird Johnson Wildflower Center. Available at <http://www.wildflower.org/explore/>. Accessed March 27, 2009.

Natural History of North America

- 2009 Website. <http://www.nearctica.com/>. Accessed January 30, 2009.

NatureServe

- 2007 International Ecological Classification Standard: Terrestrial Ecological Classifications. Draft Associations and Alliances of Big South Fork National River and Recreation Area. NatureServe Central Databases. Arlington, Virginia. Data current as of October 26, 2006.
- 2009 NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available at <http://www.natureserve.org/explorer>. Accessed March 2009.

Nicholson, Suzanne W., Connie L. Dicken, John D. Horton, Keith A. Labay, Michael P. Foose, and Julia A.L. Mueller

- 2007 Preliminary integrated geologic map databases for the United States: Kentucky, Ohio, Tennessee, and West Virginia Version 1.1, Updated December 2007. Available at <http://pubs.usgs.gov/of/2005/1324/index.htm>. Accessed May 19, 2009.

Nordman, Carl W.

- 2008 Plant Community Classification for Obed Wild and Scenic River. Durham, North Carolina: NatureServe.

O'Bara, C.J.

- 1985 *Status survey of the blackside dace (Phoxinus cumberlandensis)*. Report to the U.S. Department of the Interior, Fish and Wildlife Service, 100 Otis Street, Room 224, Asheville, North Carolina. 30 pp. plus Appendix.

Obed Wild and Scenic River Natural Resources Trustee Council (OWSRNRTC)

- 2008 *Damage Assessment and Restoration Plan/Environmental Assessment, Howard/White Unit No. 1 Oil Spill, Public Review Draft*. Prepared by Obed Wild and Scenic River Natural Resource Trustee Council, including: U.S. Department of Interior, National Park Service, U.S. Fish and Wildlife Service, Tennessee Department of Environment and Conservation. January 2008. Available at http://www.nps.gov/obed/parkmgmt/upload/DARP.Obed_1.31.08_final-2.pdf. Accessed April 8, 2009.

O'Connell, Kim

- 2004 "From the River Bottom Up: Restoring Mussels in the Big South Fork River." *National Parks Magazine*, Fall 2004. Available at <http://www.npca.org/magazine/2004/fall/mussels.html>. Accessed March 23, 2009.

Owens, Steve

- 2009 Personal communication with Joshua Schnabel, The Louis Berger Group, Inc., regarding the Big Creek Water Intake in the vicinity of Big South Fork National River and Recreation Area. October 16, 2009.

References

Parmalee, P.W., and A. Bogan

- 1998 *The Freshwater Mussels of Tennessee*. University of Tennessee Press.

Penskar, M.R., and P.J. Higman

- 1999 Special plant abstract for *Utricularia subulata* (zigzag bladderwort). Michigan Natural Features Inventory, Lansing, Michigan. 2 pp. Available at http://web4.msue.msu.edu/mnfi/abstracts/botany/Utricularia_subulata.pdf. Accessed March 27, 2009.

Rikard, Michael, Sam Kunkle, and Juliette Wilson

- 1986 *Big South Fork National River and Recreation Area: Water Quality Report 1982–1984*. Water Resources Report No. 86-7. Water Resources Division, National Park Service, Fort Collins, Colorado.

Schmalzer, Paul A., Thomas S. Patrick, and H.R. DeSelm

- 1985 “Vascular Flora of the Obed Wild and Scenic River, Tennessee.” *Castanea* 50(2):71–88.

Schapansky, Rebecca

- 2008a Personal communication via e-mail between Rebecca Schapansky, Obed WSR, and Dan Niosi, The Louis Berger Group, Inc., re: mammals at the park unit. May 29, 2008
- 2008b Personal communication via e-mail between Rebecca Schapansky, Obed WSR, and Dan Niosi, The Louis Berger Group, Inc., re: birds, reptiles, plants, and endangered species at the park unit. May 21, 2008.
- 2008c Personal communication via e-mail between Rebecca Schapansky, Obed WSR, and Dan Niosi, The Louis Berger Group, Inc., re: crayfish at the park unit. November 14, 2008.
- 2009 Personal communication via e-mail between Rebecca Schapansky, Obed WSR, and Dan Niosi, The Louis Berger Group, Inc., re: soundscapes at the park unit. February 2, 2009.

Scott, E.

- 2007 Fish Survey of Big South Fork National River and Recreational Area. Tennessee Valley Authority. September 2007.

Shepard, Russell G.

- 1988 Americas First Commercial Oil Well. *Earth Sciences* Vol. 7, No. 2 pp. 134-139.

Shute, P. W., P. L. Rakes and J. R. Shute.

- 1997 Status Survey of the Duskytail Darter (*Etheostoma percnurum*) in the Big South Fork of the Cumberland River. Unpublished Report. NPS Contract No. GR-5-106052-6-01. National Park Service, Big South Fork National River and Recreation Area, Oneida, Tennessee. 17 pp.

Smith, Kevin, and Tom Des Jean

- 2008 Cliffline Archaeological Survey Project at Big South Fork National River and Recreation Area (MTSU and BISO). Available at <http://frank.mtsu.edu/~soc/BISO/>.

Spradlin, E.

- 2007 Personal communication between E. Spradlin, NPS Big South Fork NRRA, and Dan Niosi, The Louis Berger Group, Inc., regarding oil and gas wells in the vicinity of Big South Fork NRRA. August 16, 2007.

Stedman, S.J.

- n.d. Bird data from the Big South Fork National River and Recreation Area, Kentucky and Tennessee, and the Obed Wild and Scenic River, Tennessee—Central Node. Available at <http://iweb.tntech.edu/sstedman/BSFNRRRA--CentralNode.htm>. Accessed April 8, 2009.
- 2006 Final Report of Bird Inventory: Big South Fork National River and Recreation Area, 2003–2005. Tennessee Technological University.

Stephens, D., J. Kiser, and J. MacGregor

- 2008 A Survey of the Amphibians and Reptiles of the Big South Fork National River and Recreation Area (Kentucky and Tennessee). National Park Service. Appalachian Highlands Inventory and Monitoring Network. January 2008.

Stoeckinius, T.E., C.A. Emery, T.P. Shah, J.R. Johnson, L.K. Parker, and A.K. Pollack

- 2009 *Air Quality Modeling Study for the Four Corners Region*. ENVIRON International Corporation. New Mexico Environment Department Air Quality Bureau. August 2009.

Tennessee Department of Environment and Conservation (TDEC)

- 2001 Oil and Gas Well Inventory for the Big South Fork National River and Recreation Area. Prepared by the TDEC Division of Geology.
- 2008a Final Year 2008 303(d) List. Division of Water Pollution Control. Nashville, Tennessee. 180 pp.
- 2008b Tennessee Natural Heritage Program. Rare Plant List 2008.
- 2009 *A Guide to the Rare Animals of Tennessee*. Prepared by the Division of Natural Areas. March 2009. Available at www.state.tn.us/environment/na/nhp.shtml. Accessed March 2009.

Tennessee Division of Natural Areas

- 2007 Tennessee List of Rare Species by County. June 2007. Available at <http://www.state.tn.us/environment/na/>. Accessed April 7, 2009.

Tennessee Wildlife Resources Agency (TWRA)

- 2008 *2008 Tennessee Hunting and Trapping Guide*. Available at <http://www.state.tn.us/twra/pdfs/huntguide.pdf>. Accessed April 8, 2009.

Thompson, James

- 1979 *Archeological Reconnaissance of the Obed Wild and Scenic River*. National Park Service, Southeast Archeological Center, Tallahassee, Florida.

References

U.S. Department of Agriculture (USDA)

- 2009a Natural Resource Conservation Service. Web Soil Survey. Available at <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed March 25, 2009.
- 2009b Natural Resource Conservation Service. Urban Hydrology for Small Watersheds. Technical Release No.55. June 1986. Available at <http://cset.sp.utoledo.edu/~nkissoff/pdf/CIVE-3520/Modified-tr55.pdf>. Accessed March 25, 2009.

U.S. Environmental Protection Agency (EPA)

- 2008 "Pollution Report No. 3." August 4–8, 2008, reporting period. Available at http://www.epaosc.org/site_profile.asp?site_id=4269%20. Accessed June 17, 2009.
- 2010 "Prevention of Significant Deterioration (PSD) Basic Information." Available at <http://www.epa.gov/nsr/psd.html>. Accessed September 20, 2010.

U.S. Fish and Wildlife Service (USFWS), U.S. Department of the Interior

- 1983 *Recovery Plan for Spotfin Chub (Hybopsis monacha)*. Atlanta, Georgia. Available at http://ecos.fws.gov/docs/recovery_plans/1983/831121.pdf. Accessed September 20, 2007.
- 1988 *Blackside Dace Recovery Plan*. Atlanta, Georgia. Available at http://ecos.fws.gov/docs/recovery_plans/1988/880817.pdf. Accessed September 20, 2007.
- 1990 *Purple Cat's Paw Pearlymussel Recovery Plan*. Atlanta, Georgia. Available at http://ecos.fws.gov/docs/recovery_plan/920310.pdf. Accessed May 15, 2009.
- 1992 *Virginia spiraea (Spiraea virginiana Britton) Recovery Plan*. Newton, Massachusetts.
- 1994 Duskytail Darter Recovery Plan. Atlanta, Georgia.
- 1996 Recovery Plan for Cumberland Rosemary. Atlanta, Georgia.
- 2004 Recovery Plan for Cumberland Elktoe, Oyster Mussel, Cumberland Combshell, Purple Bean, and Rough Rabbitsfoot. Atlanta, Georgia.
- 2009a *ESA Basics: More Than 30 Years of Conserving Endangered Species*. Available at http://www.fws.gov/endangered/factsheets/ESA_basics.pdf. Accessed May 15, 2009.
- 2009b *Wetlands and Deepwater Habitats Classification*. Available at <http://www.fws.gov/wetlands/Data/webatx/atx.html>. Accessed January 20, 2009.
- 2009c "Erimonax monachus (Spotfin Chub)." Available at <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E012>. Accessed December 21, 2009.
- 2009d "Villosa perpurpurea (Purple Bean) Species Profile." Available at <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=F001>. Accessed December 21, 2009.

U.S. Forest Service (USFS), U.S. Department of Agriculture

- 2004a Land and Resource Management Plan Daniel Boone National Forest. Revised April 2004.
- 2004b Final Environmental Impact Statement, Daniel Boone National Forest Land and Resource Management Plan. April 2004.
- 2005 *Daniel Boone National Forest Natural Resources: Minerals*. Available at <<http://www.fs.fed.us/r8/boone/resources/minerals/index.shtml>>. Last updated February 19, 2005. Accessed March 18, 2007.

U.S. Geological Survey (USGS), U.S. Department of the Interior

- 2004 Water resources data, Kentucky, water year 2004. Water-Data Report KY-04-1. Available at <http://pubs.usgs.gov/wdr/2004/wdr-ky-04-1/>. Accessed January 11, 2010.
- 2007 Alluvial bars of the Obed Wild and Scenic River, Tennessee.
- 2009a Physiographic divisions of the conterminous U.S. Available at <http://water.usgs.gov/GIS/metadata/usgswrd/XML/physio.xml>. Accessed March 25, 2009.
- 2009b USGS real-time water data for the nation. Available at <http://waterdata.usgs.gov/nwis/rt>. Accessed February 2009.

Utah State University Herbarium

- n.d. Grass manual on the Web. Available at <http://herbarium.usu.edu/webmanual/default.htm>. Accessed March 27, 2009.

Edward Vasquez, Roger Sheley, and Tony Svejcar

- 2008 Nitrogen Enhances the Competitive Ability of Cheatgrass (*Bromus tectorum*) Relative to Native Grasses. *Invasive Plant Science and Management*. Vol 1, July–September 2008. Pp. 287–295

Vistas

- 2007 “Great Smoky Mtn Group Contribution Assessment.” PowerPoint Presentation. Available at http://www.vistas-sesarm.org/documents/GRSMgroupContributionAssessment_May2907.pdf. Accessed September 20, 2010.

Warren, M. L., B. M. Burr, and J.M. Grady

- 1994 *Notropis Albizonatus*, a New Cyprinid Fish Endemic to the Tennessee and Cumberland River Drainage, with Phylogeny of the *Notropis Procne* Species Group. *Copeia* 1994(4): 868–886.

Widlak, Jim

- 2009 Personal communication via e-mail between Jim Widlak, USFWS, and Jim Orr of URS Corporation, re: federally endangered species present in Big South Fork NRR and Obed WSR. January 22, 2009.

References

Willey, Gordon

- 1966 An Introduction to American Archeology, Volume 1: North and Middle America. Prentice Hall.

Williams, C., R. Bivens, and B. Carter.

- 2002 *A Survey of Big South Fork Crayfish (Cambarus bouchardi)*. Tennessee Wildlife Resources Agency. April 2002.

Wilson, R.C., and D.W. Finch

- 1980 The Big South Fork National River and Recreation Area: Phase I Archeological Reconnaissance Survey in McCreary County, Kentucky, Pickett, Fentress, Scott, and Morgan Counties, Tennessee. Draft submitted to U.S. Corps of Engineers, Nashville District.

GLOSSARY

Abandonment—The termination of oil and gas production operations, removal of facilities, plugging of the well bore, and reclamation of surface disturbances.

Action alternative—An alternative that would involve a change from existing conditions, including changes to established trends or management direction.

Advisory Council on Historic Preservation(ACHP)—The ACHP is an independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources, and advises the President and Congress on national historic preservation policy.

Affected environment—Term used in the National Environmental Policy Act to denote surface or subsurface resources (including social and economic elements) within or adjacent to a geographic area that could potentially be affected by a proposed action; the environment of the area to be affected or created by the alternatives under consideration. (40 CFR § 1502.15).

Alternative—Combination of management prescriptions applied in specific amounts and locations to achieve desired management goals and objectives.

Annular space—The space surrounding one cylindrical object placed inside another, such as the space surrounding a tubular object placed in a wellbore.

Aquifer—A water-bearing rock, rock formation, or group of formations. Aquifers can be either unconfined or confined.

Arches—Natural geologic features which bear the properties of an archway, formed through erosion over an extended period of time. Natural arches are particularly sensitive to surface disturbances such as seismic activity which could compromise their strength.

Base floodplain—100-year floodplain.

Best management practices (BMPs)—BMPs are state-of-the-art mitigation measures applied to oil and natural gas drilling and production to help ensure that energy development and operations are conducted in an environmentally responsible manner. BMPs can be simple, such as choosing a paint color that helps oil and gas equipment blend in with the natural surroundings, while others involve cutting-edge monitoring and production technologies.

Biodiversity—The degree of variation of life forms within a given ecosystem, biome, or on an entire planet.

Blowout—An uncontrolled explosion of gas, oil, or other fluids from a drilling well. A blowout occurs when formation pressure exceeds the pressure applied to it by the column of drilling fluid and when blowout prevention equipment is absent or fails.

Blowout preventer (BOP)—One of several valves installed at the wellhead to prevent the escape of pressure either in the annular space between the casing and drill pipe or in open hole (i.e., hole with no drill pipe) during drilling or completion operations.

Bottomhole—The deepest portion of an oil well.

Brine—Water containing relatively large concentrations of dissolved salts, particularly sodium chloride. Brine has higher salt concentrations than ocean water.

Cement plug—A balanced plug of cement slurry placed in the wellbore. Cement plugs are used for a variety of applications including hydraulic isolation, provision of a secure platform, and in window-milling operations for sidetracking a new wellbore.

Chimneys—Natural geologic features which bear the properties of a chimney, formed through erosion over an extended period of time. Chimneys are particularly sensitive to surface disturbances such as seismic activity which could compromise their balance.

Christmas tree—The control valves, pressure gauges, and chokes assembled at the top of a well to control the flow of gas after the well has been completed.

Code of Federal Regulations (CFR)—A publication that codifies the general and permanent rules and regulations published in the Federal Register by the Executive Branch departments and agencies of the federal government, and which carry the force of law.

Completion—The activities and methods to prepare a well for production. Includes installation of equipment for production from an oil or gas well.

Conditions of approval (COAs)—Provisions or requirements under which a plan of operations is approved.

Containerized mud system—A fully containerized, closed-loop drilling fluid system that holds water, drilling mud and well cuttings. Inside a National Park Service unit, an operator must use a closed loop containerized mud system in place of an earthen reserve pit system.

Contaminating substance—Those substances, including but not limited to, saltwater or any other injurious or toxic chemical; waste oil or waste emulsified oil; basic sediment; mud with injurious or toxic substances produced or used in the drilling, development, production, transportation, or on-site storage, refining, and processing of oil and gas.

Critical habitat—The specific areas within the geographical area occupied by the species at the time it is listed in accordance with the provisions of Section 4 of the Endangered Species Act, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and specific areas outside the geographical area occupied by the species at the time it is listed...upon a determination by the Secretary that such areas are essential for the conservation of the species.

Cultural landscape—A geographic area, including both cultural and natural resources and the wildlife and domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

Cultural resource—Cultural resources include archeological sites; historic sites, buildings, and districts; cultural landscapes; and ethnographic resources.

Current Legal and Policy Requirements (CLPRs)—The current laws, regulations, orders, policies, directives, etc. that provide the legal restrictions and requirements that must be followed.

Deed—A conveyance of realty; a writing signed by a grantor, whereby title to realty is transferred from one to another.

Deed restrictions—Restrictions on deeded land that place limitations on the use of the property. Restrictive covenants are an example of deed restrictions. Deed restrictions are usually initiated by the developers - those who determined the purposed use of the land. Deed restrictions come with the property and usually cannot be changed or removed by subsequent owners.

Deferred property – Fee-simple private properties located within the legislative boundary of Big South Fork NRRRA.

Designation of operator—Appointment or assignment denoting person or entity responsible for an oil and gas operation.

Director—The Director of the National Park Service.

Directional drilling—Intentional deviation of a wellbore from the vertical (90 degrees). Although wellbores are normally drilled vertically, it is sometimes necessary or advantageous to drill at an angle from the vertical to avoid surface resources.

Drilling fluid (“mud”)—Circulating fluid, one function of which is to lift cuttings out of the wellbore and to the surface. While a mixture of clay, water, and other chemical additives is the most common drilling fluid, wells can also be drilled using oil-based muds, air, or water as the drilling fluid.

Dry hole—Any well incapable of producing oil or gas in commercial quantities. A dry hole may produce water, gas, or even oil, but not enough to justify production.

Effects—See “impacts.”

Endangered species—Any species which is in danger of extinction throughout all or a significant portion of its range.

Environmental assessment (EA)—A concise public document prepared to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. An EA includes a brief discussion of the need for a proposal, the alternatives considered, the environmental impacts of the proposed action and alternatives, and a list of agencies and individuals consulted.

Environmental impact statement (EIS)—A document prepared to analyze the impacts on the environment of a proposed project or action and released to the public for comment and review. EISs are prepared when there is the potential for major impacts on natural, cultural or socioeconomic resources. An EIS must meet the requirements of National Environmental Policy Act, Council on Environmental Quality, and the directives of the agency responsible for the proposed project or action.

Executive orders, memoranda, or proclamations—Regulations having the force of law issued by the President of the United States to the Executive branch of the federal government.

Federal Register—Daily publication of the National Archives and Records Administration that updates the Code of Federal Regulations, in which the public may review the regulations and legal notices issued by federal agencies.

Federally owned and controlled lands—Land that the United States possesses fee title through purchase, donation, public domain, or condemnation. It also includes land that the United States holds any interest, such as a lease, easement, rights-of-way, or cooperative agreement.

Federally owned and controlled waters—All surface waters in the boundaries of a National Park System unit without regard to whether the title to the submerged lands lies with the United States or another party.

Floodplain—The lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, and including at a minimum, that area subject to temporary inundation by a regulatory flood.

Flowlines and gathering lines—Lines or pipelines that transport produced fluids (e.g., oil, gas, brine) from the wellhead to storage, treatment or transportation facilities.

Gas—Any fluid, either combustible or noncombustible, which is produced in a natural state from the earth, and which maintains a gaseous or rarefied state at ordinary temperature and pressures (36 CFR § 9.31(m)).

Geophysical exploration—Geophysical exploration consists primarily of seismic operations and typically involves selective cutting of vegetation along source and receiver lines as needed, use of shotholes/explosives or seismic vibrators as a source of vibration, and recording the data generated from the soundwaves generated in the ground by the source.

Hydrocarbons—Organic compounds consisting of hydrogen and carbon, such as petroleum, crude oil or natural gas, whose densities, boiling points, and freezing points increase as their molecular weights increase. The smallest molecules of hydrocarbons are gaseous; the largest are solids. Petroleum is a mixture of many different hydrocarbons.

Impacts—The likely effects of an action upon specific natural, cultural, or socioeconomic resources. Impacts may be beneficial, or adverse and direct, indirect, and / or cumulative.

Impairment (NPS Policy)—As used in NPS Management Policies, "impairment" means an adverse impact on one or more park resources or values that interferes with the integrity of the park's resources or values, or the opportunities that otherwise would exist for the enjoyment of them, by the present or a future generation. Impairment may occur from visitor activities, NPS activities in managing a park, or activities undertaken by concessioners, contractors, and others operating in a park. As used here, the impairment of park resources and values has the same meaning as the phrase "derogation of the values and purposes for which these various areas have been established," as used in the General Authorities Act.

Impairment (Clean Water Act)—As used in conjunction with the Clean Water Act and associated state water quality programs, a water body is "impaired" if it does not meet one or more of the water quality standards established for it. This places the water body on the "impaired waters list", also known as the "303(d) list" for those pollutants that exceed the water quality standard.

Lease—A legal document executed between a landowner, as lessor, and a company or individual, as lessee, that grants the right to develop the premises for minerals or other products.

Lessor—One who leases real property. Typically, in park units the lessor is the mineral owner.

Management policies—The *National Park Service Management Policies* set the basic servicewide policy of the National Park Service. They provide the overall foundation, set the framework, and provide direction for management decisions within the National Park Service. The management of the National Park System and National Park Service programs is guided by the U.S. Constitution, public laws, proclamations, executive orders, rules and regulations, and directives of the Secretary of the Interior and the Assistant Secretary for Fish and Wildlife and Parks. Other laws, regulations, and policies related to the administration of federal programs, although not cited, may also apply.

Microhabitat—An extremely localized, small-scale environment, as a cliff ledge or rock overhang.

Mitigation—“Mitigation” as defined in the National Environmental Policy Act (40 CFR § 1508.20), includes: avoiding the impact altogether by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its Implementation; rectifying the impact of repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; compensating for the impact by replacing or providing substitute resources or environments.

National park system—The total sum of the land and water now and hereafter administered by the Secretary of the Interior through the National Park Service for park, monument, historic, parkway, recreational, or other purposes.

Natural floodplain values—Attributes of floodplains which contribute to ecosystem quality, including soils, vegetation, wildlife habitat, dissipation of flood energy, sedimentation processes, ground water (including riparian ground water) recharge, etc.

Natural gas—Highly compressible, highly expandable mixture of hydrocarbons having a low specific gravity and occurring naturally in a gaseous form. Besides hydrocarbon gases, natural gas may contain appreciable quantities of nitrogen, helium, carbon dioxide, and contaminants.

No-action alternative—An alternative that maintains established trends or management direction. For an oil and gas operation, it typically means that the action as proposed would not occur or current management would continue.

No surface use stipulation—Access across the surface or use of the surface for nonfederal oil and gas operations would be limited or not permitted in areas with this stipulation, unless otherwise authorized in an approved plan of operations.

Nonfederal oil and gas rights—Rights to oil and gas not owned by the United States where access is on, across, or through federally owned or controlled lands or waters.

Oil—Any viscous, combustible liquid hydrocarbon or solid hydrocarbon substance easily liquefiable on warming, which occurs naturally in the earth, including drip gasoline or other natural condensates recovered from gas without resort to manufacturing processes.

Operations (oil and gas)—“All functions, work and activities within a unit in connection with exploration for and development of oil and gas resources.” (36 CFR § 9.31(c)). Operations include, but are not limited to: reconnaissance to gather natural and cultural resources information; line-of-sight surveying and staking; geophysical exploration; exploratory drilling; production, gathering, storage, processing, and transport of petroleum products; inspection, monitoring, and maintenance of equipment; well “work-over” activity; construction, maintenance, and use of pipelines; well plugging and

abandonment; reclamation of the surface; and construction or use of roads, or other means of access or transportation, on, across, or through federally owned or controlled lands or waters.

Operator—Person(s) who may have rights to explore and develop non-federally-owned oil and gas in National Park Service units, including: owners: individuals, corporations, local and state governments, and Indian tribes (when the tribe owns the oil and gas in fee); lessees, such as individuals or corporations that lease oil and gas from the owner; and contractors, which are individuals or corporations under contract with the owner, lessee, or operator.

Organic Act—The law that established the National Park Service in 1916.

Permeability—The capacity to transmit fluids or gases through soil or rock materials; the degree of permeability depends upon the size and shape of the pore spaces and interconnections, and the extent of the interconnections.

Physiographic province—A geographic region with a specific geomorphology and often specific subsurface rock type or structural elements.

Plan of operations—Information submitted by an operator describing how proposed oil and gas operations would be conducted in a unit of the National Park System pursuant to the National Park Service's Nonfederal Oil and Gas Rights Regulations, 36 CFR 9B, and containing information requirements pertinent to the type of operations being proposed (36 CFR § 9.36(a) through (d)).

Play—An area in which hydrocarbon accumulations or prospects of a given type occur.

Plugging—Permanent closing of a well by removing the completion equipment; pumping cement across producing zones, placing cement plugs at various depths to protect freshwater zones, setting a plug at the surface to cap the well, and removing wellhead equipment.

Practicable—Capable of being done within existing constraints. The test of what is practicable depends upon the situation and includes consideration of the pertinent factors such as environment, cost, or technology.

Production—Phase of mineral extraction where minerals are made available for treatment and use.

Programmatic—Following a plan, policy, or program.

Public law—A law or statute of the United States.

Reasonably foreseeable development (RFD)—An estimate of the undiscovered hydrocarbon resources in an area and a projection of the type and extent of new operations that could occur to develop these resources.

Reclamation—The process of returning disturbed land to a condition that will be approximately equivalent to the pre-disturbance condition terms of sustained support of functional physical processes, biological productivity, biological organisms, and land uses.

Recovery plan—Plan required for each listed threatened/endangered species and generated by a task force under the leadership of the U.S. Fish and Wildlife Service. The plan describes the specific management actions necessary to restore the threatened or endangered species to recovery status,

including the estimated cost and time involved. The U.S. Fish and Wildlife Service coordinator oversees implementation of the plan.

Regional Director—Chief decision-maker in each of the seven regions of the National Park Service.

Regulations—Rules or orders prescribed by federal agencies to regulate conduct, and published in the CFR.

Regulatory floodplain—Specific floodplain which is subject to regulation by Executive Order 11988, “Floodplain Management,” and the National Park Service’s Floodplain Management Guideline (#93-4). For Class I Actions, the Base Floodplain (100-year) is the regulatory floodplain; for Class II Actions, the 500-year return period floodplain is the regulatory floodplain; for Class III Actions, the Extreme floodplain is the regulatory floodplain.

Revegetation—Reestablishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance, such as seedbed preparation, reseeding, and mulching.

Scoping—Scoping is done during the initial phase of project planning to seek input from a variety of sources. This input is used to identify issues, areas requiring additional study, alternative methods and locations, and topics to be analyzed in the National Environmental Policy Act document. Scoping is done internally with National Park Service staff and externally with the interested public, other agencies, and stakeholders.

Section 106—Section 106 of the National Historic Preservation Act of 1966 requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by the Advisory Council on Historic Preservation.

Seismic surveying (see geophysical exploration)—Reflection seismology (or seismic reflection) is a method of exploration geophysics that uses the principles of seismology to estimate the properties of the Earth’s subsurface from reflected seismic waves. The method requires a controlled seismic source of energy, such as dynamite/Tovex, a specialized air gun or a seismic vibrator. By noting the time it takes for a reflection to arrive at a receiver, it is possible to estimate the depth of the feature that generated the reflection.

Setback—A designated distance which is established to protect a sensitive feature or artifact from disturbance.

Shut-in well—An oil and gas well in which the inlet and outlet valves have been shut off so that it is capable of production but is temporarily not producing.

Split estate—Situation where the mineral estate is owned or controlled by a different party than the owner of the land surface in the same area.

Taking—In the United States, according to the Fifth Amendment of the Constitution, taking of private real or personal property for public use by the government.

Threatened species—Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Unit agreement—An agreement combining leased tracts on a fieldwide or reservoir wide scale so that many tracts may be treated as one to facilitate operations such as enhanced recovery projects.

United States Code (USC)—The systematic collection of the existing laws of the United States, organized under 50 separate titles. The citation 16 USC refers to section 1 of title 16.

Vertical drilling—Drilling of a well vertically (90 degrees) to reach a target zone straight underneath the surface location.

Viewshed—An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point.

Well—A producing well with oil as its primary commercial product. Oil wells almost always produce some gas and frequently produce water. Most oil wells eventually produce mostly gas or water.

Wellbore—The wellbore itself, including the openhole or uncased portion of the well.

Well types at Big South Fork NRR—

- Unknown: wells for which the NPS does not have sufficient information to verify the location or status
- Actively producing wells: wells that are mechanically capable of being produced and have documented production in the past 12 months
- Inactive wells: wells that have no documented production in the past 12 months
- Plugged and abandoned wells: wells that have been permanently closed by placement of cement plugs
- Orphaned wells: wells that do not have a responsible party

Wetlands—Lands that are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: 1) at least periodically, the land supports predominantly hydrophytes; 2) the substrate is predominantly undrained hydric soil; and 3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year. (Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. 1979).

Wild and Scenic River—A river designated under the National Wild and Scenic Rivers Act (Public Law 90-542; 16 USC. 1271 et seq.) as having outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. Rivers may be designated by Congress or, if certain requirements are met, the Secretary of the Interior. Each river is administered by either a federal or state agency. Designated segments need not include the entire river and may include tributaries.

Windows—Natural geologic features which bear the properties of a hole through rock resembling a window, formed through erosion over an extended period of time. Windows are particularly sensitive to surface disturbances such as seismic activity which could compromise their natural form.

Workover—Work performed on an existing well to improve, maintain, or restore a well's production. A workover is done using a truck-mounted rig and typically lasts one to several weeks.

Workover rig—Specific motorized equipment required to perform a workover operation.

INDEX

- air quality, 25, 26, 121, 125, 367
- alternatives, 1, 2, 21, 22, 25, 27, 28, 29, 43, 47, 52
- alternatives, 53, 54, 55, 56, 57, 66, 67, 83, 85, 93, 96, 97, 105, 120, 122, 124, 157, 225, 226, 228, 240, 241, 242, 243, 246, 249, 252, 253, 258, 260, 261, 262, 263, 267, 268, 269, 270, 271, 277, 279, 280, 282, 287, 289, 290, 291, 293, 294, 299, 301, 302, 303, 305, 307, 313, 315, 316, 317, 319, 321, 326, 328, 329, 330, 334, 337, 340, 342, 343, 344, 349, 354, 357, 358, 359, 360, 362, 369, 371, 372, 373, 375, 378, 380, 381, 382, 383, 384, 385, 386, 387
- cemeteries, 64, 86, 94, 100, 208, 236, 343, 347, 357, 358, 359, 360, 371
- climate change (global warming), 28, 32, 51, 176
- consultation, 22, 24, 52, 80, 82, 209, 304, 306, 308, 312, 313, 318, 320, 345, 347, 350, 351, 352, 353, 354, 355, 356, 358, 359, 360, 385, 386, 387
- contamination, 22, 23, 24, 65, 74, 78, 103, 105, 106, 108, 155, 237, 241, 243, 244, 245, 253, 254, 255, 256, 265, 274, 275, 285, 297, 309, 323, 337, 366, 367, 382
- cost, 57, 65, 70, 74, 84, 96, 103, 120, 221, 243, 380, 386
- critical habitat, 2, 14, 49, 80, 82, 106, 181, 189, 190, 304, 305
- cultural landscape, 24, 45, 64, 86, 100, 106, 117, 125, 201, 208, 209, 232, 235, 237, 256, 297, 346, 347, 348, 349, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 364, 372
- cultural resources, 3, 28, 29, 35, 36, 37, 39, 43, 47, 74, 82, 106, 117, 124, 205, 232, 345, 346, 347, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 383, 387, 397
- current legal and policy requirement (CLPR), 54, 66, 97, 105, 106, 240
- deed restriction, 21, 60, 68, 69, 72, 83, 94, 95, 98, 100, 104, 240, 241, 264, 272, 307, 320, 335, 336, 343, 350, 363, 378
- directional drilling, 21, 26, 59, 67, 68, 69, 72, 93, 105, 116, 117, 120, 125, 238, 250, 339, 343, 344, 360, 376, 378
- enabling legislation, 2, 3, 9, 13, 16, 28, 29, 38, 44, 68, 120, 121, 122, 236
- endangered species, 14, 34, 39, 125, 231, 235, 304, 305, 306, 309, 311, 318, 336, 338, 406, 409
- enforcement, 27, 44, 54, 67, 71, 72, 93, 94, 97, 101, 102, 105, 106, 107, 111, 120, 123, 124, 220, 221, 222, 223, 242, 248, 249, 250, 259, 260, 261, 262, 268, 270, 278, 279, 280, 281, 288, 289, 291, 300, 301, 303, 314, 315, 317, 327, 328, 330, 331, 340, 342, 344, 345, 356, 360, 379, 381, 382
- floodplain, 23, 36, 37, 110, 157, 160, 162, 171, 172, 182, 188, 195, 196, 262, 263, 264, 265, 266, 268, 270, 402
- geologic resources, 35, 241, 243, 245, 246, 247, 248, 249, 250

geophysical exploration, 55, 57, 66, 67, 68, 71, 72, 85, 86, 93, 94, 99, 100, 109, 240, 241, 242, 243, 246, 247, 249, 252, 258, 260, 263, 267, 268, 271, 277, 279, 282, 286, 287, 289, 293, 298, 299, 301, 305, 306, 312, 315, 319, 320, 326, 328, 331, 332, 334, 335, 336, 339, 340, 342, 343, 344, 349, 353, 356, 357, 358, 360, 362, 363, 368, 369, 370, 371, 373, 375, 377, 378, 380, 382

gorge, 3, 9, 13, 15, 16, 23, 43, 46, 60, 62, 63, 68, 72, 74, 83, 94, 95, 98, 103, 104, 126, 157, 188, 200, 201, 212, 213, 214, 237, 239, 240, 241, 251, 256, 260, 264, 269, 272, 279, 287, 299, 307, 310, 313, 320, 323, 326, 335, 336, 338, 339, 350, 357, 358, 360, 363, 378

health and safety, 1, 2, 25, 30, 34, 35, 36, 37, 52, 61, 64, 68, 71, 74, 77, 78, 83, 93, 101, 103, 106, 118, 120, 123, 124, 219, 233, 361, 363, 365, 366, 367, 368, 369, 370, 372, 373

impacts, 1, 2, 3, 21, 23, 24, 25, 26, 27, 28, 29, 31, 32, 43, 44, 46, 47, 50, 51, 53, 54, 55, 56, 60, 62, 64, 66, 67, 68, 73, 74, 75, 76, 80, 82, 85, 86, 96, 98, 103, 105, 106, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 121, 123, 124, 135, 149, 151, 157, 160, 179, 181, 183, 184, 185, 186, 187, 200, 218

impacts, 225, 226, 227, 228, 233, 236, 237, 238, 239, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 333, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 366, 367, 368, 369, 370,

371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 404

impairment, 29, 30, 31, 96, 149, 226, 382, 383

mineral rights, 14, 15, 21, 31, 33, 44, 45, 47, 65, 69, 72, 83, 94, 95, 120, 121, 122, 123, 240, 241

mitigation, 24, 26, 27, 51, 52, 55, 60, 66, 67, 80, 82, 85, 93, 99, 105, 106, 110, 116, 117, 124, 125, 242, 244, 245, 248, 249, 251, 252, 253, 254, 255, 258, 259, 261, 262, 263, 264, 265, 266, 267, 269, 270, 271, 272, 273, 274, 277, 278, 280, 281, 282, 283, 284, 286, 287, 288, 289, 290, 291, 293, 294, 295, 296, 299, 300, 301, 302, 303, 305, 306, 307, 308, 309, 311, 312, 313, 314, 316, 317, 320, 321, 322, 324, 325, 326, 327, 328, 329, 330, 335, 336, 337, 338, 341, 342, 349, 350, 351, 352, 354, 355, 356, 357, 358, 359, 361, 362, 363, 364, 365, 366, 367, 368, 373, 375, 376, 379, 381, 382, 383, 384, 385

new management framework, 1, 53, 54, 55, 65, 66, 73, 74, 83, 94, 102, 103, 107, 120, 123, 124, 248, 249, 258, 259, 261, 262, 267, 268, 269, 270, 277, 278, 279, 280, 288, 290, 291, 300, 301, 303, 313, 314, 316, 317, 327, 328, 329, 330, 341, 342, 344, 345, 356, 370, 372, 379, 381

noise, 24, 25, 26, 35, 37, 46, 68, 113, 114, 115, 116, 118, 198, 199, 200, 201, 293, 295, 296, 298, 299, 300, 301, 302, 303, 306, 308, 312, 313, 314, 315, 317, 319, 320, 321, 322, 325, 326, 327, 328, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 349, 350, 352, 354, 355, 356, 358, 359, 363, 364, 366, 367, 368, 369, 370, 372, 373, 375, 381, 384, 396, 398, 401

non-federal oil and gas (9B) regulations, 15, 21, 30, 31, 34, 43, 44, 51, 52, 54, 59, 66, 67, 68, 69, 71, 72, 73, 78, 79, 83, 85, 93, 94, 97, 101, 102, 105, 108, 120, 121, 122, 123, 221, 229, 230, 231, 232, 233, 238, 240, 241, 246, 247, 249, 252, 257, 258, 260, 266, 267, 268, 276, 277, 279, 286, 287, 289, 298, 299, 301, 306, 311, 312, 313, 315, 320, 325, 326, 328, 335, 336, 338, 339, 340, 341, 342, 344, 350, 353, 354, 357, 363, 364, 367, 368, 369, 371, 372, 375, 376, 377, 378, 380, 381, 386

operating stipulations, 27, 51, 52, 54, 60, 66, 67, 68, 72, 93, 104, 244, 295, 361, 363, 365, 366

plan of operations, 15, 26, 33, 52, 55, 60, 67, 68, 71, 72, 73, 85, 86, 93, 94, 99, 102, 104, 105, 240, 241, 243, 244, 250, 253, 260, 263, 268, 269, 271, 273, 279, 282, 289, 290, 293, 294, 301, 302, 306, 307, 315, 320, 321, 328, 329, 342, 343, 357, 358, 363, 371, 375, 376, 378, 380, 383, 386

plugging, 1, 3, 16, 38, 39, 43, 46, 53, 54, 55, 56, 60, 65, 66, 68, 69, 70, 71, 73, 74, 75, 76, 77, 78, 79, 80, 82, 83, 85, 86, 94, 97, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 123, 124, 160, 221, 227, 229, 230, 231, 232, 233, 238, 241, 245, 246, 247, 248, 249, 250, 254, 255, 257, 258, 259, 260, 261, 262, 264, 265, 266, 267, 268, 269, 270, 273, 274, 275, 276, 277, 278, 279, 280, 281, 283, 284, 285, 286, 287, 288, 289, 290, 291, 296, 299, 300, 301, 302, 303, 308, 309, 312, 313, 314, 315, 316, 317, 322, 323, 325, 326, 327, 328, 329, 330, 331, 337, 338, 339, 340, 341, 342, 344, 345, 351, 352, 353, 355, 356, 357, 359, 360, 366, 367, 368, 369, 370, 371, 372, 375, 376, 377, 378, 379, 380, 381, 382, 386, 404

preferred alternative, 30, 54, 124, 125

purpose and need, 1, 2

reasonably foreseeable development (RFD) scenario, 26, 48, 53, 55, 57, 58, 59, 60, 67, 71, 83, 93, 251, 263, 271, 281, 292, 304, 318, 337, 339, 350, 354, 361, 363, 374, 383

reclamation, 1, 2, 21, 23, 24, 33, 39, 43, 49, 53, 54, 55, 56, 60, 65, 66, 68, 69, 70, 71, 73, 74, 75, 76, 78, 79, 80, 82, 83, 85, 86, 94, 97, 102, 103, 104, 105, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 123, 124, 160, 221, 229, 230, 231, 232, 233, 238, 239, 241, 243, 245, 246, 247, 248, 249, 250, 254, 255, 257, 258, 259, 260, 261, 262, 264, 265, 266, 267, 268, 269, 270, 272, 273, 274, 275, 276, 277, 278, 279, 280, 283, 284, 285, 286, 287, 288, 289, 290, 291, 296, 298, 299, 300, 301, 302, 303, 306, 308, 309, 311, 312, 313, 314, 315, 316, 317, 320, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 337, 338, 339, 340, 341, 342, 344, 345, 350, 351, 352, 353, 355, 356, 357, 359, 360, 366, 367, 368, 369, 370, 371, 372, 373, 375, 376, 377, 378, 379, 380, 381, 382, 384, 386, 395, 404

scoping, 21, 22, 27, 60, 65, 104, 120, 121, 122, 306, 385, 386, 403

Section 106, 82, 106, 209, 345, 346, 387, 403

socioeconomics, 26, 27, 30

soundscape, 37, 116, 198, 199, 201, 308, 322, 331, 333, 334, 335, 337, 338, 339, 340, 341, 342, 343, 344, 401

special management area (SMA), 25, 45, 52, 54, 60, 61, 62, 63, 64, 65, 85, 86, 87, 89, 91, 93, 94, 95, 97, 99, 100, 104, 105, 106, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 123, 124, 126, 240, 241, 249, 250, 260, 261, 262, 268, 269, 270, 279, 280, 289, 290, 291, 301, 302, 303, 315, 316, 328, 329, 330, 342, 343, 344, 345, 357, 358, 359, 361, 371, 372, 380, 381, 383, 386

species of special concern, 23, 24, 85, 106, 115, 125, 191, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 371

spills, 22, 23, 24, 26, 27, 33, 43, 47, 109, 111, 112, 113, 114, 115, 123, 155, 229, 230, 231, 232, 233, 237, 243, 244, 246, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 264, 265, 269, 271, 272, 273, 274, 275, 277, 278, 279, 280, 283, 286, 288, 290, 291, 295, 299, 300, 302, 307, 312, 313, 316, 320, 325, 326, 351, 363, 364, 365, 367, 372, 375, 376, 379, 382, 383, 384, 386

staffing, 54, 67, 71, 84, 93, 95, 101, 104, 220, 222, 223, 287, 320, 335, 380, 381

trails, 39, 41, 48, 57, 64, 79, 85, 94, 99, 106, 121, 212, 213, 218, 220, 222, 229, 230, 231, 232, 233, 237, 242, 256, 257, 266, 275, 285, 297, 310, 324, 333, 335, 337, 340, 343, 352, 365, 367, 371, 372, 376, 392

U.S. Fish and Wildlife Service (USFWS), 22, 24, 34, 49, 50, 51, 80, 82, 157, 158, 159, 160, 161, 179, 181, 182, 183, 189, 190, 219, 231, 233, 235, 304, 306, 307, 309, 311, 313, 316, 387, 388, 397, 402, 405, 408, 409

U.S. Forest Service (USFS), 31, 48, 49, 388, 398, 409

vegetation, 2, 9, 22, 23, 24, 29, 35, 36, 39, 44, 45, 60, 61, 63, 75, 78, 79, 106, 111, 112, 113, 114, 115, 116, 125, 155, 157, 159, 160, 161, 162, 163, 165, 167, 171, 172, 173, 175, 176, 177, 179, 185, 187, 192, 200, 201, 215, 218, 219, 229, 230, 235, 237, 239, 240, 242, 243, 245, 246, 247, 248, 249, 250, 252, 254, 255, 256, 257, 264, 265, 271, 272, 274, 275, 276, 277, 278, 279, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 293, 294, 296, 297, 298, 299, 305, 306, 307, 309, 310, 311, 312, 313, 314, 315, 317, 319, 320, 321, 323, 324, 325, 326, 327, 328, 330, 332, 333, 334, 335, 336, 337, 338, 340, 341, 344, 352, 353, 356,

357, 360, 361, 364, 366, 367, 372, 383, 384, 395, 402

viewshed, 63, 86, 94, 100, 371

visitation, 61, 65, 86, 99, 100, 205, 210, 211, 215, 216, 217, 227, 233, 236, 362, 363, 371, 377

visitor experience, 30, 38, 62, 64, 65, 85, 198, 220, 238, 246, 257, 311, 324, 331, 350, 351, 361, 362, 363, 364, 366, 369, 372, 373, 377, 384

water quality, 13, 14, 22, 23, 25, 43, 44, 46, 47, 49, 50, 68, 121, 139, 147, 148, 149, 150, 155, 157, 184, 185, 186, 189, 229, 239, 251, 252, 253, 254, 256, 259, 262, 265, 273, 275, 285, 293, 294, 297, 306, 307, 310, 320, 321, 323, 387

wetlands, 23, 35, 36, 37, 78, 111, 135, 141, 143, 145, 153, 157, 158, 159, 160, 161, 191, 229, 237, 243, 244, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 293, 294, 306, 307, 317, 320, 321, 330, 382, 384, 397, 408