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## Sea of Marmara as the Passage Way between the Black Sea and the Aegean Sea



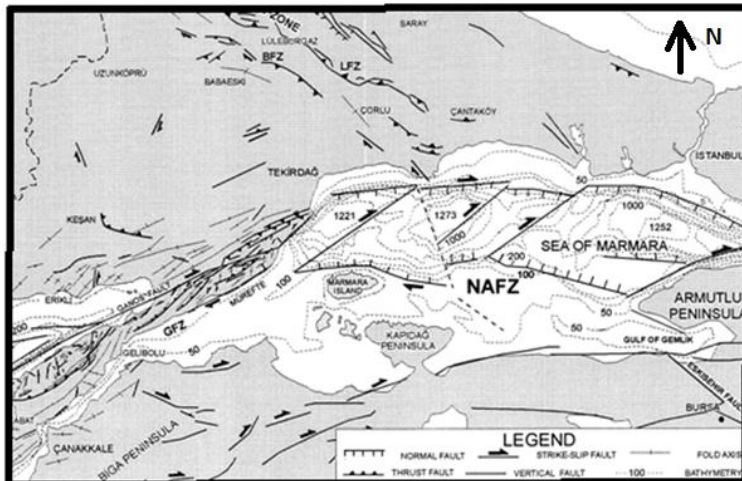
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The Aegean Sea, the Marmara Sea and the Black Sea are deep, semi - enclosed, marginal marine basins located in the eastern Mediterranean region between ca. 34.5°E and 46°N latitude. The Black Sea is connected to the eastern Mediterranean Sea through a network of narrow and shallow channels (Straits of Istanbul = Bosphorus and Strait of Çanakkale = Dardanelles) and the Marmara Sea [1], via a small transtensional depression along the North Anatolian Transform Fault [Fig.1].

There are three main basins; the western basin, the central basin and the Çınarcik basin in the east. The timing and causes of reconnection of the Black and Mediterranean seas during the Holocene sea-level rise has particularly important implications for European and Middle East archaeology in addition to palaeoclimatic reconstruction and sedimentology. All of the basins in the Marmara region opened by the NAFZ have features of representative of an early neotectonic period. Therefore, even while each of these basins opened due to different tectonic processes, they are consistent with each other within the context of the regional tectonic framework.

The general morphological character of the Marmara Sea can be defined by two main features: one being widespread shelf areas which are flat and mainly wider in the southern part; the other feature is the Marmara Trough including all the morphological units from shelf break to deep basins. The Marmara Trough consists of basins, ridges, and slopes that accommodate canyons and landslides [2]. Contrary to the shelf area, complex and irregular morphology of the Marmara Trough clearly reflects that it has been extensively modified through time by active tectonics, compared to the shelf morphology. The sediments covering the floor of the northern Aegean Sea-Çanakkale Strait-Sea of Marmara-Istanbul Strait-southern Black Sea transitions are the result of varying conditions in fluvial inputs, sea level changes, benthic production and hydrography which lasted during the Quaternary [3].



*Figure 1: Domains of the Sea of Marmara between the Black Sea and the Aegean Sea*

References:

- [1] Aksu A.e et al. (1999) Marine Geology 153:275-302
- [2] Bayhan E. Et al. (2001 Marine Geology 175:297-315
- [3] Gazioglu C et al.(2002) Marine Geology 190:397-420

