

DANIEL BENTON WHEELER

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EDUCATIONAL HISTORY

M.S. Soil Science, Water Resources Science Minor, University of Minnesota, July 1999. Thesis
Title: Spatial Variability of Soil Properties at Multiple Scales within the Minnesota River
Basin

B.S. Environmental Science, Soil Resources Emphasis, University of Minnesota, June 1997.

PROFESSIONAL APPOINTMENTS

Research Fellow - University of Minnesota, April 1999-Present.

- ◆ Instructor – ESPM 3221 Soil Conservation and Land-Use Management (2006-Present), current enrollment of 25 students.
- ◆ Co-instructor – ESPM 5555 Wetland Soils (2008).
- ◆ Develop, explain and present soil science outreach workshops for wetland delineators and on-site wastewater contractors in Minnesota (over 1,500 attendees each year).
- ◆ Co-principal investigator on several funded research projects.
- ◆ Conduct outreach on various technical soil science topics via phone, letters, site visits, presentations to state agencies, local government, private land owners, contractors, consultants, etc.
- ◆ Research, develop, and integrate innovative techniques to efficiently and effectively update outdated soil surveys within the State of Minnesota utilizing satellite imagery, digital orthophotographs, detailed DEM data, alternative soil sampling designs, and soil-landscape modeling
- ◆ Develop GIS databases and associated information for various research projects
- ◆ Advise and assist graduate students on technical aspects of their research projects
- ◆ Provide training in field pedology, GIS and allied technologies, hydric soil determination, hydrologic monitoring, and quantitative soil-landscape modeling to undergraduate, graduate students, staff, and visiting scientists
- ◆ Administer research program with an annual budget of \$250,000 (1999-2004).
- ◆ Co-instruct various portions of Soil Science courses including: Field Soil Mapping, Wetland Soils, Soil Genesis and Landscape Relations, and Field Colloquia in Pedology (1999-2004).

Graduate Research Assistant - University of Minnesota, March 1997-April 1999.

- ◆ Design, collect, analyze and interpret a multi-scale sampling design to analyze soil spatial variability using traditional statistics and geostatistics
- ◆ Develop an extensive GIS database for the Minnesota River Basin along with other major basins within the State of Minnesota
- ◆ Provide GIS capabilities and support to a multi-disciplinary group
- ◆ Attribute and compile the Twin Cities Metropolitan Council's seven county digital soil survey databases
- ◆ Provide training and expertise to GIS technicians using digital soil surveys and the MUIR database
- ◆ Teaching Assistant for Land-Use and Soil Conservation (2 years) and Soil Genesis and Morphology (1 year)
- ◆ Provide soil-landscape, soil survey, wetland soils, and GIS/GPS research knowledge to staff, students and public

Undergraduate Research Assistant - University of Minnesota, January 1996-March 1997.

Advisor: Dr. Jay Bell.

- ◆ Collect and analyze Wet Soil Monitoring data, soil-water hydrology along various landscapes in Minnesota
- ◆ Describe and sample soil-landscapes in Western Minnesota
- ◆ Research redox chemistry of hydric and non-hydric red soils in an independent research project

HONORS

- ◆ College of Agriculture, Food and Environmental Sciences Merit Award, 2007, 2006, 2005.
- ◆ Search committee member – University of Minnesota - Forest Soil Scientist, 2004.
- ◆ Collegiate Soil Judging Coach – University of Minnesota, 2002.
- ◆ Journal of Soil and Water Conservation - Best Research Article Award, 2001.
- ◆ Secretary-Treasurer of the Soil Science Graduate Student Association, 1997-1998.
- ◆ 1996 and 1997 recipient of the William and Georgia Olson Scholarship from the College of Agricultural, Food, and Environmental Sciences for academic excellence and leadership.
- ◆ Department of Soil, Water, and Climate Scholarship recipient for excellent academic achievement, 1997 and 1996.
- ◆ Member of the 1996 University of Minnesota Collegiate Soil Judging team.

REFEREED PUBLICATIONS

1. Christopherson, S., D. Wheeler, J. Wittwer, and T. Haeg. 2008. Field comparison of rock-filled and chambered trench systems. *J. Hydrologic Engineering*. 13:671-680.
2. Wheeler, D.B. and J.C. Bell. 2004. Comparison of slightly and moderately eroded phase soil map units in South-Central Minnesota. *In Soil Resources: Their inventory, analysis, and interpretation for us in the 21st century*. Proc. Int. Conf., Minneapolis, MN. 10-12 June 1999. Univ. of Minnesota Press, St. Paul, MN.
3. Lin, H., D. Wheeler, J. Bell, and L. Wilding. 2003. Assessment of soil spatial variability at multiple scales. *Ecological Modeling*.
4. Peng, W., D.B. Wheeler, J.C. Bell, and M.G. Krusemark. 2003. Delineating patterns of soil drainage class on bare soils using remote sensing analyses. *Geoderma*. 115:261-279.
5. Hatch, L.K., A.P. Mallawatantri, D. Wheeler, A. Gleason, D.J. Mulla, J.A. Perry, K.W. Easter, P. Brezonik, R. Smith, and L. Gerlach. 2001. Land management at the major watershed - agroecoregion intersection. *J. Soil Water Cons.* 56:44-51. (*Best research article award)
6. Wheeler, D.B., J.A. Thompson, and J.C. Bell. 1999. Laboratory comparison of soil redox conditions between red soils and brown soils in Minnesota, USA. *Wetlands*. 19:607-616.

OTHER SELECTED PUBLICATIONS

1. Wheeler, D.B. 2006. Knowing your soils. *Onsite Installer Magazine*. Issue May 2006. Cole Publishing Inc., Three Lakes, WI.
2. Wheeler, D., L. Kissing, B. Elf, G. Larson, J. Anderson, and J. Bell. 2007. Landscapes and soil saturation. University of Minnesota Extension, St. Paul, MN. *In final preparation*
3. Wheeler, D.B. and D. Gustafson. 2004. Anoka Sand Plain Training Manual. University of Minnesota On-Site Training Program. University of Minnesota, St. Paul, MN.
4. Wheeler, D.B., et al. 2003. Soils Manual. University of Minnesota On-Site Training Program. University of Minnesota Extension, St. Paul, MN.

5. Bell, J.C. and D.B. Wheeler. 2000. The Minnesota millennial soils and geomorphology field tour guide. 2000 Soil Science Society of America's Soil Geomorphology Field Trip.
6. Wheeler, D.B., J.A. Thompson, and J.C. Bell. 1999. Soil-landscape modeling to predict soil carbon in West-Central Minnesota. Project summary report for the USGS.
7. Wheeler, D.B. 1999. Spatial Variability of Soil Properties at Multiple Scales within the Minnesota River Basin. MS thesis. University of Minnesota.

SELECTED PROFESSIONAL PRESENTATIONS

1. Wheeler, D.B. 2008. Vegetation – Will it fix soils in raingardens? Not in your lifetime. 2008 Annual Water Resources Conference. St. Paul, MN.
2. Wheeler, D.B. 2008. Knowing your soil textures. 2008 Annual Southwest Wastewater Conference, Laughlin, NV. (invited)
3. Wheeler, D.B. 2007. Soils and Landscapes of West-central Minnesota. 2007 Minnesota On-site Wastewater Association Winter Conference, Alexandria, MN. (invited)
4. Wheeler, D.B. 2007. Testing a Technical Evaluation Committee Approach to Resolving ISTS Disputes. 2007 Minnesota On-site Wastewater Association Winter Conference, Alexandria, MN.
5. Wheeler, D.B. 2006. South-eastern Minnesota's Problem Soils. 2006 Minnesota On-site Wastewater Association Winter Conference, Rochester, MN. (invited)
6. Ganzel, P. and D. Wheeler. 2006. Design and Groundwater Mounding Analysis of the Bliss Soil-based Sewage Treatment System. University of Minnesota and MN Pollution Control Agency Mounding Forum, St. Paul, MN. (invited)
7. Wheeler, D.B. 2005. The Importance of Good Soils Descriptions. National On-site Wastewater Recyclers Association (NOWRA) Annual Conference, Cleveland, OH.
8. Wheeler, D.B. 2004. Understanding Soil Variability. Guest lecture in Landscape Architecture, University of Minnesota. Minneapolis, MN. (invited)
9. Wheeler, D.B. 2003. Soil Textures. St. Louis County Contractors Meeting, Twig, MN. (invited)
10. Wheeler, D.B. 2003. A Deeper Look at Benton County Soils. Benton County Contractors Meeting, Rice, MN. (invited)
11. Wheeler, D.B. 2002. Soils and Watertables. Minnesota Association of Professional Soil Scientists Winter Meeting, St. Cloud, MN. (invited)
12. Wheeler, D.B., J.C. Bell, and J.W. Bowe. 2001. Buried Thick Dark Surfaces: Problems Identifying Aquic Conditions and Hydric Soils. National Hydric Soils Workshop, Atlantic City, NJ.
13. Wheeler, D.B., J.C. Bell, and D.J. Mulla. 1999. Scale influences on soil property variability within the Minnesota River Basin. American Society of Agronomy Annual Meeting, Salt Lake City, UT.
14. Wheeler, D.B., J. C. Bell, and D.J. Mulla. 1998. Assessing soil spatial variability at multiple scales within the Minnesota River Basin. American Society of Agronomy Annual Meeting, Baltimore, MD.
15. Wheeler, D.B. and J.C. Bell. 1998. Problem red soils from Northeastern Minnesota: A redox explanation. Minnesota Association of Professional Soil Scientists Summer Meeting, Duluth, MN. (invited)