Early Holocene socio-ecological dynamics in the central Mediterranean region of Iberia

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Abstract

Over the past few years, an increasing body of palaeo-ecological and palaeo-environmental evidence indicates that the Early Holocene was a period of significant climatic instability in the Western Mediterranean. In the central Mediterranean region of the Iberian Peninsula, lake records indicate centennial scale climatic fluctuations along the Early Holocene warming, with a recurrent pattern of aridity events. In addition, the sea level rise dramatically transformed coastal landscapes and seascapes, flooding the coastal plains and changing configuration of littoral biotopes.
This contribution discusses Mesolithic adaptations to this changing scenario in the central Mediterranean region of Spain. Particularly, we focus on the relationship between Early Holocene climate and palaeo-environmental changes with human socio-ecological systems (specially settlement dynamics and subsistence patterns through the integrated analysis of open-air residential sites and lake records from inland and coastal areas. On one hand, we present the first results of the recent excavations at the lakeside site of the Arenal de la Virgen site, in the Upper Vinalopó Valley (Villena, Alicante) in the context of the ERC project Paleodem (ERC-CoG-2015 Ref.683018). New fieldwork undertaken in 2017 has broaden the excavation area up to 100 m2 uncovering a palimpsest of lithic scatters and occupational features dated between 9.3 and 8.4 ky cal BP. A new inter-disciplinary program consisting on geoarchaeological studies (stratigraphy, micromorphology and pedology), palaeo-environmental geochemistry, palaeo-botanical analyses and radiocarbon dating, has been developed to better constrain the correlation between changes in occupational intensity and palaeoenvironmental dynamics in inland locations.

On the other hand, in the south of the Valencian gulf, we present a synthesis of our current work on the bio-archaeological collections (shell and faunal assemblages) of the Mesolithic site of El Collado (Oliva, Valencia) whose archaeological sequence has been subject of a new Bayesian chronological model. In addition, we present the preliminary results of the palaeoecological research carried out in the Pego-Oliva wetland, in the context of the Marie Curie

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project Medcores (H2020-MSCA-IF-2015 Ref. 704822). New coring fieldwork undertaken in 2017 has provided new sedimentary and chrono-stratigraphic evidence to reconstruct Early to Middle Holocene relative sea level changes and the morphogenetic evolution of past coastlines.

Our preliminary results suggest a significant increase on land use and economic intensification along the Early Mesolithic, especially during an Early Holocene sub-period of climatic stabilization. In contrast, the Late Mesolithic witnessed significant changes on settlement distribution and land use patterns due to the variable effects of the 8.2 kya cal BP event and the reduction of coastal wetlands.

Keywords: Early Holocene, Mesolithic, Settlement, Paleoecology, Radiocarbon, Mediterranean