

Ostracoda, and other fauna and flora community of the Lake Sünnet (Göynük/Bolu, NW Anatolia); palaeolimnologic and palaeoclimatologic investigations of a 250 years-old record

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The Lake Sünnet is located between Göynük and Mudurnu towns of Bolu province (NW of Türkiye) and formed as a result of landslide-damming. The lake is situated 40 km south of the North Anatolian Fault Zone and is 1030 metres above sea level. It has a 0.1 km² surface and 11 km² drainage areas. The maximum depth of the lake is 14–15 meters.

The aim of this study is to determine the climatic changes recorded in the lake during the past 250 years. 14 ostracoda taxa have been identified from 25 bottom (grab) samples and 3 different cores (SK-1, SK-3, SK-4): *Prionocypris zenkeri*, *Cyclocypris laevis*, *Physocypris kraepelini*, *Candona candida*, *Candona neglecta*, *Limnocythere inopinata*, *Ilyocypris getica*, *Ilyocypris inermis*, *Ilyocypris bradyi*, *Doleocypris sinensis*, *Pseudocandona albicans*, *Cyclocypris laevis*, *Candona* sp. 1, *Candona* sp. 2. In addition to this, Gastropoda, Pelecypoda, Characidae, gyrogonites, pollen, diatoms, fish teeth, abundant reworked ostracods of different ages and foraminifers were observed.

Sedimentological, geochemical, mineralogical, isotopic and palaeontological and/or biological analyses have been performed on 68 samples which were collected at each 2 cm interval in the SK-2 core from the centre of the lake (no ostracods have been recorded from this core). This core whose base goes back to 1760 AD is divided in to five distinct periods, which showed different climates effects and lake level.

Wet and dry period alternations were determined by alternation of reddish and green muds or light brown and black muds along the core SK-1. Dry periods of SK-1 include more ostracod species diversity and abundance of individuals compared to wet periods. However, in contrast to SK-1 in terms of dry and wet periods alternations, SK-4 shows more species diversity and increase in the number of individuals during the wet periods.

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