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Abstract Book

The impact of hydrological dynamics on cladocera community in a deep sub-alpine lake (L. Iseo): a paleolimnological perspective.

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Lake deposits provide ideal archives to study the past catchment dynamics and the related response of lake ecosystems. In particular, sediment records deposited over long time periods can provide information on lake development stages preceding the moment of the most relevant human disturbance, and can help disentangling and quantifying the lake ecosystem responses to natural variability and human perturbation, such as climatic and hydrological variation, eutrophication and chemical contamination. Subfossil Cladocera records allow tracking long-term changes in both bottom-up drivers and top-down regulators and they particularly respond to alterations in nutrients, temperature and water level. The aim of this work was to investigate a short sediment core from a deep subalpine lake (Lake Iseo, northern Italy) aiming at reconstructing the influence of human activities and climate variability on the lake ecosystem. We compared the sediment records with historical information on major hydrological events during the last century, and with climate-related limnological data. As already observed in other subalpine lakes, the sediment records of Lake Iseo suggest that catchment related processes are able to decisively affect the food web dynamics and the lake functionalities. In particular, we observed that a series of flood events in the period between the 1970s and 1980s resulted in a decrease in the Cladocera total abundance and a prevalence of the littoral species over the pelagic one. The decline of the pelagic species has been attributed to the transport of inorganic material from the catchment area to the lake.