

JASON L. ROTH

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RESEARCH INTEREST

Current research interests focus on the use of computational models to assess the impacts of natural and anthropogenically induced environmental changes on water resources and broader ecosystems. Specifically these interests include: investigating the utility of numerical models to predict alternative system states, the comparison of alternative models and assessment of their applicability to hydrologic and water quality objectives, and model development and improvement. In the past, my research has focused on the use of models to assess the impacts of agricultural land management practice on hydrologic processes and nutrient and sediment transport. In the future, I will look to model hydrologic and chemical fate and transport processes within urban, groundwater, and river systems. I am also intrigued with the new possibilities and insights to be gained by hi-resolution processed-based geospatial modeling.

EXPERIENCE

Hydrologist - USGS Minnesota Water Science Center 2012 – Present
Hydrologist - USGS National Water Quality Assessment (NAWQA) Program 2010 – 2012

PUBLICATIONS

Capel, P. D. et al. (in press) *Agriculture: A River Runs Through It—The Connections Between Agriculture and Water Quality*: U.S Geological Survey. Circular XXXX (p. 172). Reston, VA: U.S. Geological Survey.

Roth, J. L., & Capel, P. D. (2012). *Changes in the Water Budget of and Sediment Yield from an Agricultural Field as a Function of Land and Management Characteristics: A Unit Field Modeling Approach*: U.S. Geological Survey Scientific Investigation Report 2012-5203 (p. 83). Washington, D.C.

Roth, J. L., & Capel, P. D. (2012). *The Hydrology of a Drained Topographical Depression within an Agricultural Field in North-Central Iowa*. *Transactions of the ASABE*, 55(5), 1801–1814

CONFERENCES

The Hydrology of a Drained Topographical Depression within an Agricultural Field in North Central Iowa. Roth, J. L., & Capel, P. D. (2012). Paper presented at ASABE Annual International Meeting in Dallas, TX on Jul 29-Aug1, 2012

Agricultural Surface Inlets as a Source of Phosphorus and Sediment to Streams. Roth, J. L., & Capel, P. D. (2008). Poster presented at Minnesota Water Resources Conference in St Paul, MN on Oct 27-28, 2008

EDUCATION

Master of Science in Civil Engineering 2010
University of Minnesota – Twin Cities
Thesis: Roth, J. L. (2010). *The Hydrology of a Drained Topographical Depression within an Agricultural Field in North Central Iowa* (p. 83). Minneapolis, MN.

Post-Baccalaureate Certificate in Stream Restoration Science 2010
University of Minnesota – Twin Cities

Bachelors in Civil Engineering 2007
University of Minnesota – Twin Cities
Areas of Focus: Hydrology, Hydrologic Modeling, Water Quality

MEMBERSHIPS

Soil and Water Conservation Society
American Society of Agricultural and Biological Engineers