



An assessment of the rapid evolution of ice-marginal and proglacial systems due to ongoing climate change.

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Ice-marginal and proglacial systems are rapidly evolving due to ongoing climate change, which is primarily manifest in deglaciation and thawing permafrost. Evolution of ice-marginal and proglacial systems can be recognised specifically in geomorphological and hydrological processes, landforms and sediments. These changes will have important and immediate consequences for landscape stability and for water and sediment fluxes, and hence for biogeochemical cycles, ecology and human activity. This presentation will discuss three hot topics; (i) the general response of alpine catchments to deglaciation and permafrost thawing, (ii) the impact of proglacial lakes on ice margins and on proglacial systems, (iii) the role of sudden onset glacier floods, or 'jökulhlaups', in ice-marginal and proglacial systems. In all three topics an emphasis will be made on the state of conceptual knowledge, outstanding requirement for quantitative measurement and analysis, and opportunities offered by emerging technology. The presentation will finish with a look forwards to suggest ways of integrating ideas and approaches, resources and methods across research disciplines.