



2015 Aquatic Sciences Meeting

Aquatic Sciences: Global And Regional Perspectives — North Meets South

22-27 February 2015 — Granada, Spain

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ABSTRACT

MULTI-PROXY APPROACH TO EVALUATE THE EFFECTS OF CLIMATE CHANGE AND NUTRIENT ENRICHMENT ON THE PLANKTONIC COMMUNITY IN LAKE GARDA (ITALY) AT SECULAR SCALE.

Lake Garda (368 km²) represents a key environment in northern Italy for biodiversity, tourism, and is also an important resource for drinking water supply and irrigation. The evaluation of the lake's vulnerability to human stressors within the current climate change emerges as a stringent necessity. Paleoecological methods were used to understand long-term ecosystem changes in Lake Garda. Two short sediment cores were collected from the deepest NW basin (Brenzone, 350 m depth) and in the shallower SW basin (Bardolino, 81 m). According to radiometric dating, the cores cover ~700 years. Analysis of the diatom assemblage indicated that stable oligotrophic conditions prevailed (diatom-inferred TP ≤ 4 $\mu\text{g/L}$) until the 1960's. Since the 1960's the planktonic composition changed drastically from oligo- to mesotrophic taxa as a result of the combined effects of nutrient enrichment (diatom-inferred TP ≥ 10 $\mu\text{g/L}$) and climate change. Specifically meso- to eutraphentic planktonic pennate and filamentous centrics increased. Analyses of cladoceran remains corroborated the diatom results. The study confirms the strength of the multi-proxi paleoecological approach to complement limnological investigations and to understand ecosystem changes at secular scale.

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DETAILS

Oral presentation

Session #:066

Date: 2/26/2015

Time: 09:15

Location: Albeniz (Floor -2)

Presentation is given by student: Yes



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