

## **A last spasm of the Scandinavian Ice Sheet: Traces of an Early Holocene glacial surge in south central Norway**

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The final demise of the Scandinavian Ice Sheet in Norway occurred by rapid frontal retreat and vertical thinning and involved the formation of numerous meltwater features and ice-dammed lakes. The nature of ice sheet retreat is largely unknown, however, although the presence of De Geer moraines signals dynamic glaciers that retreated actively through some of the palaeolakes. Here we present a suite of landforms close to the former ice-divide in south central Norway, that we suggest are indicative of a glacial surge in the Early Holocene. The landform record comprises end moraines, extensively fluted terrain and a myriad of delicate ridges. The delicate ridges often superimpose flutes and drumlins and are generally oriented transverse to the moraine ridges, but also appear as a more chaotic and intricate network of rhombohedral-like ridges of various orientations proximal to the moraines. The ridges, which have amplitudes of 0.3-2 m and are typically spaced 30-100 apart, are interpreted as crevasse-squeeze ridges. The triggering cause for the purported surge event is unknown. The area is located just south of the southernmost palaeoshorelines related to the Early Holocene glacial lake Nedre Glomsjø, however, and we accordingly speculate that the glacial surge occurred as a result of a reconfiguration of the remnant ice sheet induced by a catastrophic drainage of the glacial lake.