



CLIMate-driven alterations in BIODiversity and FUNctioning of high alpine lakes in the Tyrolean Alps over the past millennium (ClimBioFun; 2010-2012)

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Summary

Recent climate warming poses one of the principal threats to the biological diversity of the planet. There is evidence that biodiversity loss is becoming even greater and faster in freshwater systems, especially in high alpine regions highly vulnerable to climate change, as compared to marine and terrestrial ones. The general objective of the project is to reconstruct changes in aquatic biodiversity along with alterations in the functioning and limnological conditions of two high alpine lakes from North Tyrol (Austria) and South Tyrol (Italy) in response to climate variations over the past millennium. We propose to investigate well-dated sediment cores from both lakes to trace past ecosystem changes. We will match the general patterns of changes in the aquatic assemblages to available meteorological observations since 1800 and millennial-scale palaeoclimate archives from the region, such as tree-rings, speleothems etc. This will allow us to compare recent changes in biodiversity with those during periods of pronounced climate variations in the past. The millennial-scale view of variability in biodiversity and limnological conditions will provide a reliable estimate of natural oscillations and human-made impacts and thus a better understanding of expected alterations of alpine waters in the near future.

