



Landscape response to the 1918, Katla jokulhaup, southern Iceland

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The massive Katla jökulhlaup that occurred in 1918 was a major landscape resetting event, and demonstrates the devastating impact that such powerful events can have on the landscape. Here we detail gross landscape change and sedimentary deposits from the 1918 event and use these to calculate flow hydraulics and assess the timescales and patterns of landscape recovery. In particular we show that the 1918 jökulhlaup caused limited net incision, added > 0.8-1.0 km³ of sediment to the outwash plain, and extended the coastline by up to ~4 km. We demonstrate, however, that 50-60% of the material deposited during the 1918 event has since been removed. Crucially, the surface elevation of specific regions on the outwash plain and the position of the coastline in 2007 are similar to that in 1904, indicating near-complete recovery of the landscape in 80 years. The data provide an insight into the timescales and mechanics of landscape response and recovery and allow for an assessment of long-term landscape development and landscape state.