ID: W2890104908

TITLE: The Coasts of Turkey

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ABSTRACT:

The Turkish peninsula is surrounded by four seas with different hydrodynamics, biogeochemical properties, and ecosystems; the Mediterranean to the south, the Aegean to the west, the Sea of Marmara between the European and Asian land masses, and the Black Sea to the north. The coastline of Turkey spans > 8000 km in length. Within these marine areas lies an abundant, highly diverse, and globally significant biodiversity. Overall, some 3000 plant and animal species have been identified in Turkey?s territorial sea, including some 480 species of marine fish. The Black Sea is particularly eutrophic, the Sea of Marmara and its gulfs show eutrophic conditions, and the Aegean Sea and Eastern Mediterranean are oligotrophic water bodies due to their limited nutrients. The most important feature distinguishing the Black Sea from other seas is that the deep basin waters below the oxygenated layer on the surface are permanently anoxic and contain hydrogen sulfide at elevated concentrations toward the center of the basin. The Turkish Straits System (TBS), consisting of the Marmara Sea and the Istanbul and Çanakkale Straits, is a small but dynamic two-layered ecosystem that is situated between very different water masses. While the less saline water of Black Sea origin is located in the upper part of the water column, more saline Mediterranean waters from Çanakkale is found at the bottom. The Mediterranean is more dynamic compared with other seas of Turkey and effective vertical mixing ensures that the water column is oxygenated to the bottom even in the deepest basins. The Aegean Sea has > 2000 islands forming small basins and narrow passages, and a very irregular coastline and bathymetry. Physical oceanographic characteristics of the Aegean Sea are influenced by local atmospheric forcing. All coasts of Turkey (especially the Sea of Marmara) are under the influence of intense terrestrial inputs, and significant changes have been observed in marine ecosystems over the last 40 years.

SOURCE: Elsevier eBooks

PDF URL: None

CITED BY COUNT: 1

PUBLICATION YEAR: 2019

TYPE: book-chapter

CONCEPTS: ['Oceanography', 'Water column', 'Mediterranean sea', 'Mediterranean climate', 'Structural basin', 'Water mass', 'Black sea', 'Mediterranean Basin', 'Eutrophication', 'Peninsula', 'Biogeochemical cycle', 'Marine ecosystem', 'Ecosystem', 'Environmental science', 'Geology', 'Fishery', 'Geography', 'Ecology', 'Nutrient', 'Biology', 'Paleontology', 'Archaeology']