

From archipelago to floodplain – geographical and ecological changes in Miletus and its environs during the past six millennia (Western Anatolia, Turkey)

by

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with 5 figures and 2 tables

Summary

During the past six millennia, the famous ancient harbour city of Miletus and its environs have experienced major changes in palaeogeography and palaeoecology, related to (a) the progradation of the Büyük Menderes river delta, (b) fluctuations of sea level associated with the post-glacial marine transgression, and (c) the permanent impact of humans on the ecosystem since Late Chalcolithic times. In this paper, we present new results of our geoarchaeological research in and around Miletus examining palaeogeographical changes and their relation to human settlement activities over different historical periods. Palaeoecology of both coastal and terrestrial environments were reconstructed by sedimentological, foraminiferal, archaeozoological and palynological criteria. Analyses of sediment cores collected around the Temple of Athena revealed that sea level reached its highest level during the Early Bronze Age. A similar pattern is evident on the southern fringe of Lion Harbour embayment, where cultural debris from the Late Chalcolithic period is covered by shallow marine sediments. In the Middle and Late Bronze Ages, the introduction of the goat by the Minoans was a major factor in the progressive degradation of climax vegetation (open deciduous oak forests) which resulted in increased soil erosion and associated sediment accumulation in the coastal zone. These environmental changes, together with the fall in relative sea level, contributed to the rapid transformation of the Milesian archipelago to the Milesian Peninsula during the second millennium BC. Siltation caused by progradation of the Maeander Delta since Roman Imperial times largely infilled the harbours of the city and subsequently integrated the peninsula into the floodplain.