

The analysis of supraglacial lakes: case study from the Cordillera Blanca, Peru

ABSTRACT: Supraglacial lakes play an important role in the processes of glacier ablation. Through their expansion, a proglacial lake that usually poses significant threat to downvalley located areas can form. Such formation of proglacial lakes also took place and was well described in the Peruvian Cordillera Blanca (e.g. Laguna 513). However, there are only few studies relating to supraglacial lakes of this range. First in this thesis, based on the research of the scientific literature, the factors influencing supraglacial lakes' development and some of the limnological characteristics are listed in detail. Second, recent evolution (2003-2014) of supraglacial lakes of the Cordillera Blanca is analysed on the sample of 13 glaciers. The results show that the development of supraglacial lakes is influenced by their frequent destructions (because of outbursts and/or rapid accumulation of debris in the basin). In addition, the expansion of the extent of supraglacial lakes on a glacier tongue is strongly controlled by surface gradient.

Keywords: glaciers, supraglacial lakes, Cordillera Blanca, Peru