

Prehistoric vegetation change and woodland management in central Anatolia

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The primary aim of my PhD project is to reconstruct the long-term histories of woodland use and management practices in central Anatolia through the analysis of wood charcoal macro-remains derived from prehistoric sites on the Konya plain. Anthracology holds particular potential for palaeoenvironmental reconstruction in temperate semi-arid regions, especially in southwest Asia. Several indicator species (for example almonds, terebinths, junipers) are poorly represented in pollen from lake sediment cores. Anthracology thus provides complementary direct evidence with which to reconstruct past woodland composition, fuel selection and woodland management practices. Furthermore, it can inform the reconstruction of the combined impacts of climate change and landscape management practices that have contributed to the evolution and sustainability of particular vegetation habitats (for example oak steppe forests).

As part of my project, I have been analysing wood charcoal macro-remains from Pınarbaşı, Boncuklu, Can Hasan III, Çatalhöyük East and Çatalhöyük West. Most of my samples represent primary-secondary waste disposal contexts (middens), which contain fuel waste accumulated over variable lengths of time, and primary fire features, which provide snapshots of fuel use in single firing events. In addition to botanical identification, I record the presence of deadwood and wood anatomical indicators of management practices (coppicing, pollarding). I also calculate wood calibre (the size of logs used as fuel). My aim is to understand the relative importance of wood size, type and species in prehistoric fuel selection, and thus reconstruct woodland use and availability. In addition, I explore the co-variation of the anthracological data with the available off-site pollen sequences, archaeobotanical data for the presence of wild/weedy taxa at each site and archaeozoological data concerning herded animals. My objective in integrating these datasets is to understand temporal changes in local ecologies including woodland openness, the impact of grazing and browsing, and the management of individual tree species.

Preliminary results indicate the deep antiquity of semi-arid woodlands in south-central Anatolia. The earliest woodlands in the region are represented by the remains of juniper found at Pınarbaşı (~13000 cal. BC) on Karadağ (Baird et al. 2013). At Boncuklu (8500–7400 cal. BC), local wet woodlands comprising willow/poplar in a marsh environment were intensively used for timber and fuel. At Çatalhöyük East (7100–6000 cal. BC), with climatic amelioration and improved soil conditions, there is evidence for the development of more diverse riparian woodlands with elm, ash, willow and poplar. With the beginning of the ceramic Neolithic, semi-arid oak woodlands and later juniper woodlands, both of which were located at some distance from

the settlement in the Taurus foothill zone, were intensively used. Towards the end of the Neolithic occupation at Çatalhöyük East and during the early Chalcolithic at Çatalhöyük West, the available evidence suggests that while some groups (in the TP Area of the East Mound) used more intensively local riparian vegetation, others (on the West Mound) continued to use a diversity of woodland resources.

Central Anatolia has been variously described in the modern botanical and ecological literature as a treeless steppe and a seriously degraded landscape ruined by overgrazing. Yet, remnants of previously (and in some cases currently) managed native woodland habitats remain amidst the modern intensively and extensively farmed and irrigated landscape (Asouti and Kabukcu 2014). My research project demonstrates the vital role woodlands played as a resource base in the transition from the late Pleistocene to the early Holocene, and from foraging to farming lifeways. One of the aims of the project is to emphasise the deep antiquity of woodland management practices in this area, while also highlighting the biodiversity and heritage values of woodlands. In areas such as the Konya plain a greater understanding of traditional vegetation management practices can provide a vital resource for planning future landscape management in the face of global climate change and increasing pressures on scarce water resources.



Managed juniper woodlands on the foothills of the Taurus.

This PhD project is funded through the University of Liverpool, Faculty of Humanities and Social Sciences OSI Studentship (Overseas Fees Award). Fieldwork in 2014 was supported by a study grant from the British Institute at Ankara.

References

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