



## **Inconsistencies in coastal dune genesis and development in the western Mediterranean Cabopino Dune system, southern Spain**

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It is generally agreed that a falling sea level regime is required in the long term to establish dunes as distinctive landform features along a coast. Sedimentary (supply) bodies from fluvial, glacial sources or marine platform processes also need to be in place. In most Atlantic-facing coastal dune systems the current morpho-sedimentary structures are usually associated with the period between 18K BP and present when both glacial and riverine sediments emplaced sediments within the active zone of present sea level to help form beaches and dunes.

Mediterranean coastal dunes fronted by steep continental shelves, such as in the western Mediterranean coast of southern Spain are, however, not associated with glacial deposits and thus are only present in association with river mouths and/or coastal lagoons. Their development is attributed to very recent sediment supply, which, combined with other forcing factors such as wind and waves, several orders of magnitude below those of north Atlantic systems, explains their limited extent. Some coastal dune fields however, do not seem to respond to this general pattern because of their scale and, more importantly, their origin linked possibly to marine platform processes rather than riverine or lagoonal development.

Here, we examine the Cabopino dune system in southern Spain offering a conceptual model of their genesis and development as an “Atlantic” dune system within a Mediterranean setting. This is demonstrated by their scale (the largest in the Spanish Mediterranean) and their morphodynamic link to nearshore and platform processes in the last 18,000 years.