Characterizing Forested Watershed Nitrification Potential with 24-hour Rate Measurements. (S07-ross161738-Oral)

Authors:

- D.S.Ross University of Vermont
- G.B.Lawrence United States Geological Survey
- J.B.Shanley United States Geological Survey

Abstract:

Accurate measurements of forest soil nitrification rates are needed in nutrient cycling studies and in research addressing the effects of increased N deposition. A variety of net nitrification measurements have been used and all may be susceptible to disturbance effects. We have found that 24-hour rate measurements in bulked samples can accurately reflect rates determined in longer incubations (4-week). The initial extraction must be performed in the field as soon as possible after sampling. This method allows watershed-wide sampling to occur in a single day, potentially characterizing the spatial distribution of nitrification. Combined with the topographic index, prediction of stream nitrate export may be possible. Preliminary results from three watersheds (Brush Brook and Sleepers River in Vermont and Buck Creek in the Adirondacks) will be presented.

Corresponding Author Information: Donald Ross University of Vermont Dept. of Plant and Soil Science, Hills Bldg. Burlington, VT 05405

phone: 1-802-656-0138 fax: 1-808-656-0285 e-mail: dross@zoo.uvm.edu

Presentation Information:

Presentation Date: Thursday, November 14, 2002 Presentation Time: 10:15 am

Keywords:

nitrogen transformations, forest soils, nitrogen mineralization, carbon to nitrogen ratio