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Potential raw material sources for the production of lithic artefacts in western Central Europe – GIS-data for the Rhineland, Westphalia, and the Benelux countries

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ABSTRACT

Since July 2013, the project D4 of the Collaborative Research Centre 806 at the University of Cologne has dealt with the Mesolithic in western Germany. During the first phase of this research, the primary tasks were to establish a regional chronology for the Middle Stone Age on the one hand, and the mapping of all known sites in the Rhineland and Westphalia regarding the different Mesolithic phases on the other. Since July 2017, the project has focused on mobility, cultural exchange, and human-environment interactions during the Final Palaeolithic, Mesolithic, and Neolithic in Central Europe. Due to the poor conditions of preservation, numerous Palaeolithic and Mesolithic assemblages only contain lithic artefacts. Communication networks and mobility patterns of the hunter-gatherer groups can be deduced from the raw material of these finds for a considerable number of sites. Apart from pottery, lithic artefacts and their resources also illustrate the social and economic networks during the Neolithic. The raw material of knapped artefacts and their potential geological sources offer important information relating to the project's goals.

A map of the potential raw material sources for knapped artefacts in comparison with the archaeological finds is the basis for any suggestion about mobility patterns and communication networks. In general, information on geological lithic sources and the archaeological inventories in western Central Europe is far more detailed than for other regions. These data and all the information gathered on lithic raw material sources for western Germany and the Benelux countries allow us to provide a GIS-database using the software QGIS in the form of several maps and data tables with geological and archaeological information as well as detailed descriptions and references.

One important result of this paper addresses the reconstruction of lithic raw material catchment areas. Three examples from younger Mesolithic sites show that the more precise petrographic method for identifying lithic raw materials results in much larger catchment areas than traditional macroscopic identification, leading to new considerations for estimating population densities during the later Middle Stone Age.

1. Introduction

Essential questions of the CRC 806 at the universities of Aachen, Bonn and Cologne relate to human mobility and the interactions between humans and the environment during the Late Quaternary. Project D4 has been focusing on the Mesolithic in the Rhineland and Westphalia since mid-2013 and, additionally, on the Final Palaeolithic and Neolithic

cultures in Central Europe since mid-2017. Especially for the Mesolithic and Final Palaeolithic, there are a very small number of professionally excavated sites from the immediate working area. Among them are only a few that contain human or faunal remains in addition to stone artefacts. Botanical remains are also often absent. Consequently, the relationship between people and their natural environment can only be analysed on the basis of the geographical location of the sites and the

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