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Le alterazioni del ciclo dell'acqua

Interazioni tra acque continentali e oceani in
un pianeta in rapido cambiamento



VOLUME DEI RIASSUNTI

Book of Abstracts



Diatoms and Cladocera responses to secular environmental changes in Lake Garda.

Lake Garda (368 km²) represents a key environment resource in northern Italy for biodiversity, tourism, drinking water supply and irrigation. The evaluation of the lake vulnerability to human stressors within the current climate change emerges as a stringent necessity. Paleoecological methods were used to understand ecosystem changes in Lake Garda at secular scale. Two short sediment cores were collected from the deepest point of the main (350 m) and shallower (81 m) basins. Radiometric dating indicates an age of ~700 years for both the cores. Analysis of the diatom assemblage indicated very stable oligotrophic conditions until the 1960's, followed by a rapid increase in mesotrophic pennate colony-forming Fragilariaceae at the expense of *Cyclotella comensis*, essentially as a result of moderate nutrient enrichment. In order to integrate diatom results and compare long term changes in the pelagic and in the littoral zone of Lake Garda, the two deep cores and an additional littoral core (30 m depth) of the shallower basin were analysed for cladocera remains. The three cores showed comparable temporal trends. Until the 1960s, in the lower core sections they presented a great variety of species and the dominance of *Alona* sp. and *Acroperus harpae*, while *Daphnia* sp. and *Bosmina* sp. were the most abundant taxa in the upper sections. A non-metric multidimensional scaling (NMDS) was performed for each core to identify patterns in the temporal evolution of sub-fossil diatom assemblages and cladocera remains, separately. To investigate the influence of different limnological and sediment-inferred factors on the cladocera community composition, a vector fitting analysis was applied to the sample scores on the NMDS configuration. The study confirms the strength of the multi-proxy paleoecological approach in complementing and interpreting limnological investigations and ecological changes at secular scale.

Partecipa al concorso per la miglior presentazione orale/miglior poster

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