



## John Pitlick Fluvial Processes Research Group

### **Project:**

### **Understanding Processes and Linkages at the Sediment-Water Interface**

**Lead Investigator:** Donald Rosenberry

**Sponsors:** US Geological Survey

Primary goals of this project are to (1) improve the understanding of processes that control flow of water across the interface between surface water and ground water in lake, wetland, and fluvial settings, (2) develop techniques for measuring and modeling the interchange between surface water and ground water, and (3) determine the significance of all hydrologic fluxes related to lakes, wetlands, and rivers. Such measurements are needed to assess the impact of lake and riparian management, land development, and watershed management on lakes, rivers, and their associated ground-water systems. Field measurements and calibrated models are needed to evaluate the effects of ground-water development and management on lakes and rivers. A significant portion of this research is conducted in collaboration with scientists from USGS National Research Program, USGS Biological Resources Discipline, and several universities at three long-term research sites in New Hampshire, Minnesota, and North Dakota.



### **Publications Related to this Work:**

1. Rosenberry, D.O. and Menheer, M.A., 2006, A system for calibrating seepage meters used to measure flow between ground water and surface water: U.S. Geological Survey Scientific Investigations Report 2006-5053, 21p.
2. Rosenberry, D.O., 2005, Integrating seepage heterogeneity with the use of ganged seepage meters: *Limnology and Oceanography: Methods*, vol. 3, p. 131-142.
3. Rosenberry, D.O. and Morin, R.H., 2004, Use of an electromagnetic seepage meter to investigate temporal variability in lake seepage: *Ground Water*, vol. 42, no. 1, p. 68-77.

4. Hayashi, M. and Rosenberry, D.O., 2002, Effects of groundwater exchange on the hydrology and ecology of surface waters: *Ground Water*, v. 40, no. 3, p. 309-316.
5. Rosenberry, D.O., 2000, Unsaturated zone wedge beneath a large, natural lake: *Water Resources Research*, vol. 36, no. 12, p. 3401-3409.

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