

Effects of timber harvesting, snow accumulation, and melt, on seedling survival and growth

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Theme: Hydrology and Microclimate

Status: Continuing

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Participants

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Background

Timber harvesting can greatly affect snow accumulation and melt by reducing precipitation interception and changing the aerodynamic structure of the forest. Deep snow can protect young seedlings from animal browsing and insulate them from extreme low temperatures. On the other hand, seedlings may be attacked by snow mold or smothered by accumulations of snow and grass. Some cutting patterns may prolong the snowpack in the spring.

Objectives

1) To determine patterns of snow accumulation and melt under different levels of timber harvest 2) To relate seedling survival and growth to snow cover, soil temperature, and soil water content.

Key Results

Results of the snow survey conducted in February 2001 showed that snow depth increased with the amount of forest cut. Snow density on the other hand tended to be uniform across the different canopy retention levels, and averaged about 17%. Initial surveys on the snow transects showed very low occurrence of naturally regenerated seedlings. Too few were found to determine whether there was a relationship between seedling performance and snow depth.