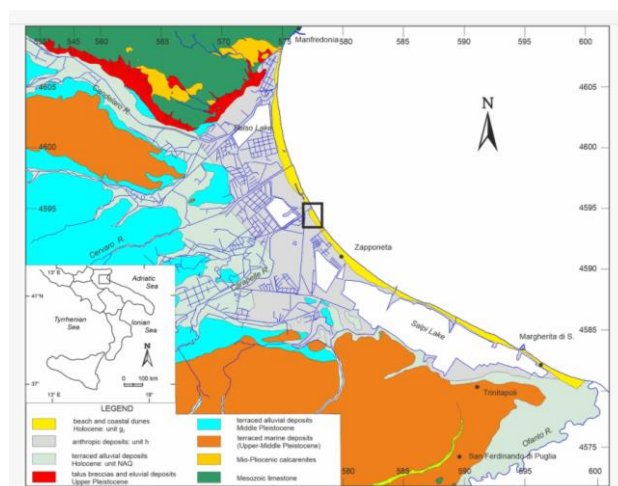


Construction of a deltaic strandplain during the Roman period in the Tavoliere di Puglia plain and palaeoclimatic implications

Summary

In response to the accidental exhumation of three ancient trees by farmers, we conducted a multidisciplinary study based on the stratigraphic analysis of boreholes, carbon-14 dating, aerial photo interpretation, and analysis of palaeobotanical and archaeological evidences. We reconstructed the formation and evolution during Roman times of a first “continuous” and then “discontinuous” deltaic strandplain at the mouth of the Carapelle Stream in the Tavoliere di Puglia Plain—the second-largest plain in Italy. Two main phases can be recognised in the evolution of the Carapelle deltaic strandplain: 1) a first phase, lasted until ca. the birth of Christ, was characterised by a regular and continuous construction of sand ridges one leaning against the other; 2) a second phase, lasted more or less from the birth of Christ to the termination of the construction of the deltaic strandplain, was characterised by the discontinuous construction of sand ridges/coastal barriers with the isolation of lagoons/ponds, and by evidences of alluvial events. The most probable climatic–environmental scenario to have formed the Roman-period deltaic strandplain implied that: 1) the first phase was triggered by a higher total amount of precipitations, but with less extreme alluvial events; 2) the second phase was triggered by a total amount of precipitation lower than the previous period, but with higher occurrence of extreme alluvial events and/or by extreme alluvial events separated by longer period of low precipitations. This second phase was enhanced by the opening of vegetation. The passage between the first and second phase of the Carapelle deltaic strandplain coincides with the passage from overall negative NAO index to an overall positive NAO index.



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