

Mesozoic-Tertiary Evolution of the SW Black Sea Region

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The Mesozoic–Tertiary evolution of the SW Black Sea region was governed by geodynamic processes affecting the northern margin of the Tethys. The Moesian Platform forms part of the northern Peri-Tethyan shelf system. It is fringed to the North and South by two rift branches of the Meliata-Maliac ocean - the North Dobrogea and the Eastern Srednogie-Balkan rifts, respectively. In the Eastern Srednogie-Balkan zone the southern margin of the Moesian Platform was repeatedly affected by Mesozoic rifting cycles: during the Late Permian-Early Triassic, the Late Triassic, the Early Jurassic and the Late Cretaceous. These cycles were interrupted and followed by compressional events, causing strong shortening of the southern margin of the Moesian Platform and ultimately its overprinting by the Alpine orogene.

The Late Triassic, Early and Middle Jurassic sedimentary record and evolution of the Eastern Srednogie-Balkan zone shows some similarities with the South Crimea-Küre back-arc flysch basins in the Western Black Sea region. On these grounds we assume the Eastern Srednogie-Balkan zone as a western periphery of these basins.

During the Turonian-Campanian, as a result of progressing northward subduction of Vardar oceanic crust, magmatic activity and depocentres in the evolving Late Cretaceous volcanic island arc migrated northward in tandem with increasing K-alkalinity. Back-arc rifting commenced during the late Santonian to early Campanian, probably as a result of steepening and roll-back of the subducted oceanic slab. The incipient back-arc rift was probably an aborted branch of the Black Sea rift system. Toward the end of the Campanian, subduction ceased, back-arc extension and magmatic activity died out.

Following final closure of the Vardar ocean, compressional stresses built up during the late Campanian-Maastrichtian and finally, major Mid-Eocene compression shaped the present-day structure of the Alpine orogen.