



The Effects of Geomorphologic Changes on the Ancient Western Anatolian Coastal Civilizations since the Last Glacial Age

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The main goal of this study is to present the interrelations between the antique cities built on the ancient deltas and the sea level changes in association with the glacial periods around the shorelines of Turkey by the Aegean Sea. The Aegean Sea is surrounded by the coastal part of Eastern Greece, Western Turkey and Crete where the cultural foundations of the modern world emerged. The current geomorphological conditions of the Aegean Sea are resulted from three main parameters: the tectonics, volcanic activity and the sea level changes (eustatic changes). The eustatic conditions due to the alternation of the glacial and interglacial periods, caused transgressions and regressions and interrelations of the land connections between them. During the Holocene, at the end of the last glacial period, the sea level rises and the Aegean region gradually acquired its current geography. The Eastern Aegean islands were separated from Anatolia and the Cyclades islands were permanently isolated from one another.

There are two distinct types of continental shelves within the Aegean Sea: (i) narrow part (1-10 km) and (ii) broader (25-95 km) part of the shelves. The broad shelves are located predominantly along the eastern and northern shorelines of the Aegean Sea. The shelf-break in broad shelves is observed between 95 and 120 m water depth and denotes the topset to foreset transitions of deltas prograded during the end of the last glacial period, immediately prior to Holocene transgression. Almost all these deltas hosted the residential areas of the ancient civilizations for centuries, because the east-west running rivers of Western Anatolia have filled large areas while discharging.

There are many deltas in the Western Anatolia including antique cities related with them such as: Karamenderes (Troia), Bakircay (Pergamon and Elaia), Gediz (Smyrna and Phokaia), Kucuk Menderes (Ephesos), Buyuk Menderes (Miletos, Magnesia, Prienne and Tralleis). The common language of this region was known as the Luwian language (there are some ideas that this language is the origin of many European languages), because the place names of this part of the Anatolia down to the Mediterranean coasts to the south were derived from this ancient language. Indeed, these people eventually moved through the relatively high land occurrences presenting better living conditions and environments along the valleys and rivers after the last glacial period. The historians and archaeologists need knowledge about the geographical and geological changes in the Holocene time in association with the climate change in order to define the massive migrations of ancient societies and the cultural transformations. Therefore, this study will serve as a basis for the further historical studies in the Aegean region and indirectly for the European culture.