

"Prehistoric settlement and land-use systems in Sandy Flanders (NW Belgium): a diachronic and geo-archaeological approach"

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Introduction

The area of Sandy Flanders is characterized by a very high density of prehistoric sites. By analyzing distribution maps some interesting spatial patterns were determined. While in some areas a very high site-density (cluster areas) was found, some other areas have yielded very little archaeological evidence (empty areas). Socio-cultural, political, economical, and environmental factors will have played a role in this asymmetrical distribution on a geographical and diachronic scale. However, this project aims at determining the role of the environment in the settlement of prehistoric men. The Sandy Flanders region still lacks a multidisciplinary and integrated approach, therefore reactivation and intensification of palaeo-environmental research is necessary. The aim of our research group is to execute the geophysical survey in this project with the electromagnetic induction sensors.

Objective

The primary aim of this research is to get in-depth and spatially continuous information on the geomorphological and hydrological features present in the research area. More specifically it is intended to gain insight into the characteristics of the palaeo-landscape in the Moervaart-depression starting from the Late-Glacial. Different than the information that is gathered by hand-auger, this non-invasive method of soil prospection gives information on the geological features under investigation as a whole and as a part of a larger geological and pedological system.

Methodology

In a first phase proximal soil sensors and near surface geophysics will be used to map ancient gully-systems, palaeochannels, depressions and sandy outcrops. The use of these proximal soil sensors and the interpretation of their data enables modeling most of the physical characteristics of these landscape features in 3D. These data will afterwards be used to evaluate the impact of the landscape on prehistoric settlement and subsistence strategies. The prospection methods applied, will combine direct soil sampling by hand-boring with geophysical techniques primarily based on, but not confined to, electromagnetic induction. Essentially this comes down to assessing the composition and variability of the soil in terms of electrical conductivity and magnetic susceptibility (Saey et al., 2008).

An important aspect is the detection and identification of peat layers in the depression and in the palaeochannel and –gully systems present. The detection of these potentially highly informative

layers allows further interpretation of the detected features and their surrounding landscape (Bell & Walker, 2005).

In close collaboration with the research unit Paleontology a second phase of the research will focus on the environmental information obtained from these peat layers and other sediments. By relating the information gathered in-situ with laboratory analyses, the nature of the geophysically uncovered prehistoric landscape can be further interpreted.

References

Bell M. & Walker M.J.C., 2005. Late Quaternary environmental change. Physical and human perspectives. Essex, Pearson Education Ltd.

Saey T., Simpson D., Vitharana U., Vermeersch H., Vermang J. & Van Meirvenne M., 2008. Reconstructing the paleotopography beneath the loess cover with the aid of an electromagnetic induction sensor. *Catena*, 74: 58-64.

More information

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For more information regarding the GOA project we refer to the [website of the project](#).