
The Mesolithic in the Marches: Lithic Sourcing in the Random Forest

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Abstract

It is 50 years since the pioneering research of Sieveking et al. into the geological source of flint artefacts from Neolithic flint mines in southern England. Despite steady but limited interest in the decades since, only modest insights have been gained due to the subtle differences between geological samples across the chalk throughout western Europe and Scandinavia. In recent years however, updated instrumentation and machine learning approaches have enabled a revival of investigation towards this topic, offering more powerful means of differentiating samples and more robust methods of evaluation. This paper presents doctoral and recent research to evaluate three different machine learning techniques, Random Forest, Support Vector Machines, and K-Nearest Neighbour. It presents an example of best practice for pipeline development, provides up to date source determinations for Mesolithic artefacts from the Lower Wye Valley region of the Anglo-Welsh border, and provides insights for future directions for this promising development towards lithic sourcing.

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