

## Abstract

The present study “Settlement patterns of the Middle Palaeolithic in Southern Germany – a GIS-based archaeological predictive modelling for sites in Bavaria and Baden-Wurttemberg” by Christina-Maria Wiesner is based on her master thesis in Archaeological Sciences written at the Institute of Prehistory at the Friedrich-Alexander-University Erlangen-Nuremberg. The study is dedicated to a question that concerns two core areas of research in prehistory: the analysis of settlement patterns of prehistoric hunter-gatherers of the Middle Palaeolithic as well as the prediction of the find probability for previously undiscovered sites in a defined area.

For the first time, Middle Palaeolithic datasets from Bavaria and Baden-Wurttemberg were combined and summarised into samples for the working area by applying a custom-developed evaluation system. Implementation of the settlement pattern analysis and archaeological predictive modelling within this work was achieved with the help of computer-assisted analyses of site data and their statistical evaluation. For this, the method of the *„weighted layer approach“* – a variant of multiple linear regression – was utilized, which was carried out with the help of the geographic information system QGIS. Various site parameters were included in the analysis, such as the elevation above sea level, the slope, the aspect, the distance to the nearest river and the outgoing viewshed.

From these classified layers of geodata, which were transparently weighted according to statistical relevance, predictive maps were subsequently generated, which provide information about the site potential for Middle Palaeolithic sites in the area of southern Germany. These were additionally correlated with factors known to influence the preservation and discovery chance of Pleistocene sites. These include, for example, the distribution of Pleistocene soils, the occurrence of limestone mountains with potential for cave formation, the extent of the Pleistocene ice shields as well as the present-day land use of the analysed areas. With these results, the Neanderthal’s use of space can now be described in more detail:

For example, they pragmatically made use of caves and shelters even when presented with non-optimal location parameters and – in contrast to the Upper Palaeolithic hunter groups – did not necessarily prefer sun-exposed south-facing slopes. Likewise, it is shown that the Southern German karst areas, with their simultaneously high potential for cave and open-air sites, offered an ideal infrastructure for a rapid and economic settlement of the southern German area, and thus probably played a key role in the rapid dispersal of Neanderthals towards Eastern Europe and beyond. The insights gained into the settlement patterns and site potential of different regions within the working area should not only serve theoretical understanding, but also find concrete application in archaeological heritage management and field research.