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**The nature and chronology of alpine glaciation in  
the Tablelands, Gros Morne National Park, western  
Newfoundland: preliminary results**

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Alpine glacial features have long been known to exist in the highlands of western Newfoundland; however, little is known of their age or mode of formation. Of particular interest is the Tablelands plateau, whose steep NE and SW flanks are incised by cirques and small U-shaped valleys. Research over the past three years has resulted in a more comprehensive model for glaciation and landform development in this region.

Rock glaciers on the flanks of the Tablelands are of the cliff-base variety. Original ice cores in these features are indicated by closed depressions behind terminal crests. None show any signs of recent activity. The Devil's Punchbowl cirque shows considerable accumulation of colluvium which demonstrates a pre-Neoglacial age for occupation of the cirque by active ice. The cirque moraine is 20 to 25 m high on its proximal flank and 0 to 8 m high on its distal flank. It is not a protalus rampart because (a) it bulges away from the cirque headwall instead of paralleling the base of the headwall, (b) it contains a considerable volume of fines, and (c) the requisite snowbank would have a very low gradient. A black to grey peridotitic, well-consolidated, matrix-supported diamict ("Grey Fill") was found underlying colluvium, rock glacierized sediment and talus in all tributary valleys investigated and was also found to extend into the main trunk valley. This sediment is till that was formed by a variety of processes which may have involved cycles of lodgment, deformation, and meltout, consistent with deposition in a wet-based, high gradient environment. Cosmogenic dates on boulders situated on the moraines and rock glaciers indicate that these features and the underlying Grey Fill were formed prior to 18 kyr and that last glacial maximum (LGM) ice did not extend into Trout River Gulch. These data indicate that many of the glacial features on the Tablelands are older than previously thought and that significant areas remained ice free during LGM.