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**LIFE+ BIOAQUAE**  
**LIFE+ LIMNOPIRINEUS**

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**INTERNATIONAL MEETING ON  
THE CONSERVATION OF HIGH  
MOUNTAIN LAKES**

**ABSTRACT BOOK**



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## Effects of deglaciation on Alpine freshwater ecosystems

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Glaciers shrinkage and permafrost degradation are amongst the most evident and dramatic effects of human-driven climate change, and the loss of cryosphere is determining radical shifts in the hydrology and ecology of freshwaters also in the European Alps. A decreased water discharge from glaciers is foreseen in Alpine catchments, while thawing of rock glaciers (a common form of permafrost in the Alps) may become increasingly important for the hydroecology of headwaters. While a large amount of literature is available on the effects of glacier retreat on freshwater ecosystems, very little is known about the ecology of streams and lakes fed by rock glaciers. Nevertheless, there is evidence that permafrost degradation can have drastic effects on headwater physico-chemistry, which include increasing electrical conductivity, acidification, and contamination by heavy metals.

The poster presents a PhD project, which aims at assessing the impacts of deglaciation on Alpine water ecosystems. A space by time substitution analysis will be undertaken in the Zay and Solda catchments (South Tyrol, Italy), where downstream changes in the contribution of different water sources (glaciers, rock glaciers, groundwater, snowmelt and rainfall) are considered as a proxy for temporal stages in the deglaciation process. In addition ecological shifts during different glaciation/deglaciation phases over the past centuries will be examined through the paleolimnological investigation of one high altitude lake within the study area.