

# On the distribution of deciduous oak in the second half of the Holocene in northern Syria

Katleen Deckers<sup>1</sup>

<sup>1</sup> Institut für Naturwissenschaftliche Archäologie, Rümelinstraße 23, 72070 Tübingen, Germany; katleen.deckers@uni-tuebingen.de

**Summary:** *This presentation will summarise anthracological results from northern Syria for the second half of the Holocene. A combination of methods will be used to investigate the relative impact of people and climate on the vegetation.*

**Key words:** *Syria, deciduous oak, human impact on the vegetation, climatic impact on the vegetation*

## INTRODUCTION

Today oak park woodland is absent in northern Syria (Fig 1). However, recent charcoal analysis at the sites of Tell Mozan (3rd and early 2nd millennium BC), Tell Leilan (3rd millennium BC), Tell Hamoukar (4th millennium BC), Tell Halaf (first millennium BC till second millennium AD), Tell Jerablus (4th and 3rd millennium BC) and Tell Shioukh Tahtani (late 4th till second millennium BC) indicates a more southward distribution of deciduous oak through the second half of the Holocene in Northern Syria (see also partially in Deckers and Pessin, 2010).



FIGURE 1. Photo from present day Tell Mozan that shows the lack of trees in the surroundings

## METHODS

In this presentation, ancient woodland exploitation will be investigated through GIS land use modeling, diameter measurements on deciduous oak charcoal fragments and charcoal-to-seed ratios. Besides determining the human impact on the vegetation through time, climatic impact on the vegetation will also be investigated. This will amongst other things be undertaken by evaluating the *Pistacia/Quercus* ubiquity ratio, stable carbon isotopic values and ring-widths on deciduous oak.

## PRELIMINARY RESULTS

Our GIS-calculations for the Upper Khabur Basin for example indicate that even with population densities of between 200 and 400 persons/ha there was still some room for oak park woodland vegetation in the third millennium BC (Deckers and Riehl, 2008). Moreover, preliminary diameter analysis results on oak charcoal fragments indicate that mostly small branches were used during that period, thus that the whole tree was not cut down, but instead coppicing was practiced. Furthermore, charcoal-to-seed ratios from Tell Mozan indicate that dung was probably an important component of the fuel used at this site. The regular use of dung as fuel there may indicate that the park woodland was rather open in the surroundings of Mozan. However, it cannot be discounted that people used dung by preference, for example, for specific purposes (Deckers, in press).

*Quercus/Pistacia* ubiquity ratios for the third to second millennium BC indicate that the “boundary” of the oak park woodland with the *Pistacia* woodland (steppe) shifted northwards over time. This is probably related with climatic drying (Deckers and Pessin, 2010). Within this paper, the location of the “boundary” of the oak park woodland with the pistachio woodland steppe will be investigated over longer time periods.

The climatic interpretations will be backed by stable carbon isotopic research and ring-widths of oak fragments. This research is still in process at the time of the abstract writing.

## ACKNOWLEDGEMENTS

Research has been possible thanks to a Margarete-von-Wrangell-Habilitationsstipendium, which is supported by the European Social Fonds in Baden-Württemberg.

## REFERENCES

DECKERS, K., in press. Chapter 12. The “dung-as-fuel” model tested at two Syrian Jezirah sites. In: Deckers, K. (Ed.) *Holocene Landscapes through*

- time in the Fertile Crescent*. Subartu 38, Brepols Publishers.
- DECKERS, K., PESSIN, H., 2010. Vegetation development in relation to human occupation and climatic change in the Middle Euphrates and Upper Jazirah (Syria/Turkey) during the Bronze Age. *Quaternary Research* 74, 216-226.
- DECKERS, K., RIEHL, S., 2008. Tells of the Upper Khabur: their hydrological and agrarian contexts. *Paléorient* 34 (2), 173–189.