

REFERENCES

- Acheson, A. 1989. Bob Marshall Wilderness Air Quality Related Values Management Plan. USDA Forest Service, Region 1, Missoula, MT.
- Adams, D.B. and J.T. Turk. 1983. Sensitivity To Acidification Of Lakes In The Flat Tops Wilderness Area, Colorado. *Water Resources Research* 9(2), 346-350.
- Baird, S.F., D. Buso, and J. Hornbeck. 1987. Acid pulses from snowmelt at acidic Cone Pond, New Hampshire. *Water, Air, and Soil Pollution* 34, 325-338.
- Baldigo, B.P. and J.R. Baker, undated. Monitoring approaches for assessing quality of high altitude lakes: Colorado Flat Tops Wilderness Area. U.S. Environmental Protection Agency, Office of Research and Development, Las Vegas, NV. Contract No. 68-03-3050, Project No. 32.04 by Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV.
- Baldigo, B.P. undated. Macroinvertebrate and zooplankton data from the Mt. Zirkel Wilderness area lakes survey. U.S. Environmental Protection Agency, Office of Research and Development, Las Vegas, NV. Contract No. 68-03-3050, Job Order 3204 by Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV.
- Berglund, D.L. and S. Eversman. 1988. Flow cytometric measurement of pollutant stresses on algal cells. *Cytometry* 9, 150-155
- Biological Methods Panel Committee on Oceanography, Division of Earth Sciences, National Research Council. 1969. Recommended procedures for measuring the productivity of plankton standing stock and related oceanic properties. Natl. Academy Sciences, Washington, D.C.
- Brown, P.J. and G. Haas. 1980. Relationship between the resource attributes and psychological out comes perceived by wilderness recreationists. Trial Report 16-764-CA, 16-646-CA, 16-740-CA submitted to B.L. Driver, Recreation Research Project Leader, USFS Rocky Mtn. Forest and Range Exp. Sta., Ft. Collins, CO.
- Brown, P.J., G. Haas, M. Marfredo. 1977. Identifying resource attributes providing opportunities for dispersed recreation. Final report 16-631-CA, 16-661-CA. Submitted to Richard S. Driscoll, USDA/USFS, Region 2, Denver, CO.
- Bunin, J. Sensitivities of Colorado and Wyoming Wilderness Area Vascular Plants to Sulphur Dioxide, Nitrogen Dioxide, and Ozone: An Overview. Prepared for USDA Forest Service, Region 2, Air, Aviation and Fire Management, Lakewood, CO. December 6, 1990.

- Bureau of Land Management (BLM). 2008. Proposed Oil Shale and Tar Sands Resource Management Plan Amendments to Address Land Use Allocations in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement. U.S. Department of Interior, Bureau of Land Management, Washington, D.C. 20240. September 2008.
- Cadle, S.H., J. Dasch and N. Grossnickle. 1984. Retention and release of chemical species by a northern Michigan snowpack. *Water, Air, and Soil Pollution* 22, 303-319.
- Cahill, T.A., R.A. Eldred and P.J. Feeney. 1985. Report prepared by the National Park Service Particulate Network - Particulate Monitoring and Data Analysis for the National Park Service, 1982-1985. Air Quality Group, University of California at Davis. 129 pp.
- Cahill, T.A., R. Eldred, D. Shadoan, P. Feeney, B. Kusko, and Y. Matsuda. 1984. Complete elemental analysis of aerosols: PIXE, FAST, LIPM, and MASS. *Nuclear Inst. and Methods in Physics Res.* B3, 291-295.
- Campbell, D.H., J.T. Turk, and N.E. Spahr. Undated draft. Response Of A Rocky Mountain Watershed To Changes In Atmospheric Deposition Of Sulfate.
- Caswell, Jim. 2008. Bureau of Land Management Press Release, Final Programmatic Environmental Impact Statement for Oil Shale and Tar Sands resources on lands administered by the BLM in Colorado, Utah, and Wyoming. U.S. Department of Interior, Bureau of Land Management, Washington, D.C. September 4, 2008.
- Clark, K.L. 1986a. Responses of spotted salamander, *Ambystoma maculatum*, populations in central Ontario to habitat acidity. *Can. Field-Nat.* 100, 463-469.
- Clark, K.L. 1986b. Distributions of anuran populations in central Ontario relative to habitat acidity. *Water Air Soil Pollut.* 30, 727-734.
- Colorado Climate Center. Average annual precipitation map, 1951-1980. Colorado State University, Fort Collins, CO.
- Colorado cooperative snow survey data. Annual data summary, water year 1991. Soil Conservation Service, U.S. Dept. of Agriculture.
- Colorado Department of Natural Resources (CDNR). 2005. Colorado Coal: energy security for the future. In: *Rock Talk*, published by Colorado Geological Survey. Volume 8, Number 2, Summer, 2005.
- Colorado Department of Public Health and Environment (CDPHE). 2005. Scenic and/or Important Views in Colorado. Published by Colorado Air Pollution Control

- Division, Denver, CO. Table available online at:
<http://www.colorado.gov/airquality/permits.aspx>.
- Confer, J.L., T. Kaaret and G. Likens. 1983. Zooplankton diversity and biomass in recently acidified lakes. *Can. J. Fish. Aquat. Sci.* 40, 36-42.
- Cosby, B.J., G. Hornberger, E. Rastetter, J. Galloway and R. Wright. 1986. Estimating catchment water quality response to acid deposition using models of soil ion exchange processes. *Geoderma* 38, 77-95.
- Davis, C.C. 1955. *The marine and fresh water plankton*. Mich. St. Univ. Press.
- Eversman, S. 1978. Effects of low level SO₂ on *Usnea hirta* and *Parmelia chlorochroa*. *The Bryologist* 81(3), 368-377.
- Eversman, S. 1988. Asst. Prof. Biology, Montana State University. Personal Communication.
- Eversman, S. and L. Sigal. 1984. Ultrastructural effects of peroxyacetyl nitrate (PAN) on two lichen species: the *Bryologist* 87(2), 112-118.
- Fernandez, I.J. 1985. Acid deposition and forest soils: potential impacts and sensitivity. From *Acid Deposition 1985*; Adams, D.D. and W. Page, eds. Plenum Publishing Corp. 223-239.
- Ferry, B.W., M. Buddely and D. Hawksworth, eds., 1973. *Air Pollution and Lichens*. Univ. of Toronto Press.
- Fields, R.D. and L. St Clair. 1984. A comparison of methods for evaluating SO₂ impacts on selected lichen species: *Parmelia chlorochroa*, *Collema polycarpon* and *Lecanora muralis*. *The Bryologist* 87(4), 297-301
- Fox, Douglas G., Dennis Haddow, and Dennis J. Murphy. 1981. Air quality, oil quality, oil shale, and wilderness - A workshop to identify and protect air quality related values of the Flat Tops. USDA Forest Service Technical Report RM-91.
- Fox, D.G., J. Bernabo and B. Hood. 1987. Guidelines for measuring the physical, chemical, and biological condition of wilderness ecosystems. General tech. rep. RM-146, USDA/USFS Rocky Mtn. Forest and Range Exp. Sta., Ft. Collins, CO.
- Freda, J. and W.A. Dunson. 1986. Effects of low pH and other chemical variables on the local distribution of amphibians. *Copeia* 1986, 454-466.
- Galloway, J., G. Hendrey, C. Schofield, N. Peters and A. Johannes. 1987. Processes and causes of lake acidification during spring snowmelt in the west-central Adirondack mountains, New York. *Can. J. Fish. Aquat. Sci.* 44, 1595-1602.

- Gascon, C. and D. Planas. 1986. Spring pond water chemistry and the reproduction of the wood frog, *Rana Sylvatica*. *Can. J. Zool.* 64, 543-550.
- Geiser, L.H., C.C. Derr, and K.L. Dillman. Air Quality Monitoring on the Tongass National Forest, Methods and Baselines Using Lichens. USDA, Forest Service, Alaska Region, Tongass National Forest, Petersburg, AK. Report No. R10-TB-46, September, 1994.
- Gibson, J.H. 1990. Colorado-Wyoming wilderness areas wet chemical deposition estimates. Unpublished paper. National Atmospheric Deposition Program, Natural Resource Ecology Laboratory, Colorado State University.
- Gosner, K.L. and I.H. Black. 1957. The effects of acidity on the development and hatching of New Jersey frogs. *Ecology* 38, 256-262.
- Hale, M.E. 1979. *How to Know the Lichens*, 2nd ed. Wm. C. Brown Company Publishers, Dubuque, Iowa, 246 pp.
- Hale, M.E. 1982. Lichens as bioindicators and monitors of air pollution in the Flat Tops Wilderness area, Colorado. Final Report; Forest Service Contract No. OM RFP R2-81-SP35. 22 November 1982.
- Hammerson, G.A. 1999. *Amphibians and reptiles in Colorado*, 2nd edition. University Press of Colorado, Niwot, CO.
- Harte, J. and E. Hoffman. 1989. Possible effects of acidic deposition on Rocky Mountain population of the Tiger Salamander, *Ambystoma Tigrinum*. *Conserv. Biol.* 3(2), 149-158.
- Havens, K. and J. DeCosta. 1985. The effect of acidification in enclosures on the biomass and population size structure of *Bosmina longirostris*. *Hydrobiologia* 122, 153-158.
- Hawksworth, D.L. and F. Rose. 1976. Lichens as pollution monitors. *Inst. Biol. Stud.*, in *Biology* No. 66, Edward Arnold Ltd., London.
- Heuer, K., Tonnessen, K.A., Ingersoll, G.P. 2000. Comparison of precipitation chemistry in the Central Rocky Mountains, Colorado, USA, *Atmospheric Environment* 34, 1713-1722.
- Hogan, T. 1992. A floristic survey of the Eagles Nest Wilderness Area in the southern Gore Range of central Colorado. *Natural History of Colorado*, No. 12. University of Colorado Museum, Boulder, Colorado. ISSN 0890-6882.

- Interagency Monitoring of Protected Visual Environments (IMPROVE). 2008. Summary Data: Means for Best, Middle and Worst 20% Visibility Days. Online. December 17, 2008 (http://vista.cira.colostate.edu/improve/Data/IMPROVE/summary_data.htm).
- Ingersoll, G.P., J.T. Turk, M.A. Mast, D.W. Clow, D.H. Campbell, Z.C. Bailey. 2001. Rocky Mountain snowpack chemistry network: history, methods, and the importance of monitoring mountain ecosystems. USGS Open-File Report 01-466, 14 p.
- Ingersoll, G.P., M.A. Mast, D.H. Campbell, D.W. Clow, L. Nanus, J.T. Turk. 2008. Trends in snowpack chemistry and comparison to National Atmospheric Deposition Program results for the Rocky Mountains, US, 1993-2004. *Atmospheric Environment* 42, 6098-6113.
- Jackson, L.L., L. Geiser, T. Blett, C. Gries, and D. Haddow. Biogeochemistry of Lichens and Mosses in and near Mt. Zirkel Wilderness, Routt National Forest, Colorado: Influences of Coal Fired Power Plant Emissions. USDI, U.S. Geological Survey, Denver, CO. Open-File Report 96-295, 1996.
- Karns, D.R. 1984. Toxic bog water in northern Minnesota peatlands: Ecological and evolutionary consequences for breeding amphibians. Ph.D. Dissertation, Univ. Minnesota. 164 pp.
- Keller, W. and J. Pitblado. 1984. Crustacean plankton in northeastern Ontario lakes subjected to acidic deposition. *Water, Air, and Soil Pollution* 23, 271-291.
- Lawrey, J.D. 1984. *Biology of lichenized fungi*. Praeger Publishers, NY. Lawrey, J.D. and M. Hale, Jr., 1988. Lichen evidence for changes in atmospheric deposition in Shenandoah Natl. Park, Va. *The Bryologist* 91(1), 21-23.
- Lawrey, J.D. and M. Hale, Jr., 1988. Lichen evidence for changes in atmospheric deposition in Shenandoah National Park Va. *The Bryologist* 91(1), 21-23.
- Lafreniere, M.J., and M.J. Sharp. 2005. A comparison of solute fluxes and sources from glacial and non-glacial catchments over contrasting melt season. *Hydrological Processes* 19, 2991-3012.
- Leuven, R.S.E.W., C. den Hartog, M.M.C. Christiaans, and W.H.C. Heiligers. 1986. Effects of water acidification on the distribution pattern and the reproductive success of amphibians. *Experientia* 42, 495-503.
- Malley, D.F. and P. Chang. 1986. Increase in the abundance of cladocera at pH 5.1 in experimentally acidified lake 223, experimental lakes area, Ontario. *Water, Air, and Soil Pollution* 30,629-638.

- Malm, William. 1999. Introduction to Visibility. Air Resource Division, National Park Service, Denver, CO. Online at:
http://vista.cira.colostate.edu/improve/Education/intro_to_visibility.pdf
- Mast, Alisa. 2008. "Ned Wilson Lake Study." E-mail to Andrea Holland-Sears, September 3, 2008.
- Mast, M. Alisa, D.H. Campbell, and G.P. Ingersoll. 2005. Effects of emission reductions at the Hayden powerplant on precipitation, snowpack, and surface-water chemistry in the Mount Zirkel Wilderness Area, Colorado, 1995-2003: U.S. Geological Survey Scientific Investigations Report 2005-5167, 32 p.
- McKnight, D., M. Brenner, R. Smith and J. Baron. 1986. Seasonal changes in phytoplankton populations and related chemical and physical characteristics in lakes in Loch Vale, Rocky Mtn. Natl. Park, CO. USGS Water Res. Investigations Report 86-4101. 64 pp.
- Mcknight, D. et al. 1990 Phytoplankton Dynamics in Three Rocky Mountain Lakes, Colorado, USA. *Arctic and Alpine Research* 22(3), 264-274.
- Mills, K.H. and D. Schindler. 1986. Biological indicators of lake acidification. *Water, Air, and Soil Pollution* 30, 779-789.
- Nanus, L., D.H. Campbell, G.P. Ingersoll, D.W. Clow, M.A. Mast. 2003. Atmospheric deposition maps for the Rocky Mountains. *Atmospheric Environment* 37, 4881-4892.
- Nash III, T.H., C. Gries, M. Sanchez, W. Davis and J. Marsh. 1992. Flat Tops Wilderness area lichen survey, 1992. Final Report; Forest Service Contract No. RFQ-R2-15-92-09. 24 May 1993.
- Nash III, T.H., M. Boykin, et al. 1992. Floristic survey of the lichens of the Flat Tops Wilderness area, 1992. Final Report; Forest Service Contract No. 40-82D7-3-0189. 30 June 1993.
- Nash III, T.H. and V.W. Wirth (eds.). 1988. Lichens, Bryophytes and Air Quality. In: *Bibliotheca Lichenologica*, Band 30. J.Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung, Berlin, Germany, 297 pp.
- National Atmospheric Deposition Program. 1987. NADP Annual data summary, precipitation chemistry in the U.S., 1986. Natural Res. Ecol. Lab., Colorado State University, Ft. Collins, CO.
- Phillip, S.F., D. Wotton and D. McEachern. 1986. Snow chemistry in the Flin Flon area of Manitoba, 1981-1984. *Water, Air, and Soil Pollution* 30, 253-261.

- Pierce, Gordon. 2008. Air Emissions in Garfield County. "Smart Citizens" Series Presentation, Colorado Mountain College, Rifle Campus, Garfield County, CO. April 15, 2008.
- Porter, Ellen. 2003. Ozone Sensitive Plant Species on National Park Service and U.S. Fish and Wildlife Service Lands. Results of a June 24-25, 2003 Workshop, Baltimore, MD. Report available at: <http://www.nature.nps.gov/air/Pubs/pdf/BaltFinalReport1.pdf>.
- Price, E.E. and M. Seift. 1985. Inter- and intra- specific variability in the response of zooplankton to acid stress. *Can. J. Fish. Aquat. Sci.* 42, 1749-1754.
- Schindler, D.W. 1987. Detecting ecosystem responses to anthropogenic stress. *Can. J. Fish. Aquat. Sci.* 44(1), 6-25.
- Schindler, D.W. 1985. Long term ecosystem stress: the effects of years of experimental acidification on a small lake. *Science* 228, 1395-1401.
- Soholt, L.F, and S. Wiedenbaum. 1981. Oil Shale: Its Development and Potential for Air Quality Effects. U.S. Fish and Wildlife Service, Biological Services Program, National Power Development Group, FWS/OBS-81/34.
- Sommaruga-Wograt, S., Koinig, K.A., Schmidt, R., Sommaruga, R., Tessadri, R., and Psenner, R. 1997. Temperature effects on the acidity of remote alpine lakes. *Nature* 387, 65-67.
- Spaulding, S.A., J.V. Ward, and J. Baron. 1993. Winter Phytoplankton Dynamics in a Subalpine Lake, Colorado, USA. *Hydrobiologica* 129(2), 179-198.
- Sprules, W.G. 1975. Midsummer crustacean zooplankton communities in acid stressed lakes. *J. Fish, Res. Board. Can.* 32, 389-395.
- State of Colorado. 1989. Colorado Plant Species of Special Concern. May 1989. Division of Parks and Outdoor Recreation, Colorado Natural Areas.
- Stottlemyer, R. 1987. Snowpack ion accumulation and loss in a basin draining to Lake Superior. *Can. J. Fish. Aquat. Sci.* 44, 1812-1819.
- Thies, H., Ulrike, N., Mair, V., Tessadri, R., Tait, D., Thaler, B., and Psenner, R. 2007. Unexpected response of high alpine lake waters to climate warming. *Environmental Science & Technology* 41(21), 7424-7429.
- Turk, J.T. and D.H. Campbell. 1997. Are Aquatic Resources of the Mt. Zirkel Wilderness Area in Colorado Affected by Acid Deposition and What Will Emissions Reductions at the Local Power Plants Do? USDI, U.S. Geological Survey, Fact Sheet FS-043-97.

- Turk, John T. 2001. Field Guide for Surface Water Sample and Data Collection. Prepared for USDA Forest Service, Air Program. Available online at: <http://www.wilderness.net/toolboxes/documents/air/Field%20Guide%20for%20Surface%20Water%20Sampling.pdf>
- USDA, Forest Service. 1993a. Lichens as Bioindicators of Air Quality. Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO. General Technical Report RM-224. 131 pp.
- USDA, Forest Service. 1993b. Managing Air Resources in the Rocky Mountain Region. U.S. Forest Service, Rocky Mountain Region, Denver, CO.
- USDA, Forest Service. 1994. A Desk Reference for NEPA Air Quality Analyses. Prepared for the Forest Service by CH2MHill, April, 1995.
- USDA, Forest Service. 2008. Environmental Assessment: Plains Exploration and Production Company, Hells Gulch North, Phase 2. Rifle Ranger District, White River National Forest, Rifle, Colorado. May, 2008.
- USEPA. 1993. Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 1 Report: Interim Recommendation for Modeling Long Range Transport and Impacts on Regional Visibility. U.S. Environmental Protection Agency, Research Triangle Park, NC. Report No. EPA-454/R-93-015. April, 1993.
- USDI, Fish and Wildlife Service. 1989. Acid Precipitation Studies In Colorado And Wyoming: Interim Report Of Surveys Of Montane Amphibians And Water Chemistry. Biological Report 80(40:26) 2 pp.
- Vanderhorst, J.P. 1992. Floristic Survey of the Flat Tops, White River Plateau and Vicinity, Colorado: Colorado Plant Species of Special Concern. Final Report to the Nature Conservancy, Rocky Mountain Herbarium, University of Wyoming, Laramie, WY.
- Vanderhorst, J.P. 1993. Flora of the Flat Tops, White River Plateau and Vicinity in Northwestern Colorado. A thesis submitted to the Department of Botany and the Graduate School of the University of Wyoming in partial fulfillment of requirements for the Degree of Master of Science in Botany, Laramie, WY, May, 1993.
- Walsh, R.G., R. Gillman and J. Loomis. 1981. Wilderness resource economics: recreation use and preservation values. (Draft) Dept. Econ., Colo. St. Univ., Ft. Collins, CO.
- Wetzel, R.G. and G.E.Likens. 1979. Limnological Analyses. W.B.Saunders, Philadelphia, PA.

- Williams, M.W., M. Knauf, N. Caine, F. Liu, P.L. Verplanck. 2006. Geochemistry and source waters of rock glacier outflow, Colorado Front Range. *Permafrost and Periglacial Processes* 17, 13-33.
- Wolfe, A.P., Van Gorp, A.C., Baron, J.S., 2003. Recent ecological and biogeochemical changes in alpine lakes of RockyMountainNational Park (Colorado, USA): a response to anthropogenic N deposition. *Geobiology* 1, 153-168.
- Yan, N.D. and W. Geiling. 1985. Elevated planktonic rotifer biomass in acidified metal contaminated lakes near Sudbury, Ontario. *Hydrobiologia* 120, 199-205.
- Yan, N.D. and R. Strus. 1980. Crustacean zooplankton communities of acidic, metal-contaminated lakes near Sudbury, Ontario. *Can. J. Fish. Aquat. Sci.* 37, 2282-2293.
- Zakshek, E.M., K. Puckett and K. Percy. 1986. Lichen, sulfur and lead levels in relation to deposition patterns in eastern Canada. *Water, Air and Soil Pollution* 30, 161-169.

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