



GIS- and field based mapping of geomorphological changes in a glacier retreat area: A case study from the Kromer valley, Silvretta Alps (Austria)

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Global warming results in an ongoing retreat of Alpine glaciers, leaving behind large amounts of easily erodible sediments. As a consequence processes like rockfalls, landslides and debris flows as well as fluvial processes occur more frequently in pro- and paraglacial areas, often involving catastrophic consequences for humans and infrastructure in the affected valleys. The main objective of the presented work was to map and spatially quantify glacier retreat and geomorphological changes in the Kromer valley, Silvretta Alps (Austria) by applying GIS- and field-based geomorphological mapping. In total six geomorphological maps (1950s, 1970s, 2001, 2006, 2012, and 2016) were produced and analyzed in the light of the study aim. First results have shown a significant decrease of total glaciated area from 96 ha to 53 ha which was accompanied by increased proglacial geomorphic activity (i.e. fluvial processes, rockfalls, debris flows, shallow landslides) in the last 15 years. More detailed results will be presented at the EGU General Assembly 2017.