

Controls on the Cretaceous – Tertiary reservoir distribution on the Northern margins of the Black Sea

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Early Cretaceous to Tertiary palaeogeographic reconstructions of the Northern Black Sea record the complex interplay between eustasy and tectonics and consequent changes in the palaeo-drainage patterns in the European continent. Clastic and carbonate reservoirs developed throughout the Northern Black Sea Basin at this time.

The Early Cretaceous rifting that affected the Western Black Sea led to deposition of widespread alluvial to shallow marine clastics. They form important reservoirs in the Ukrainian and Romanian sectors of the Black Sea. In the Eastern Black Sea, mixed shallow marine carbonates and clastics indicate more tectonically quiescent conditions.

During the Late Cretaceous, widespread carbonates were deposited throughout the area and are reflective of high sea levels. Carbonate deposition continued also during the Paleocene in the Western Black Sea whereas coarse clastic deposition initiated in the Eastern Black Sea following uplift of the East European Platform. The carbonates are important reservoirs in the Ukrainian sector. The Eocene section in the Eastern Black Sea south of the Kerch Peninsula shows a thick southwards prograding wedge of sediment on available seismic lines and these may form an important as yet undrilled target.

Oligocene to Lower Miocene clastics dominate the northern Black Sea. Thin sandstones are interbedded with the widespread organic-rich mudstones of the Maikop Series. Sandstone distributions show the influence of palaeo-drainage patterns of large scale fluvial systems draining the East European Platform and the uplift events in the Caucasus and Crimean mountains.

Late Miocene to Pliocene clastic deposition in the Northern Black Sea was influenced by the palaeo-Danube system and drainage systems originating in the Caucasus and Crimean mountains. These clastics form important reservoir rocks in the Romanian sector. The Ukrainian sector is dominated by carbonates and marls, which form secondary reservoir targets.