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**Dendroclimatic response of alpine treeline species  
in central Labrador: a multi-species perspective**

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This study presents the first black spruce, balsam fir and larch tree ring width chronologies from Labrador. It uses a multi-species perspective to study the radial growth response of alpine treeline species in the Mealy Mountains to local and regional climate variables using bootstrapped correlation analysis. The radial growth response of black and white spruce trees is positively sensitive to growing season air temperatures and sea surface temperatures (SSTs) in the vicinity of the Grand Banks. Moisture originating from warm SSTs in the adjacent Labrador Sea appears to affect moisture-sensitive white spruce and balsam fir trees negatively in the Mealy Mountains.

Comparative analysis of 4 tree-ring time series indicates that periods of larch sawfly outbreaks have occurred in the Mealy Mountains and that these events exert a significant amount of influence on the radial growth of larch trees in the Mealy Mountains. These inferred periods of insect infestations coincide with others reported in Quebec.

Growing season (June-September) temperature is reconstructed for the Mealy Mountains using merged spruce tree ring width chronologies (1847–2004). The reconstruction is in accordance with other reconstructions at regional and hemispheric scales. The sensitivity of spruce trees to local temperature and precipitation is unstable throughout the period

of instrumental record due to moisture effects. Further, spruce trees in the Mealy Mountains show evidence of divergence from air temperatures over the last several decades.