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## Messinian marine environments of the eastern Mediterranean

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Decennia after recognition of the actual magnitude of the salinity crisis affecting the Mediterranean area, the sequence of events preceding the late Messinian evaporative episode is still not fully resolved. With the present accuracy of integrated dating methods (bio-, cyclo-, magnetostratigraphy) we have the opportunity to place important bio-events within a well-constrained time frame. By now the commonly accepted scenario is that severance of the Betic and Rif Corridors (SE Spain and NW Morocco, respectively) isolated the Mediterranean more or less completely from the Atlantic during the late Messinian. Deep-water ventilation collapse reconstructed from benthic biota and stable isotopes is already evident just after the Tortonian-Messinian boundary, most clearly in deeper waters and is more or less time-equivalent with uplift in the area of the Rif Corridor.

Surface water biota were also increasingly affected by the hostile environments developing prior to the salinity crisis, but it appears that these effects started somewhat later. The complex configuration of the Mediterranean with silled sub-basins appears, in the onset towards the MSC, to have been extremely sensitive to relatively minor sea level fluctuations that may have been orbitally controlled.

This paper focuses on pre-Messinian environments of the eastern Mediterranean and aims at an integration of different biotic records.