

## MARINE RESOURCES IN THE EARLY NEOLITHIC OF THE EASTERN MEDITERRANEAN: THEIR RELEVANCE TO EARLY SEAFARING

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Marine resources and especially molluscs are encountered from the Palaeolithic, as are freshwater fish. There is little evidence for shellfishing in the Levant, and fishing of marine species, began in the Early Natufian (ca. 15ka). An examination of fish and mollusc exploitation before and during the Neolithic period, as proxies for interaction between humans and the marine environment, enhances our understanding of how and why southwest Asian populations migrated to Cyprus.

A survey of the fish collected in the eastern Mediterranean during the early stages of marine fishing reveals that these were mostly shallow water, lagoon, and brackish water fish. Those include sea breams (Sparidae), mullets (Mugilidae), sea bass (*Dicentrarchus*), groupers (Serranidae), etc. Larger fish and fish from deeper waters such as barracuda (*Sphyraena*), tuna (*Thunnus*), and mackerel were not found in the Levant, but were found in later stages in the Aegean and Cyprus. Fishing of large pelagic fish such as tuna does not necessarily mean fishing from a boat as because they breed near shore. During the PPNB of the Levant there is no evidence for Mediterranean fishing. Rather, fish were obtained from the Nile River and the Red Sea. This suggests that fish were a desired food, and coastal marshes may have inhibited fishing activities, but the fishing village discovered at Atlit Yam, dated to the PPNC, testified to renewed fishing activity when it was possible. This may hint at yet another motivation for exploring the seas, i.e., PPNB fishermen were looking for other territories. Furthermore, the fishing of triggerfish at Atlit Yam, may have been not only for their use as food but also for use of their skins for wood polishing, possibly for construction of seagoing vessels.

The evidence for shellfishing in the Levant is scarce, and if shell middens existed, they are now submerged. But some *Patella* shells at the Natufian el-Wad cave and Terrace suggest their possible consumption. Better evidence for shellfishing in the Pleistocene/Holocene transition period is available at Franchthi cave and along the Italian coast, as well as Sicily and Sardinia. The preferred species are usually the gastropods *Patella* and *Osilinus*, inhabiting the upper littoral on rocky shores. The presence of these species on the early coastal sites of Cyprus, and their absence in inland sites on the island may suggest that they served as interim food after landfall and before terrestrial fauna and flora could be relied upon.

Shells which served as ornaments, discovered at Shillourokambos point to a similarity in choice of species between the Levant and Cyprus. More interesting is the difference between this selection and that of the Levant: All assemblages in Cyprus contain *Charonia*, the trumpet shell, and these are not present in the Mediterranean sites. This shell may have served for signaling during navigation and for alerting from invaders on land.

The familiarity of humans inhabiting coastal sites with the marine environment as a source of both food and raw materials, both motivated and enabled seafaring in that it assured the provision of food during voyages and immediately after landfall. Triggerfish and *Charonia* shells seem to be especially valuable resources in giving us clues for understanding these voyages.