

## **Late Quaternary paleoenvironmental development of the Kızılırmak delta plain (Northern Turkey)**

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Kızılırmak River (1355 km), the longest river of Turkey, traverses the Central Pontides and forms a large delta into the Black Sea. Kızılırmak Delta (41°30 to 41°45' N, 35°43' to 36°08' E) is the biggest and the richest wetland ecosystem in the Black Sea Region of Turkey and covers an area of 56.000 ha that includes 15.000 ha of brackish marshes and swamps, coastal lakes, and lagoons.

To understand the Late Quaternary paleoenvironmental development we drilled a 130 m long core on the recent delta plain and analyzed the sediments by integrating microfaunal (Ostracoda and Foraminifera) and XRF data combined with radiocarbon dating. Furthermore, we applied and developed the morphological analysis (sieve pores, length and carapace thickness) of the dominating species *Cyprideis torosa* (Jones) to reconstruct the paleosalinity conditions as proxy for the delta construction and development.

We conclude that the lower section of the sediment core contains five transgressive and regressive cycles at 75 m, 67 m, 53 m (14.19 ± 40 ka 14C age; not reservoir corrected), 46 m, 41 m below recent sea level with brackish to limnic deltaic conditions on top of a pre-Last Glacial Maximum basement before the final Holocene transgression leading to a high sedimentation rate. The beginning of each regressive cycle is characterized by an increase of brackish marine taxa like *Tyrrhenocythere amnicola* and *Loxoconcha* spp. with a strong dominance of *C. torosa* followed by a decrease of the dominance of *C. torosa* and an increase of *Candona* spp., *Sarscypridopsis aculeata*, *Cypria candonaeformis* and *Heterocypris salina*. Subsequently, mesohaline lakes were formed between 11 and 8.5 m below recent sea level (7.21 ± 30 ka 14C age; not reservoir corrected) with typical liman species like *Amnicythere* spp. associations followed by a Mid-Holocene oligohaline lagoon that is strongly dominated by *C. torosa* developing to a mesohaline delta lake with an increase of *Candonidae* until the onset of a top peat layer.