



High resolution multiproxy records from the last 4500 yr cal BP from Lake Shkodra (Albania/Montenegro boundary)

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Lake Shkodra is a large (45 km long, 15 km wide) and shallow (5 m mean depth) lake, developed on a mainly carbonate substratum, and located in the Mediterranean climatic belt of Albania and Montenegro. Gravity cores of its recent sedimentary fill (mixed calcareous/siliciclastic clayey silts) representing ca the last 4500 yr cal BP were analysed for exploring the paleoclimate and paleoenvironmental evolution of this poorly known sector of the Mediterranean basin. The record is made more valuable by the presence of four well known tephra layers from southern Italian volcanoes, which allow detailed correlations with others archives in the central Mediterranean (Sulpizio et al., 2009). Sedimentological, mineralogical and chemical analyses suggest that the carbonate fraction is mainly endogenic. Preliminary diatom analysis suggests that the lake water has remained fresh over the last 4.5 ka. Data on the isotopic composition of the rainfall in the Adriatic basin and the few data available on the lake's superficial waters suggest that the isotope composition of the lake is mainly dominated by the local hydrological balance driven by the amount of rainfall, which arrives from different sources and which experiences limited evaporative effects. Oxygen stable isotope composition of bulk samples suggests that the lake experienced two main humid phases at ca 4500-4200 yr cal BP and at ca 2400-2000 yr cal BP, separated by drier conditions. Prominent dry phases occur at ca. 4100, 3200, 1800, 1400, and 1150 cal yr BP. Pollen data only partially corroborate this owing to the peculiar morphology of the area surrounded by high mountains and characterised by an elevated rainfall regime. However, some interesting patterns can be identified with AP pollen concentration.

Sulpizio, R., Van Welden, A., Caron, B., Zanchetta, G., 2009 The Holocene tephrostratigraphic record of Lake Shkodra (Albania and Montenegro). Journal of Quaternary Science, DOI: 10.1002/jqs.1334