

PRACTICAL APPLICATIONS OF PHOSPHATE ANALYSIS IN IRISH ARCHAEOLOGY:  
GEOCHEMISTRY AND USE-OF-SPACE MODELLING

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Phosphate analysis is a geoarchaeological spatial soil analytical technique that can identify areas where organic debris was discarded or collected in the soil. Phosphate patterning is used to differentiate between areas where debris was deposited and areas that were kept clear of debris. The most common use of phosphate analysis in archaeology is for site and feature prospection. However, this information can also be analysed to create use-of-space models, help determine land-use patterns over sites and aid the archaeological interpretation of site and social dynamics. Phosphate patterns can be interpreted to identify the ways in which a site was habitually used, including activity areas not visible in the archaeological record such as low-impact paths, boundaries and areas used for the deposition of elementally rich liquids. The inclusion of this type of data when creating use-of-space models allows for a greater level of detail and understanding of a site. This information can also be used to reconstruct narratives of the social systems within which the phosphate concentrations were formed through the employment of landscape and spatial organisation theories. Phosphate analysis is applicable to a wide variety of sites, has been proven to accurately locate archaeological features 97% of the time and is cost and time efficient. In this presentation I will outline how phosphate analysis can be used to interpret sites, where and when phosphate analysis results will be most advantageous and how accuracy of the method can be assured. Phosphate analysis results from Irish prehistoric and historic sites will be used to show how phosphate analysis can be applied to differing site types and conditions, how phosphate patterns can be interpreted for use-of-space modelling and how the methodology complements other archaeological techniques.