



On the morphodynamics of a channel on a small proglacial braid plain (Fagge River, Ötztal Alps, Austria)

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Braid plains are important sediment stores in high mountain regions, particularly in glacier forefields of Alpine glaciers. Proglacial braid plains receive sediment input from glacial meltwater and paraglacial sediment sources. The channel morphodynamics on a braid plains are strongly related to the sediment transport and flow regime of the proglacial river. This study deals with channel morphodynamics on a small proglacial braid plain in the European Alps.

The Fagge River originates at the glacier Gepatschferner. In 1953 the glacier covered the whole 300 m long braid plain. Geophysical surveys on the glacier tongue carried out in the 1950s showed the existence of a subglacial basin filled with sediments. After glacier "retreat" a proglacial braid plain developed there. In 2014, the glacier snout was 1250 m upstream of the braid plain (mean annual "retreat" of 25 m/year).

This study focusses on two different time scales. Decadal channel planform changes were assessed by remote sensing approaches. Ten orthophoto sequences (1953-2014) were analysed in a GIS. Those channel planform changes were mapped and different braiding indices were calculated.

The recent channel bed changes were investigated by cross sectional surveys and particle counts in 2013 as well as terrestrial laserscanning campaigns in June 2012 and September 2013.

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