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Ice-contact slope movements; their abundance and significance during deglaciation

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The timing, form, and efficiency of rock slope failures influences sediment generation, glacier dynamics, and slope related hazards in valleys undergoing deglaciation. It has become apparent, through theoretical and field observations, that beyond a critical level, buttressing by glaciers does not prevent slope movement. Therefore, slope failures may develop and move prior to complete withdrawal of a receding glacier, and deform the glacier in doing so. Consequently, these failures may provide a source of sediment to the glacial system during the entire stage of deglaciation, and may influence glacier flow dynamics. This presentation will (i) provide evidence of this process occurring in a range of rock types and environments in an attempt to infer the specific conditions in which ice-contact slope movements will occur; and (ii) discuss the implications of this process for other geomorphic and proglacial sediment processes in valleys currently undergoing glacier retreat.