

Carl E. Zipper

Associate Professor

Specialty:

Environmental Science

Contact Information:

Department of Crop and Soil Environmental Sciences

Virginia Tech

Blacksburg, VA 24061-0404

Phone (540) 231-9782

Fax (540) 231-3431

e-mail: czip@vt.edu

Brief biography

Carl Zipper received a B.A. from Lehigh University in 1970. He received B.S. (1981) and Ph.D. (1986) degrees in Agronomy, and an M.S. degree in Agricultural Economics (1987). At Virginia Tech, he is involved in teaching, research, and outreach. His specialty areas are mined land restoration, water quality and watershed management, and application of geospatial technologies to land and water resource analyses.

Teaching

Fundamentals of Environmental Science, ENSC 3604

Extension

Primary Extension responsibilities are in the area of mine restoration, including service as Director of the Powell River Project, a Virginia Tech program that conducts research and outreach concerning restoration of lands disturbed by coal mining. For more information about Powell River Project, see <http://als.cses.vt.edu/prp/>. Additional Extension activities are conducted in the area of water quality management.

Research

Research activities deal with all aspects of environmental quality, with emphases on water quality / watershed management and environmental assessments at broad spatial scales.

Selected Publications

Soucek, D., D. Cherry and **C. Zipper**. 2003. Impacts of mine drainage and other nonpoint source pollutants on aquatic biota in the upper Powell River system, Virginia. *Human and Ecological Risk Assessment* 9:1059-1073.

Burger, J., and **C. Zipper**. 2002. How to Restore Forests on Surface-Mined Land. 2002. Virginia Cooperative Extension Publication 460-123. 18 pages.
<http://www.ext.vt.edu/pubs/mines/460-123/460-123.html>

Zipper, C., B. Lambert, J. Burger and W. Daniels. 2002. Linking research and regulatory policy to enable advances in reclamation practice. p. 866-878, in: Proceedings, National Meeting of the American Society for Mine Reclamation.

- Zipper, C.**, G. Holtzman, P. Darken, J. Gildea, P. Thomas and R. Stewart. 2002. Surface-water quality trend analysis: A multiple-site application. p. 77-104, In: T. Younos (ed.). *Advances in Water Monitoring Research*. Water Resources Publications, Littleton CO.
- Darken, P., **C. Zipper**, G. Holtzman and E. Smith. 2002. Serial correlation in water quality variables: Estimation and implications for trend analysis. *Water Resources Research* 38(7): 22 1-5.
- Zipper, C.**, G. Holtzman, P. Darken, J. Gildea and R. Stewart. 2002. Virginia USA water-quality, 1978 – 1995: Regional interpretation. *Journal of the American Water Resources Association* 38(3): 789-802.
- Jage, C., **C. Zipper** and R. Noble. 2001. Alkalinity generation by subsurface alkalinity producing systems: Regression analysis. *Journal of Environmental Quality* 30:1015-1022.
- Soucek, D., D. Cherry and **C. Zipper**. 2001. Aluminum dominated toxicity to *Ceriodaphnia dubia* in neutral waters downstream of an acid mine drainage discharge. *Canadian Journal of Fisheries and Aquatic Sciences* 58:2396-2404.
- Zipper, C.** 2000. Coal mine reclamation, acid mine drainage and the Clean Water Act. p. 169-191, in: R. Barnhisel, W. Daniels and R. Darmody (eds). *Reclamation of Drastically Disturbed Lands*. American Society of Agronomy. Madison WI. Monograph 41.
- Zipper, C.**, and L. Gilroy. 1998. Sulfur dioxide emissions and market effects under the Clean AirAct's Acid Rain Program. *Journal of the Air and Waste Management Association* 48:829-837.
- Zipper, C.**, and B. Lambert. 1998. Remining to reclaim abandoned mined lands: Virginia's initiative. p.530-538, in: *Proceedings, 1998 National Meeting of the American Society for Mine Reclamation*. St. Louis.
- Zipper, C.**, W. Balfour, R. Roth and J. Randolph. 1997. Domestic water supply impacts by underground coal mining in Virginia, USA. *Environmental Geology* 29:84-93.
- Santopietro, G., and **C. Zipper**. 1996. Incentives to encourage remining and reclamation of abandoned mines in Appalachia: Policy options. *Journal of Soil and Water Conservation* 51:8-15.