

Establishing physiographic provinces for an integrative approach of the coastal zone management - The case of Rhodes Island, Aegean Sea, Greece

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The coastal zone is a dynamic natural system affected by terrestrial and marine processes as well as human intervention. The sediments derived by the land and supplied by the adjacent catchment are reworked and distributed according to the prevailing hydrodynamic regime.

Based on inland and coastal physiography of Rhodes Island, six (6) main Physiographic Provinces were identified, which incorporate 56 main drainage basins and 168 interfluves. Moreover, the variety of coastal types was mapped and the total length of the island's coastline (~285 km) was measured by using geospatial tools (ArcGIS and Google Earth). The coastline is comprised of depositional sandy beaches (44.5%), rocky coasts (47%) and coasts altered from anthropogenic constructions (8.5%).

The Physiographic Provinces were defined in order to facilitate an Integrated Coastal Zone Management (ICZM) scheme for Rhodes Island and also adaptation measures.

Overexploitation of the island's natural coastal environment by the tourism industry, mainly in the northern and northeastern parts of the island, left a series of adverse effects on the coastal area, such as erosion of beaches, water and energy overconsumption and land degradation.