



## **Re-assessing the last 3,000 years of archaeological and biological sea-level data from Israel and Greece to identify East Mediterranean trends.**

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The last 3,000 years of relative sea level (RSL) in Israel are derived primarily from archaeological indicators with additional bio-construction indicators (*Dendropoma petraeum* reefs at the edge of the abrasion platform along the Israeli coast). The current study examines whether sea-level fluctuations (above and mainly below present-day MSL) observed along the coast of Israel can also be observed in other East Mediterranean areas like Greece so that better evaluations can be made of local and regional driving mechanisms. There are three objectives for achieving this goal: 1) Identify new and already published archaeological and biological RSL indicators from this period in Israel and Greece; 2) Assess the reliability of both existing and new indicators using consistent standards to determine which types most accurately indicate ancient RSL and with what degree of uncertainty; 3) Correct the data for isostatic and tectonic effects.

The survey collected nearly 140 archaeological indicators from Israel and about 120 from Greece. Of the Israeli indicators, some 120 were deemed reliable enough for reconstructions, whereas in Greece only 40 were, and not all of these from tectonically stable areas. The Israeli data includes 31 dates obtained from *Dendropoma* reefs in Israel. The higher reliability of the Israeli dataset may stem from a smaller coastline and more focused SL research over the past few decades. In Greece, many measurements were taken before precise surveying methods were available, and published without sufficient metadata. The two regional datasets reveal chronological gaps and disparities: Israel has a strong set of many indicators from the Roman Period (~2000BP) to present, but fewer from 3000-2000BP, while Greek indicators are strongly clustered in the Classical to Hellenistic Periods (2500-2000BP). On-going research is focusing now also on the last Millennial Greek sea levels (mainly the 'Venetian' period). Results however suggest some correspondence and support previous Israeli conclusions suggesting somewhat lower levels around 2500BP and in the first half of the last Millennium: The Crusader period in Israel (11th to 13th century AD) and the Venetian period in Greece (12th to 15th century AD). Near-present, stable levels are indicated during most other periods, despite indications of slightly higher sea levels in the late Roman/Byzantine period.