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High-resolution palaeoecological and sedimentological records as a tool for understanding pre- and protohistoric settlement and land-use systems in Sandy Flanders (NW Belgium)

Mona COURT-PICON (1), Tim POLFLIET (1), Lynn SERBRUYNS (1), Phillippe DE SMEDT (1), Ann ZWERTVAEGHER (2), Machteld BATS (3), Jeroen DE REU (3), Ilke WERBROUCK (4), Jacques VERNIERS (1), Philippe CROMBE (3), and the UGent GOA Project Team

(1) Department of Geology and Soil Science, Ghent University, Krijgslaan 281, 9000 Ghent, Belgium (mona.courtpicon@ugent.be / +32 (0)9.264.46.10), (2) Department of Soil management, Ghent University, Coupure Links 653, 9000 Ghent, Belgium, (3) Department of Archaeology, Ghent University, Sint-Pietersnieuwstraat 35, 9000 Ghent, Belgium, (4) Department of Geography, Ghent University, Krijgslaan 281, 9000 Ghent, Belgium, (5) School of Geosciences, University of Aberdeen, Elphinstone Road, Aberdeen AB24 3UF, United Kingdom, (6) Headland Archaeology (UK) Ltd, 13 Jane Street, Edinburgh EH6 5HE, United Kingdom, (7) Department of Physical Geography, Faculty of Geosciences, Utrecht University, Heidelberglaan 2, 3508 TC Utrecht, The Netherlands

The area of Sandy Flanders, situated between the North Sea coast and the lower course of the Scheldt River in NW Belgium, is a relatively flat and low-lying area situated at the southern limit of the lowland cover sand region of the NW European plain. During the Late Pleniglacial and the Late Glacial, numerous, generally small but elongated sand dunes, shallow lakes and wet depressions were formed.
During the last three decades intense archaeological prospection has taken place in this region, which is now one of the most intensively surveyed areas of NW Europe. This has led to the production of archaeological distribution maps, which show a distinct pattern regarding the temporal and spatial distribution of these archaeological sites. Some areas with a presumed high ecological value, such as the large but shallow Late Glacial fossil lake of the Moevaart Depressie (ca. 15km long and 2,5km wide), seem to have been attractive settlement locations in Prehistory, given the high amount of close-lying sites along its borders and on the cover sand ridge on its northern border. Habitation however seems to have 'moved' in time, and is completely absent in Protohistory and even the Roman Period.
During the Late Glacial and Holocene the landscape in the Belgian area of Sandy Flanders was subjected to major changes due to climatic fluctuations, and besides human factors, environmental conditions such as topography, soil, vegetation, but also hydrology and climate, may have influenced settlement conditions throughout time and played a role in this change in site location and the occupational history of the region.
In this light an inter-disciplinary project 'Prehistoric settlement and land-use systems in Sandy Flanders (NW Belgium): a diachronic and geoarchaeological approach' (GOA project, UGent), involving archaeology, geography, palaeoecology, sedimentology and geophysical survey, has been undertaken. The study of both "empty" and densely inhabited areas is ongoing and aims at analyzing the settlement dynamics of the area of Sandy Flanders in terms of environmental potentials (theory of "wandering farmsteads") and the human impact ("enculturation") on the landscape. Likewise, we seek to investigate the reasons why other areas, which were inhabited in previous periods (e.g. the Moervaart area) were apparently not attractive anymore from the Metal Ages onwards. Indeed, to determine the suitability of a certain land type for a certain activity, it is necessary to understand the different types of land use (hunting-gathering, farming, ...), the soil characteristics and the environment at different time intervals.
During a large field campaign, a 70m long trench was dug through the deepest part of the former Moervaart lake, revealing alternating layers of (organic) lake marl and peat(y clay) indicating warmer/colder and drier/wetter phases. In addition, 15 mechanical corings have been made at four different locations within the depression, in large palaeochannels that cross the palaeolake, and on its borders. Both trench and corings were extensively sampled for palaeoenvironmental and sedimentological analyses and for OSL and 14C-dating.

We present here the first results of the palaeoecological (mainly palynology, but also plant macroremains, charcoal, diatoms, ostracods, mollusks, beetles and Chironomideae) and sedimentological (water content, LOI, magnetic susceptibility, gamma-density) approaches, which provide new insights in the palaeolandscape evolution of this area during the Late Glacial and the early Holocene, in order to evaluate in detail how and to which degree this evolution determined the pre- and protohistoric occupation and exploitation within Sandy Flanders. Furthermore, significant emphasis is placed on the impact of prehistoric populations on both regional and local landscapes.