

## UEBL Projects

Project: Influence of road salt on urban ecosystems

Summary: The use of sodium chloride as a deicing agent in cold climates has been a common practice since the mid-1900s and its use has increased dramatically in recent decades. Municipalities in the US apply 8-12 million tons of road salt to impervious surfaces annually. The U.S. Environmental Protection Agency does not currently list road salt as a potential contaminant to surface waters; however, there is evidence that Cl<sup>-</sup> levels in surface waters of urban systems are already at levels that may be harmful to freshwater ecosystems (> 250 mg/L chloride). Research in the UEBL has recently evaluated road salt toxicity in amphibians and characterized the impacts of road salt on stormwater pond soils and groundwater surrounding stormwater ponds.

Products:

Van Meter, R. J., C. M. Swan, J. Leips, and J. W. Snodgrass. 2011. Road salt stress induces novel food web structure and interactions. *Wetlands* 31:843-851. [Link to Full Article](#)

Van Meter, R. J., C. M. Swan and J. W. Snodgrass. 2011. Salinization alters ecosystem structure in urban stormwater detention ponds. *Urban Ecosystems* 14:723-726. [Link to Full Article](#)

Brown, M., E. Dobbs, J.W. Snodgrass, D.R. Ownby. 2012. Ameliorative effects of sodium chloride on acute copper toxicity among Cope's Gray Tree Frog (*Hyla chrysoscelis*) and Green Frog (*Rana clamitans*) embryos. *Environmental Toxicology and Chemistry*. 31(4):836-842. [Link to Full Article](#)

Dobbs, E., M. Brown, J.W. Snodgrass, D.R. Ownby. 2012. Dependence of salt toxicity to Cope's Gray Treefrog (*Hyla chrysoscelis*) on water depth. *Herpetologica*. 68(1):22-30. [Link to Full Article](#)

Casey, RE, SM Lev, JW Snodgrass. 2012. Stormwater ponds as a source of long-term surface and ground water salinization. *Urban Water Journal*. In press.