

Glacial risk and reservoir management: the Lago della Rossa reservoir example (Valli di Lanzo, Western Alps, Italy)

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SYNOPSIS. The climatic evolution of the last years, characterised by slight winter snowfalls and very high summer temperatures, is causing a progressive loss in ice mass combined with the increase of glacial risk. Besides the widespread retreat of glaciers, one of the most evident consequences of temperature increase is the formation of epiglacial lakes, like the one formed on the left side of the Croce Rossa glacier in 1998. The glacier overhangs the reservoir of Lago della Rossa, the highest in Italy. A complete survey (GPS surveyed strain net, ablation stakes, radar echo sounding, automated air and ice temperature measurement) has been carried out since 1998 in order to outline the main features of the glacier and monitor its evolution. Mathematical and physical models have been applied in order to evaluate glacier stability and future scenarios in case of epiglacial lake outburst.