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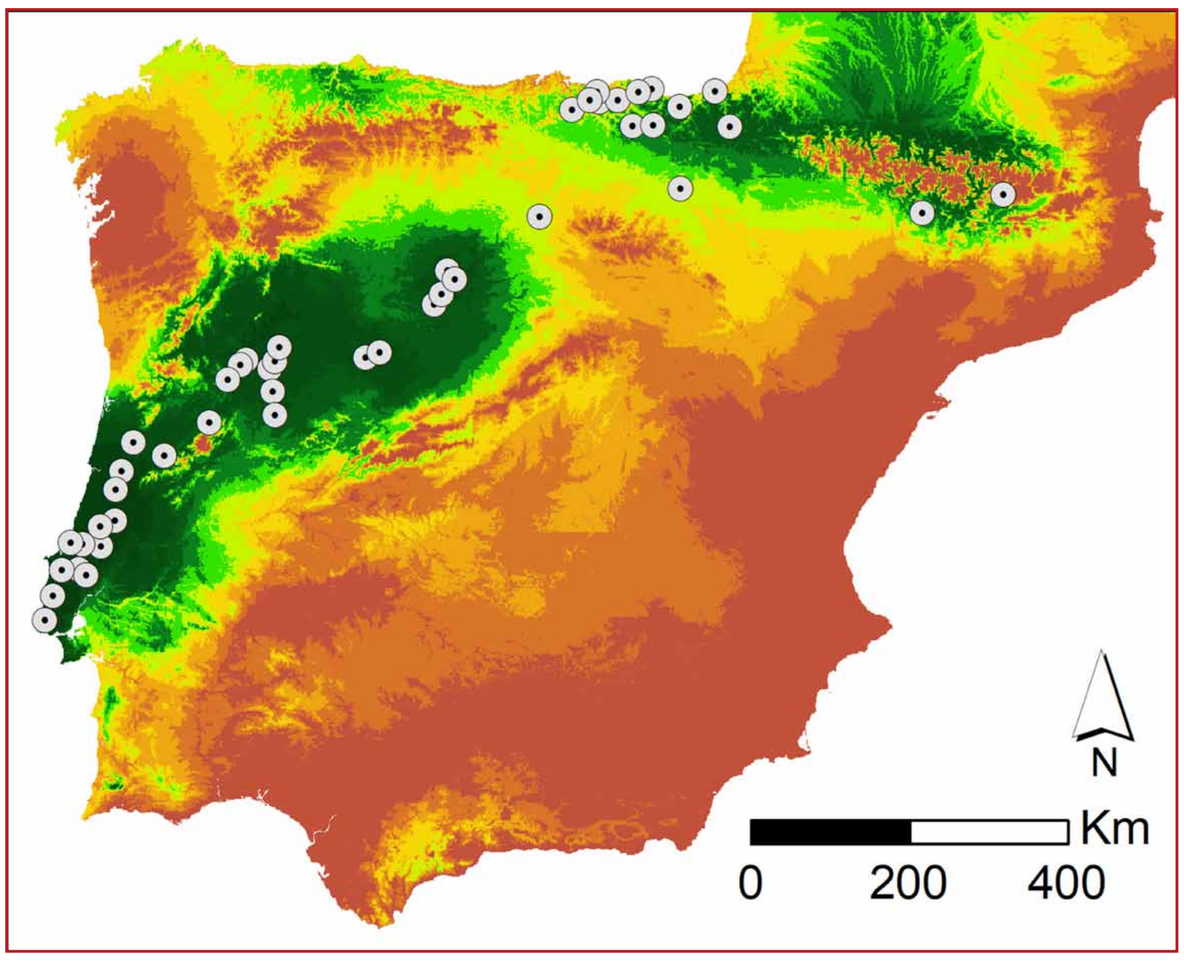
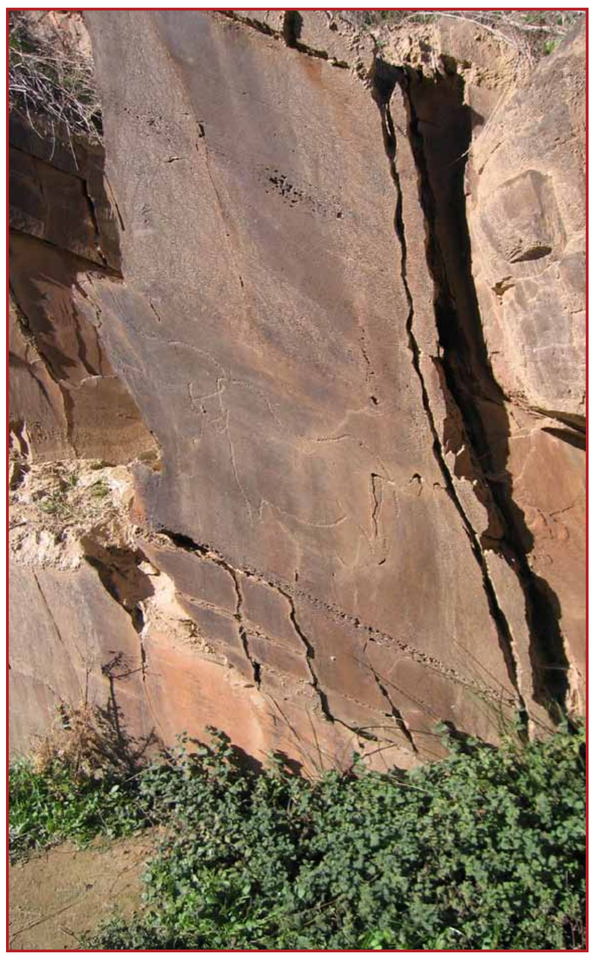
Rock art, vegetation and animals in the corridor Castilain-Leonese / Portuguese Extremadura research





Introduction

Recent studies of lithics from excavation-levels dating to the Upper Palaeolithic period (30,000 – 8000 years ago) indicate the likely existence of a migratory corridor between the Castilian-Leonese plateau and the Portuguese Extremadura (Aubry *et al.* 2014). Similarities in rock-art imagery in caves and the open air from this period found along this corridor suggest frequent use of the route during the Upper Paleolithic. The authors tested a correlation of the corridor with pasture for herbivores like the horse and the auroch. Available climate information for the Holocene Climate Optimum (HCO) provides evidence for a potential thermopluviometric corridor during the later period of the Upper Palaeolithic. This type of information could be a crucial to consolidating the hypothesis of a great migratory route. This would lead human populations to use this natural route periodically, and so access the faunal resource essential as food for their survival.

Object

Using available climate information for 8000 years ago (Holocene Climate Optimum), the authors intend to show the existence of a potential thermopluviometric corridor with extensive pasture perfect for feeding herbivores. This is crucial to consolidating the hypothesis of a great Palaeolithic migratory route used periodically by human populations to follow faunal resources.

Methodology

The process begins with points (sites) where human presence is known from previouse studies (Pérez-Olbiol 2011; Aubry *et al.* 2014). It does so on a premise there would be pastures in zones that had herbaceous vegetation in sufficient quantity to feed large animal groups. Much, if not most of the rock-art depict figures such as aurochs, deer, Pyrenean goats and horses. Populations would hunt these animals. From this, it is possible to model the potential distribution of habitats in the Iberian Peninsula at the end of the Holocene Climatic Optimum (HCO) about 8000 years ago.

Four environmental variables come under scrutiny: altitude; minimum temperature; maximum temperature and precipitation (the last 3 with monthly values). Data came from the WorldClim website (http://www.worldclim.org/; Hijmans *et al.*, 2005).

Maxent software helped develop a potential distribution model to predict habitat location based on environmental variables (Phillips *et al.*, 2006).

Results show a gradual climatic differentiation with potential for pasture sustainability: 76 mm precipitation intervals, 7˚C for maximum temperature and 7.2˚C for minimum temperature.

Modeling past climate scenarios contributes to the hypothesis that Paleolithic nomadic routes have been much broader than supposed to date. An Iberian arch between southwestern France and Portuguese Extremadura, through the Pyrenean and Cantabrian mountain ranges and the Transmontano-Duriense region suggests an extensive and a consolidated human migratory dynamic. Hunting demand in a gradually changing landscape, where grassland and shrubbery are gaining ground, allows for greater access of herbivores in increasingly complex ecosystems.

Such circumstances would force human populations to travel ever longer distances to find their basic foodstuffs.

The altitudinal profile of this corridor proves to be the most accessible as it saves the Iberian transverse ranges without having to cross high elevations.

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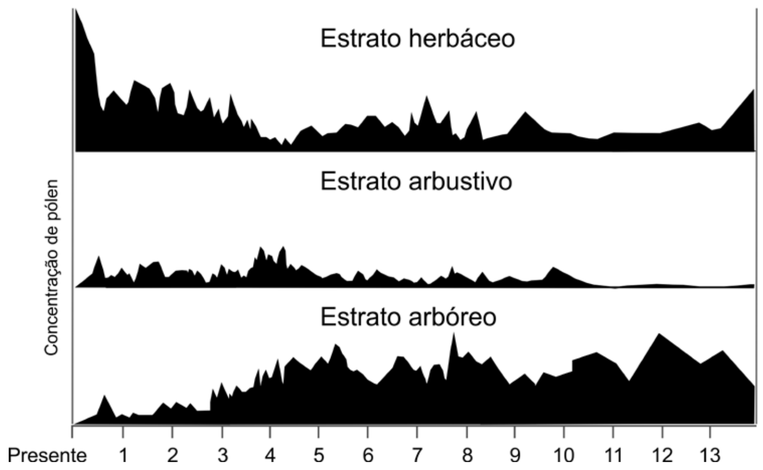

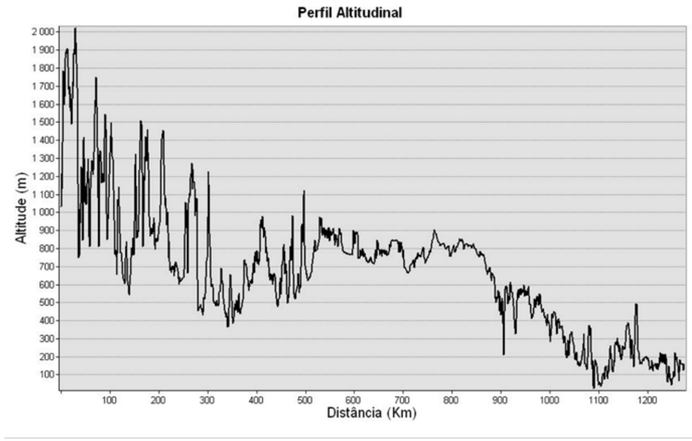

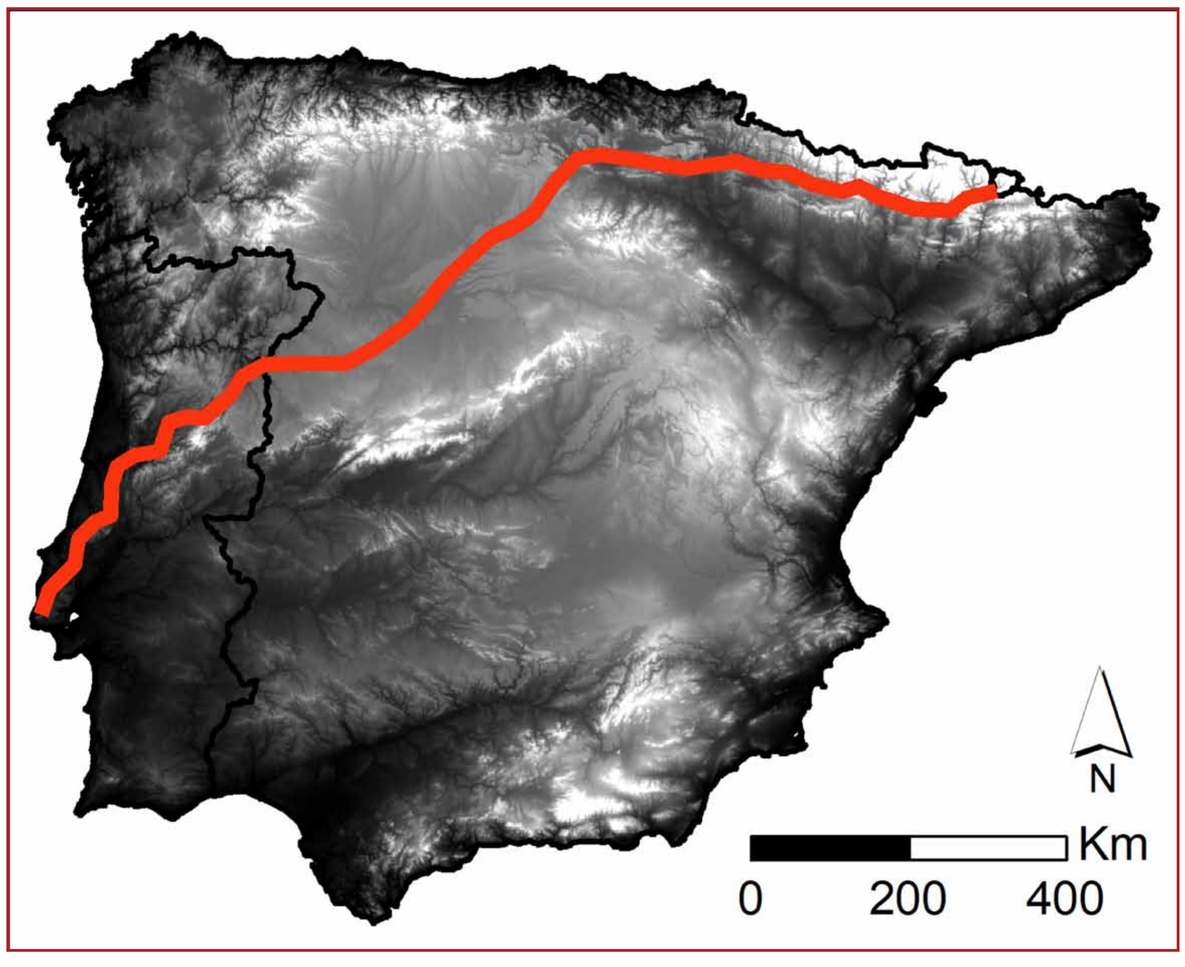

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