Mediterranean vegetation change, landscape dynamics and human population trends through the Holocene

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The Mediterranean landscape has undergone significant changes throughout the Holocene. This research utilises large databases of modern pollen (Davis et al., 2013) and fossil pollen from sediment cores (Leydet et al., 2007-2017) as a proxy for vegetation change. Radiocarbon-led archaeological population proxies (Shennan & Edinborough, 2007) and settlement surveys are used to compare vegetation change with demographic trends. Cluster analysis and phytosociological classification of pollen datasets have revealed numerous closed forest/wooded vegetation types (e.g. evergreen and deciduous oak woods) and several open or scrub vegetation types (e.g. sclerophyllous scrub, steppe, grassland, parkland) (Fyfe et al., 2018). Pollen-inferred landscape change indicates both short and long-term variability, which reflects temporal variations in climate, human land use and ecological dynamics. The results indicate that the Mediterranean has been a dynamic landscape throughout the Holocene with frequent changes in land-cover and persistence of disturbance and drought-adapted plant assemblages within an extensively human-modified environment. The pollen-inferred vegetation patterns and archaeological-inferred demographic trends will be compared with palaeo-fire and palaeoclimate datasets in order to explore the drivers of disturbance in time and space within Mediterranean ecosystems. This broad-scale data synthesis will allow questions regarding the extent to which the Mediterranean is a naturally dynamic and disturbance-adapted landscape or extensively culturally modified to be explored.

References:

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