
Sapping channels in a glaciofluvial complex:
A possible Martian analog?

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A number of short and wide channels occur in the Sandilands Interlobate Moraine in southeastern Manitoba. Estimates of flow rates based on the Manning equation suggest extremely high flow rates well beyond could be expected as runoff given their surficial catchment areas and suggest that groundwater sapping was important in their formation. These features are truncated by the Campbell Strandline, which has an age of approximately 9900 to 9400 ¹⁴C B.P. Hydrogeologic modeling suggests that during the drop the level of Lake Agassiz to the Upper Campbell level, the subsurface hydraulic gradients generated would have been sufficient to allow for groundwater sapping. A number of bowl-shaped depressions located above Upper Campbell Beach strandline likely have a similar origin as piping features. These sapping and piping features are of interest as a possible Martian analog due to their resemblance of similar geomorphological features that occur on the surface of Mars.