

The Scheur: A unique prehistoric fossil graveyard off the Belgian coast

Missiaen Tine¹, Hablutzel Pascal¹, De Rijcke Maarten¹, Lambert Olivier², Germonpre Mietje² and Langeveld Bram³

¹ Flanders Marine Institute (VLIZ), InnovOcean site, Wandelaarkaai 7, 8400 Oostende, Belgium
E-mail: tine.missiaen@vliz.be

² Koninklijk Belgisch Instituut voor Natuurwetenschappen (IRScNB/KBIN), Vautierstraat 29, 1000 Brussel, Belgium

³ Natuurhistorisch Museum Rotterdam, Westzeedijk 345 (Museumpark), 3015 AA Rotterdam, The Netherlands

Over the past few decades Dutch fishermen have dredged up large amounts of unique prehistoric palaeontological material at the Scheur, a navigation channel northeast of the harbour of Zeebrugge. Especially the large number of walrus bones from the last ice age (116,000-12,000 years ago) is striking. The excellent state of the bones and the find of both males, females and young animals indicate that a large colony must have lived here, possibly the most southern walrus colony in the world. In the same area also a number of vertebrae from ancient whales were dredged up, dating from the Middle Eocene (roughly 43 million years ago). Remains of these primitive marine mammals are very rare in NW Europe (only three known sites in the North Sea). The unusual size of the vertebrae (width c. 30 cm) could suggest a hitherto undiscovered species of the family Protocetidae.

Two targeted surveys in 2017 and 2018 produced additional finds of Late Pleistocene land mammals, related to interglacial fauna (wild horse, aurochs, red deer, roe deer, rhinoceros, boar and hippo) as well as glacial fauna (brown bear; wild horse; red deer). All the bone material is most likely preserved *in situ*, derived from layers exposed at the seafloor. Due to maintenance dredging of the navigation channel 10 to 12 m of sediments were removed, thereby exposing older Late Pleistocene and even Paleogene strata. Determination and dating of the fossils are currently ongoing, including the screening for ancient DNA. Radiocarbon analysis of the walrus bone is ambiguous (the method only goes up to 40,000 years), and palaeogeographic reconstructions suggest that the bone material predates the last ice age. Further planned research of the site includes the acquisition of shallow sediment cores and dating based on shell residue and other indicators for climate (e.g. pollen, diatoms, dinoflagellates). Combined with acoustic subbottom data this should allow to reconstruct the evolution of the palaeolandscape at the site.

Keywords: Scheur; Fossil bones; Palaeolandscape