

## Publication

### Animal mobility in Chalcolithic Portugal: Isotopic analyses of cattle from the sites of Zambujal and Leceia

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This paper outlines the results of strontium isotopic analyses from cattle recovered at the Chalcolithic fortified settlement sites of Castro do Zambujal and Leceia (Estremadura, Portugal). The Portuguese Chalcolithic (c. 3000/ 2900-1900 BC) was a pivotal time of social and economic change with evidence of increasing social complexity resulting in the formation of hierarchical settlements. With these changes came the emergence of long-distance exchange networks and more complex population movements and interactions. Domesticated animals would have played an important role in these emerging economies, and it is assumed that animals migrated with, and were exchanged by, humans as part of these new networks. While direct evidence of these networks is still limited in this region, new methodologies have the potential to expand our knowledge of animal mobility and exchange. This study uses  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios in tooth enamel to identify potential non-local animals at these two settlements. Results indicate that Leceia may have had a higher proportion of non-local animals than Zambujal and had a wider catchment area for its stock, suggesting variations in settlement economies across relatively short distances in this region. These results have important implications for our understanding of animal management at Portuguese Chalcolithic sites, and the involvement of animals in the emerging economies of the time.

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