AN INVESTIGATION OF THE IMPORTANCE OF SNOW COVER TO THE NUTRIENT REGIME OF OLIGOTROPHIC SOILS IN A SUBARCTIC DRAINAGE BASIN

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ABSTRACT

The purpose of this research is to investigate the importance of snow cover to the nutrient regime of oligotrophic soils in a small, subarctic drainge basin. The hypothesis is that snow cover contributes directly to the soil nutrient supply and that it creates an environment which permits over-winter decomposition such that nutrients may accumulate and be retained at the snow/soil interface. However, the effectivensss of the snow cover in both cases will vary according to local topography and vegetation. The project was designed to evaluate the differences that may exist in the nutrient contributions from the snowpack and the nutrient exchange processes occurring at the snow/soil interface between the four well-defined vegetation/topographic associations occurring in the May Lake basin near Schefferville, Quebec. This requires an assessment of the nutrient status of the soils and litter layers of the four study units, an assessment of the nutrient content of the snowpack overlying these soils, monitoring of litter decomposition during the winter and monitoring changes in snowpack conditions and soil and snow/soil interface temperatures in the study sites during the winter and spring melt seasons.