

The Role of the Relative Sea Level Changes on the Quaternary Evolution of the "Mar Menor" (Murcia, Spain)

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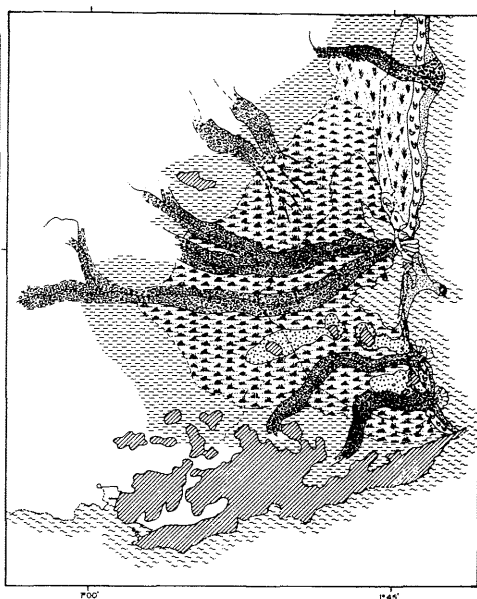
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Mar Menor is a simple coastal-lagoon in the southeastern end of the Iberian Peninsula (Western Mediterranean). Its origin is related to Flandrian transgression, and can be interpreted as a residual coastal-lagoon (DIAZ DEL RIO, 1989). It's underlain by Plio-Quaternary sedimentary sequences prograding seaward, developing the continental margin in the area. High-resolution seismic profiling, aerial reconnaissance studies, vibrocores and sediment samples have been used to interpret the Quaternary history and evolution of the system.

The sediments in the bottom are dominated by mud-size clastics and bioterritic materials, mainly from mining wastes. Only the borders are dominated by sandy sediments, forming the barrier and the land edge.



The thickness of the recent sedimentary units shows high variability, between 1 and 12 meters. The seismic reflectors are generally characterized by strong signals separated by an acoustic reflection (at the base of the series) having a large lateral extent, interpreted as a Tyrrhenian basal level.

Variations in sea level, in this case glacio-eustatic, display a high morphology variability on the coastal-lagoon, as well as in the barrier (SOMOZA, 1989; NICHOLS, 1989). The effect of relative sea level changes, as far as it relates to the construction of the youngest barrier, is the landward migration of the beach simultaneous to an expansionary lagoon.

Based on seismic-reflection data, and assuming a Tyrrhenian-III age (based on regional stratigraphic studies in the area) for the basal level, it is possible to estimate a sedimentation rate close to 1.2 mm/y - 2 mm/y, for the last 80.000 years.

As a result of a relative drop in sea level, 18.000 years B.P. (minimum regressive), a fluvial-torrential system was placed in the lagoon, developing a marsh system in the back-barrier. In the mouth of the channels fluvial sediments could be deposited constructing submarine lobes, composed by coarse sand and gravels. These sedimentary bodies, can be seismically recognised in the inner continental shelf.

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