



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002NH2B

Title: Dynamics of Groundwater Inflows to the Lamprey River, New Hampshire

Project Type: Research

Focus Categories: Groundwater, Surface Water, Water Quantity

Keywords: low-flow, baseflow, groundwater, surface water, water resources, water quality

Start Date: 03/01/2002

End Date: 02/28/2003

Federal Funds: \$17,480

Non-Federal Matching Funds: \$38,070

Congressional District:

Principal Investigator:

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Abstract

The Lamprey River, located in southeast New Hampshire, is an important water resource to the seacoast region of New Hampshire. However, the Lamprey River commonly experiences periods of low flow conditions ($Q < \text{approx. } 10\text{cfs}$). Preliminary analysis of stream flow and groundwater data suggests that these low flow conditions are controlled largely by the dynamics of gravity drainage of the bedrock and stratified drift aquifers. The proposed research investigates the sources of surface water during low flow to determine the relative groundwater contributions of bedrock and stratified-drift aquifers to the Lamprey River during the late summer to early fall. The existing data will be augmented by monitoring additional groundwater wells and gaging additional locations in the Lamprey River Watershed during the summer - fall 2002. A lumped parameter model will be adopted to analyze rates and relative contributions of the main aquifer types. Results of this research will be compiled in a GIS database and will lead to a better understanding of the factors that control low flow conditions in the Lamprey and potential ways of effectively forecasting and managing this important resource.