



Asynchronous glaciation in Eastern Siberia during the Late Quaternary

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The extent and timing of former glaciation in Eastern Siberia has been reconstructed through the systematic mapping of end moraines, and the integration of published age-estimates. Reconstructions reveal that during the global Last Glacial Maximum (gLGM), glaciers extended no more than 50 km beyond mountain centres. During earlier, pre-gLGM, phases, glaciers were more extensive, with lengths of over 260 km. Published age estimates, though few, reveal that the timing of former glaciation, and the maximum Quaternary extent, was asynchronous across the region, and out-of-phase with ice-extent maxima elsewhere in the Northern Hemisphere. This glacial history is partly explained through consideration of climatic-forcing (particularly moisture-availability, solar insolation and albedo), though topographic-controls upon the extent and dynamics of former glaciers are also considered. Ultimately, it is argued that, during periods of Late-Quaternary cooling, the extent of glaciers in Eastern Siberia was governed by moisture availability, which was, in turn, largely governed by the extent of ice sheets elsewhere in the Northern Hemisphere.