



## **Quaternary fluvial response to climate change in glacially influenced river systems**

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Over the last few decades, many studies in Europe and other continents have focused on the fluvial response to climate forcing in unglaciated basins. However, glacial activity may have a profound impact on the behaviour of the fluvial systems located downstream. In comparison to ice-free basins, these systems are characterised by distinctive hydrological and sediment supply regimes. Over Quaternary timescales, the fluvial records are influenced by periglacial (in non-glaciated areas), proglacial, and paraglacial processes. Understanding the impacts of these processes on the formation and preservation of the Quaternary geomorphological and sedimentary archives is key for our understanding of glacial-fluvial interactions. We investigate the impact of Quaternary glacial activity on fluvial sediment transfer, deposition, and preservation. Using existing studies from across Europe, we create a database of glaciofluvial geomorphology, sedimentology, and geochronology. This is used to examine how glacial forcing of fluvial systems varies spatially in different basin settings, and temporally over successive Milankovitch cycles. In particular, we focus on the ways in which the primary glacial-fluvial depositional signal could be distinguished from periglacial and paraglacial reworking and redeposition.