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Changes in human settlement during the Mesolithic of SW Iberia motivated by the rapid inundation of the coast

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The transition to the Late Mesolithic (c. 8.4-7 ka) in SW Iberia has been characterized as a period of profound reorganization of human settlement. Such reorganization affected various aspects of cultural behaviour and was reflected by a tendency toward a more permanent settlement, changes in the mobility patterns of the human groups and the creation of the first burial grounds. These changes were concomitant with the apparent abandonment of coastal areas and the displacement of people toward the interior of newly formed large estuaries. The motivation behind such changes has been traditionally related to environmental conditions, in particular to the occurrence of the 8.2 ka cooling event whose impact in the landscape and the availability of resources would have been abrupt in these southern latitudes. Here, we revisit all the existing archaeological evidence for the time interval encompassing 11 and 7 ka in order to environmentally frame this behavioural change, paying particular attention to the settlement spatial distribution with regard to the configuration and position of the ancient shoreline and combining this information with environmental reconstructions available for this time interval. The integration of this information suggests that after 8.5 ka the sediment depleted coast north of Lisbon seems to have been abandoned, while the SW Alentejo coast continued to be occupied during the Late Mesolithic. The occurrence of abundant top-cliff dunes along this southern littoral fringe suggests a less sediment starved coast than the northern one that could accommodate wide sandy coastal plains, inviting human communities to continue exploiting sea resources. Conversely, the northern coast appears to have been abandoned due to the rapid sea-level rise that would have flooded the coastal plain, forcing the rapid retreat of this starved and unstable coastline. Simultaneously, the inundation of the coast between 11 and 7 ka created optimal conditions in the innermost areas of the large estuaries, attracting people to these rich and more

stable environments. Such circumstances would invite people to gradually move to these new locations and to use coastal settlements mostly for logistic purposes where accommodation space for their activities was available. The latter also suggests that the perception that these communities had in relation to the coastline was completely opposite to ours. For them, the coast was an important element to fulfil their diet, however, the location of their settlements relative to the ancient coast suggests that they perceived the coast as an unstable and unsafe area, which motivated them to always keep a distance or only occupy the area unaffected by such instability. In addition, their occupation attitude, based on adaptation to the landscape rather than the opposite, explains their tendency to retreat from the mobile and unstable coast. It is worth mentioning that the latter hypothesis can be partially biased because of gaps in the archaeological record, in particular because of the lack of underwater archaeological explorations, which may hide an additional and relevant part of this history.

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