

The walrus (*Odobenus rosmarus*): A distinctive member of the Pleistocene megafauna in Belgium

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The southern North Sea is one of the most productive Pleistocene fossil-bearing localities worldwide, including megafauna such as woolly mammoth, steppe bison and giant deer. Historically, the majority of the bone material has been collected accidentally by bottom trawlers who sold or donated it to museums and private collectors. In 2017 and 2018, three scientific campaigns were conducted to the Scheur, a site in a navigation channel off the coast of the Zeebrugge harbor (Belgium). The collected fossils could be assigned to glacial and interglacial stages and to both marine and terrestrial Late Pleistocene faunas. In particular, a high amount of bones and bone fragments of juvenile and adult walrus (the modern *Odobenus rosmarus*) were recovered. The exceptionally good preservation of these fossils suggests lack of secondary transport, indicating an on-shore colony where walrus remains could accumulate over a longer period. Since these fossils were collected by beam trawling, the finds lack a precise stratigraphic context and no age determination has been performed on the bones yet. However, previous studies on similar findings of Late Pleistocene walrus in the Netherlands offshore area revealed age estimates of < 50 ka. This young age seems implausible since because at that time, terrestrial conditions prevailed in the southern North Sea. As the modern walrus is a cold-adapted species occurring in arctic and sub-arctic climate regions, an occupation of the Belgian palaeo-shoreline, which only occurs during interglacials, seems unlikely. Recently however, palaeo-landscape reconstructions of the Belgian Continental Shelf demonstrated that a regional lag in sea level high-stand occurred during the Last Interglacial (Eemian). This lag appears to be caused by post-glacial subsidence of a glacio-isostatic forebulge between East Anglia and Belgium. As such, the land masses might have continued to 'sink' simultaneously with the Last Glacial sea level fall (Weichselian Early Glacial), enabling prolonged marine to near-coastal conditions on the Belgian Continental Shelf while temperatures already deteriorated towards glacial values. This could have resulted in favorable conditions for walrus colonies along the Belgian palaeo-shoreline. Investigations of deep sediment cores that will be taken near the Scheur site in the summer of 2018 will reveal further information about the landscape in this period and whether this would indeed have been a suitable habitat for Pleistocene walruses.

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