



Landscape response and development following the catastrophic 1918 jökulhlaup, southern Iceland

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The 1918 subglacial volcanic eruption of Katla volcano, southern Iceland, generated vast quantities of water and sediment that culminated in the instantaneous and catastrophic release of a sediment-laden jökulhlaup that inundated Mýrdalssandur. The probability of a Katla eruption and associated jökulhlaup in the near future is high; this is particularly timely as previous eruptions of Katla volcano are temporally linked to those of the Eyjafjallajökull volcano, which erupted in the Spring of 2010. The broad-scale impact and subsequent responses of the terrestrial and coastal landscapes following the 1918 jökulhlaup and similar events are poorly understood. We construct DTMs from topographic surveys of Mýrdalssandur acquired in 1904, 1946, 1980 and 2000, and combine this dataset with field observations, to make a quantitative assessment of landscape change and development following the 1918 jökulhlaup. Using these data we characterise the time-dependent response of the sandur surface and coastline, over a 100 year repose period, and highlight the potential impact of future jökulhlaups generated from the eruption of Katla volcano.