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# QUATERNARY SUBMERGED LANDSCAPES IN THE NW BLACK SEA

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The NW Black Sea experienced during Quaternary several transgresion-regresion phases, mainly related to the sea level variations. The associated phenomena to the sea level events produced specific submerged landscapes that testify in a complex way this variability.

The sea level variations of the Black Sea during Quaternary still are debatable topic in many papers. These variations of the Black Sea basin in terms of coastal migration and water depths had an important impact, especially in the NW part, where the continental platform is the widest of this marine basin. During the Last Glacial Maximum (LGM) the Black Sea level lowered to about -150m compared to the present level of the sea. The entire NW shelf of the Black Sea has been subaerial for several thousands of years; during the low stand level, a network of rivers has developed on the present shelf area. Besides these rivers other features have developed at the level of the present seafloor but also as buried features, below the present sea bottom.

Some of these features are very important for mapping the former paleoshorelines, corresponding to different stages of transgressions-regressions that lasted long enough at a stable water level. The most common submerged feature that indicates a paleoshoreline is the wavecut terrace. Due to subsequent sweeping of the continental platform as the result of other variations, smaller than that corresponding to the LGM, not all the wavecut terraces are preserved on the shelf area. Besides the wavecut terraces, other features prone to suggest paleoshorelines, as are the dune fields, have been mapped, mainly on the external shelf area.

Close to the shelf break it is quite common to have alignments or fields of pockmarks; the pockmarks are submerged features, shaped as funnels, formed on the seafloor as local depressions of circular or ellipsoidal; these features testify active, dormant or paleofluid seeps, rooted in the shallow sediments, but sometimes with deeper origins.

Some linear features indicating neotectonic lines have been mapped; these features usually have a local development and are expressed at the level of the sea bottom as sudden variation of the local altitude of the seafloor and affect the bottom morphologies.

Sand ridges and other nearshore specific features have been followed on the detailed Digital Terrain Models (DTMs) of the seafloor.

Paleovalleys and local swamps have been mapped on large areas on the NW shelf of the Black Sea.

The geological interpretation of the submerged features is not straightforward, mainly due to the palimpsestic character of the evolution of the NW Black Sea shelf area during the Quaternary.

To map and characterize the submerged structures, the Multibeam Echosounding (MBES) equipment was most commonly used, but sometimes side-scan sonar and sub-bottom profiling techniques were applied.

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