



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2003ME21B

Title: The functional role of forested seeps in maintaining hydrology, water quality and biological diversity in a New England watershed

Project Type: Research

Focus Categories: Hydrogeochemistry, Wetlands, Groundwater

Keywords: Base Flow, Denitrification, Groundwater Hydrology, Landscape Management, Soil Microbiology, Springs, Wetlands

Start Date: 04/01/2003

End Date: 03/31/2004

Federal Funds: \$10574.00

Matching Funds: \$44966.00

Congressional District: 2

Principal Investigators: Calhoun, Aram; Reeve, Andrew (University of Maine); Dail, Bryan (The University of Maine)

Abstract: Forested hillside seeps are windows to subsurface geochemistry and may provide important hydrologic, geochemical, and ecological functions within watersheds. The discharge of oxic groundwater through seeps may create unique edaphic and hydrologic environments within a watershed. The biogeochemical, hydrologic and ecological function of three forested hillside seeps will be quantified. Existing studies in hillside seep function are scant and further study is necessary to adequately assess (1) the role of seeps as sources or sinks for nutrients and transformation of nutrients, (2) the role of seeps in stream hydrology and chemistry, (3) the function of saturated, but oxic soils as compared to typical hydric soils and upland soils, and (4) the ecological role of hillside seeps as hotspots for uncommon plant communities or as wildlife refugia. Identifying connections among hydrology, nutrient dynamics, and the plants and animals they support will contribute substantially to seep management strategies, and wetland functional assessments.

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