Geophysical Research Abstracts
Vol. 20, EGU2018-19191, 2018
EGU General Assembly 2018

An archaeological predictive model for locating rock shelter sites in Hesse (Germany) that contain both Final Palaeolithic archaeology and Laacher See tephra

Florian Sauer, Christian Hoggard, Anke Zernack, and Felix Riede
Department of Archaeology and Heritage Studies, Aarhus University, Aarhus, Denmark (florian.sauer@cas.au.dk)

In the changing environment of the Late Glacial Interstadial Complex, the cataclysmic eruption of Laacher See volcano (c. 13,000 BP) in the Eifel in Western Germany had a dramatic effect on the daily life of Late Palaeolithic foragers (Riede, 2017). Large proportions of the Laacher See Tephra (LST) settled east of the basin in the area which today is circumscribed by the Federal States of the Rhineland-Palatinate and Hesse in central Germany. Due to massive tephra cover, several well-documented Late Palaeolithic sites are preserved in the proximal zone, which give insight into the interaction of foragers and the Late Glacial environment there. In contrast, in the medial zone in Hesse only a small number of surface scatters of lithic artefacts are known. No Late Glacial sites, particularly not rock shelter and cave locations, have been excavated in this region. Yet, it is precisely such locations that offer favourable conditions for the preservation of both tephra and the remains of human settlement. Therefore, these features are the best locations to investigate the influence of the volcanic event on hunter-gatherer land use.

To meet this lack of well-documented sites and ground-truth the notion of human impacts following the eruption, a dataset of c. 800 rock shelter locations throughout the state of Hesse was used to generate an archaeological predictive model (APM). The database was compiled in the early 1990 for the purpose of discovering new and well-stratified sites (Hofbauer, 1995). In the project presented here, a landscape-archaeological approach in GIS was employed to estimate the correspondence of the local topography of rock shelter features with the topographic and cultural framework of known Late Palaeolithic sites. Typical parameters like rock shelter orientation and distance to larger waterbodies, but also the average accessibility of the surrounding landscape were used to test for significant correlations. In addition, a dataset of known occurrences of LST was employed to indicate the presence of fallout at the predicted locations.

This model has allowed us to narrow the number of features potentially used by Late Glacial foragers down to a smaller set of locales. Following this desktop assessment, sites were selected for surveying. In a first survey campaign conducted in late 2017 on the basis of the APM, a small number of promising locations were visited and lined up for subsequent excavation.

References

Hofbauer, H. (1995). Abri-Kataster von Hessen: Ein Vorbericht. Berichte der Kommission für Archäologische Landesforschung in Hessen, 3, 99-105.

Riede, F. (2017). Splendid Isolation: The Eruption of the Laacher See Volcano & Southern Scandinavian Late Glacial Hunter-Gatherers. Aarhus University Press.