



Influences of climate and tectonic on the middle to late Holocene deltaic sedimentation in Lake Hazar, Eastern Turkey

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Analyses of two piston cores from Lake Hazar together with high resolution seismic data provide unique evidence of complex interaction of tectonics and lake level changes during the mid-to-late Holocene. This period is associated with stacked shelf-edge deltaic units at the mouth of the Kürkçayı River at the western extreme of the lake. Despite the general dry climate during the middle Holocene (between 8.2-5.1 Cal ka BP), transgressive and landward retreating deltaic successions developed due to the deepening of the lake that induced by transtentional activity of the East Anatolian Fault Zone (EAFZ). The arid climate during 5.1-2.6 Cal ka BP is supported by the multi-proxy analyses of the cores. This period coincides with the late Bronze-age deforestation, which probably provided the sediment supply by soil erosion for the deltaic deposition at the mouth of the paleo-Kürkçayı River. On the other hand, the flooding of the youngest deltaic unit in the lake took place under a general wet climate after 1.4 Cal ka BP. The seismic architecture and the core sedimentology indicate that the existing hydrological regime with the latest deltaic deposition started 2.6 Cal ka BP was accompanied by a hyperpyncnal mixing.

Key words: Hyperpyncnal delta, core studies, human impact, East Anatolian Fault