Geophysical Research Abstracts
Vol. 18, EGU2016-16401, 2016
EGU General Assembly 2016

Sediment Characteristics of a High-Mountain Lake in South Central Anatolia, Turkey

Zeynep Ataselim (1,4,6), Suzanne Leroy (1), Alper Gurbuz (2,6), Esra Gurbuz (3,6), Tahsin Onur Yucel (4,6), Ozgur Yedek (6), Koray Koc (5,6)

(1) Institute for the Environment, Brunel University, London, UK (zergun@ankara.edu.tr), (2) Nigde University, Department of Geological Engineering, Nigde, Turkey (alpergurbuz2011@gmail.com), (3) Aksaray University, Department of Geological Engineering, Aksaray, Turkey (egurbuz@aksaray.edu.tr), (4) Ankara University,Department of Geological Engineering, Ankara, Turkey (tahsinonuryucel@gmail.com), (5) Akdeniz University, Department of Geological Engineering, Antalya, Turkey (korykoc@gmail.com), (6) Quaternary Research Group, Ankara, Turkey (ozguryedek@hotmail.com)

Lake Dipsiz is at the top of Mount Erenler, located 55 km west of Konya city in Central Anatolia, Turkey. Mount Erenler is the largest part of Central Anatolia Volcanic Province and consists of Miocene-Pliocene calc-alkaline lavas together with pyroclastic rocks and covers an area approximately 2000 km2. The peak of the Mount Erenler is at 1900 m while Lake Dipsiz is located at 1600 m altitude. Despite the small surface area (0.33 km2), the depth is relatively high (16 m). The drainage area of the lake is 8 km2. Although the topography of the lake points out to glacier presence, it formed as a landslide-dammed lake. Lake Dipsiz geographically is between mountainous Mediterranean region and Central Anatolia plateau. Climatically, the lake is in a transition zone between Taurids and Central Anatolia.

In this study, we investigated sedimentation in a high altitude lake at a climatic transition. For this purpose, three cores (D1, D2 and D3) which are 50 cm length are taken with a hand corer from the coastline of the lake. D1 and D2 cores are sampled in every 2 cm and D3 core is samples in every 1 cm. Geochemical, total organic carbon, magnetic susceptibility and total carbonate analyses were performed on all sample sets. Lake sediments are brownish/green clay and silt in composition. Despite the proximity of the sediment source, no sand or more coarse grains were observed in the sedimentary filling. Organic matter content is between 2 - 28 %. According to one 14C date, the sequence indicates a Late Holocene age. δ13C isotope values are between -28.9 and -25.3 ‰ and it means that the sediment composed of terrestrial C3 organic matter. The detrital input in the lake has increased in the last 1000 years. Sedimentation rate was low between 3000 and cal. 1700 BP to the contrary of significant increasing from 250 BP to nowadays. Our data show that the sedimentation in this high altitude lake is more sensitive to other environmental conditions rather than climate.