

A Characterization of the Vegetation Communities of Three Retrogressive Thaw Slumps on Herschel Island, Yukon Territory, Canada

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2010

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Retrogressive thaw slumps are landscape features resulting from thawing ice-rich permafrost which tend to go through cycles of activity. This cycle of disturbance and stabilization results in distinctive geomorphic units reflecting the stage of stabilization and the time since disturbance. This thesis describes the vegetation and soil characteristic of geomorphic units for three active, polycyclic retrogressive thaw slumps on Herschel Island, YT. At each unit, 60m transects with six 1m x 1m plots were established and species presence, diversity, and percent cover were used to define the plant community. Distinct vegetation communities are associated with the geomorphic units of each thaw slump, representing their relative age and stabilization. Where anomalies exist, they can be explained by the presence of vegetation remnants. Since vegetation exerts strong controls on local ecosystem processes, recognizing the effects of disturbance on revegetation patterns is critical to understanding climate change in the Arctic.

Delineation of Geomorphic Zones at Slump A. Background Photo Taken Aug 7th 2008.

