Supplementary information: From lake to river. The Weichselian Lateglacial and early Holocene palaeoenvironmental development of the Moervaart region (northwestern Belgium): a synthesis on vegetation patterns, climate, abiotic landscape and human occupation

Method pollen analyses

The microfossil analyses of the sites Wachtebeke “Penen” (WP; Fig. 1), Wachtebeke “Heidebos” (WH; Fig. 2-5) and Moerbeke “Wulfsdonk” (MW; Fig. 6) previously unpublished are included in this study. The sites of Wachtebeke “Penen” and Moerbeke “Wulfsdonk” were located in the western part of the Moervaart depression where the organic infill of a residual channels of the Kale/Durme river were sampled. The site Wachtebeke “Heidebos” is located on the southern slope of the coversand ridge Maldegem-Stekene where thick coversand deposits alternating with thin organic to peaty layers were present (Derese *et al.*, 2010; Crombé *et al.*, 2012). At this site two cores (511 and 512 were collected. Microfossil samples at these locations were collected at 2-10,5 cm (WP); 1-6 cm (WH) and 12 cm (MW) intervals (supplementary data Figs. 1, 2, 3). Samples (2-3 cc) were prepared following Fægri and Iversen (1989) and Moore et al. (1991) with additional treatment with warm (80°C) 40% HF and sieving over 150 µm. Residues were mounted in glycerine jelly and sealed. A light microscope (magnification 400x and 1000x) was used for analysis. Pollen and spore types were identified by comparison to modern reference material and identification keys of Moore et al. (1991), Punt et al., (1976-2003) and Beug (2004). Identification of NPP´s was based on the type classification of van Geel and colleagues (Miola, 2012). Microfossil taxa were divided into regional and (extra-)local components following Janssen (1973, 1981). Combined AP and NAP totals were employed for percentage calculations. The pollen sum (min. 300) includes trees, shrubs, Ericales, upland herbs and Poaceae and is directly comparable with the pollen sum of the Dutch and northern Belgium Lateglacial and early Holocene regional pollen zonation scheme (Hoek, 1997a, b, 2001). Pollen and spores of the local aquatic- or marsh vegetation (including Cyperaceae) were excluded.

Chronology of these records was established by comparing the pollen records to the Dutch and northern Belgian Lateglacial and early Holocene regional pollen zonation scheme (Hoek, 1997a, b, 2001). At all three sites, chronology was supported by AMS radiocarbon dates on selected terrestrial plant remains. Botanical macrofossils were scarce in the sediment cores, but for each site, 2-5 radiocarbon dates could be obtained, as shown in supplementary data Table A. Radiocarbon dates were calibrated using the IntCal20 calibration curve (Stuiver & Reimer, 1993; Reimer *et al.*, 2013, Stuiver *et al.*, 2020). All diagrams were constructed using Tilia (Grimm, 1992-2021). The pollen data from the site Wachtebeke “Heidebos” core is presented in three parts.

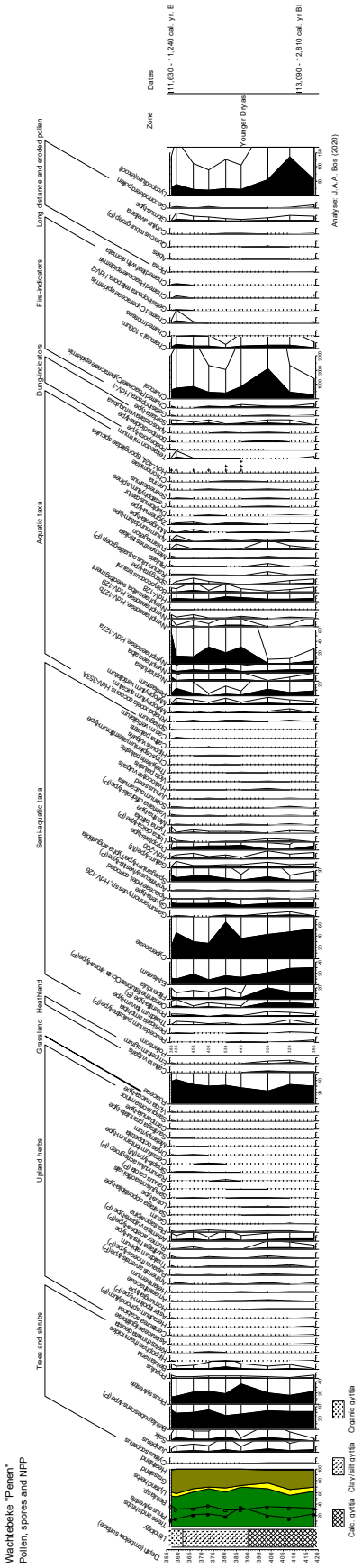

Figure 1 Percentage pollen diagram of the Wachtebeke "Penen" site showing selected regional and local taxa. Curves are shown with an additional fivefold exaggeration.

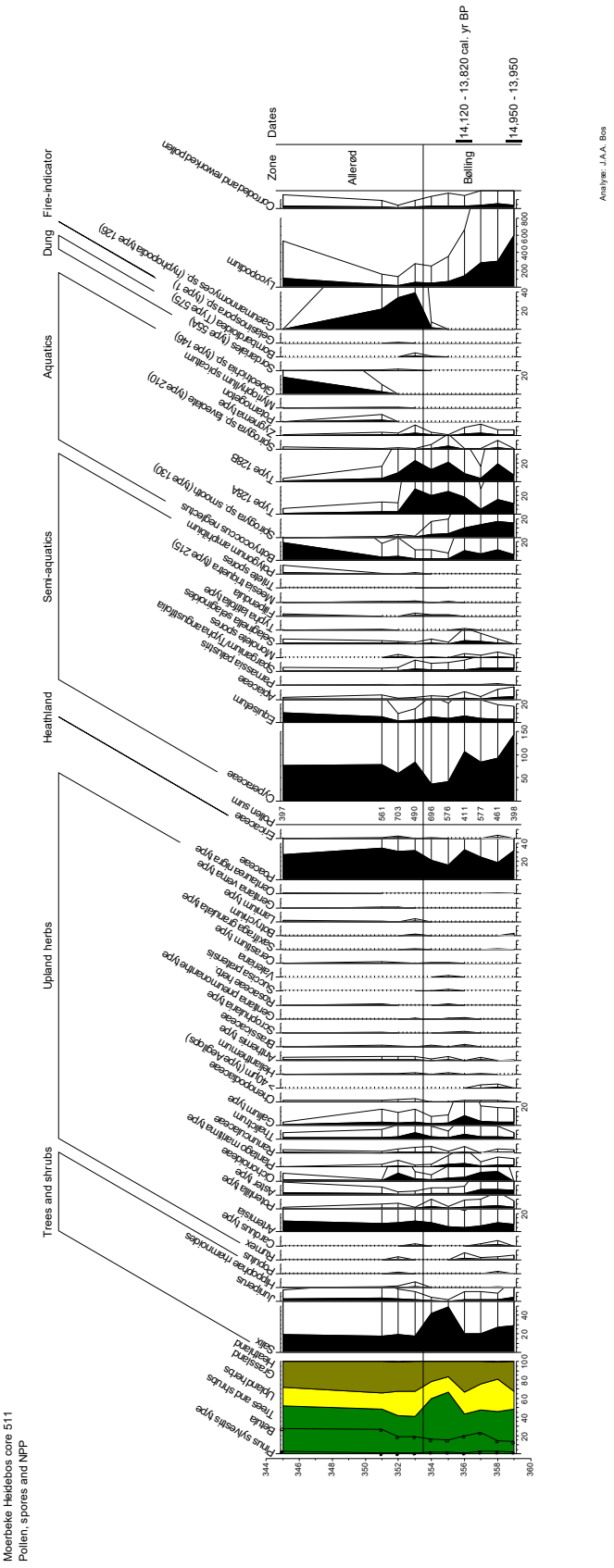

Figure 2 Percentage pollen diagram of the Wachtebeke "Heidebos core 511" site showing selected regional and local taxa. Curves are shown with an additional fivefold exaggeration.

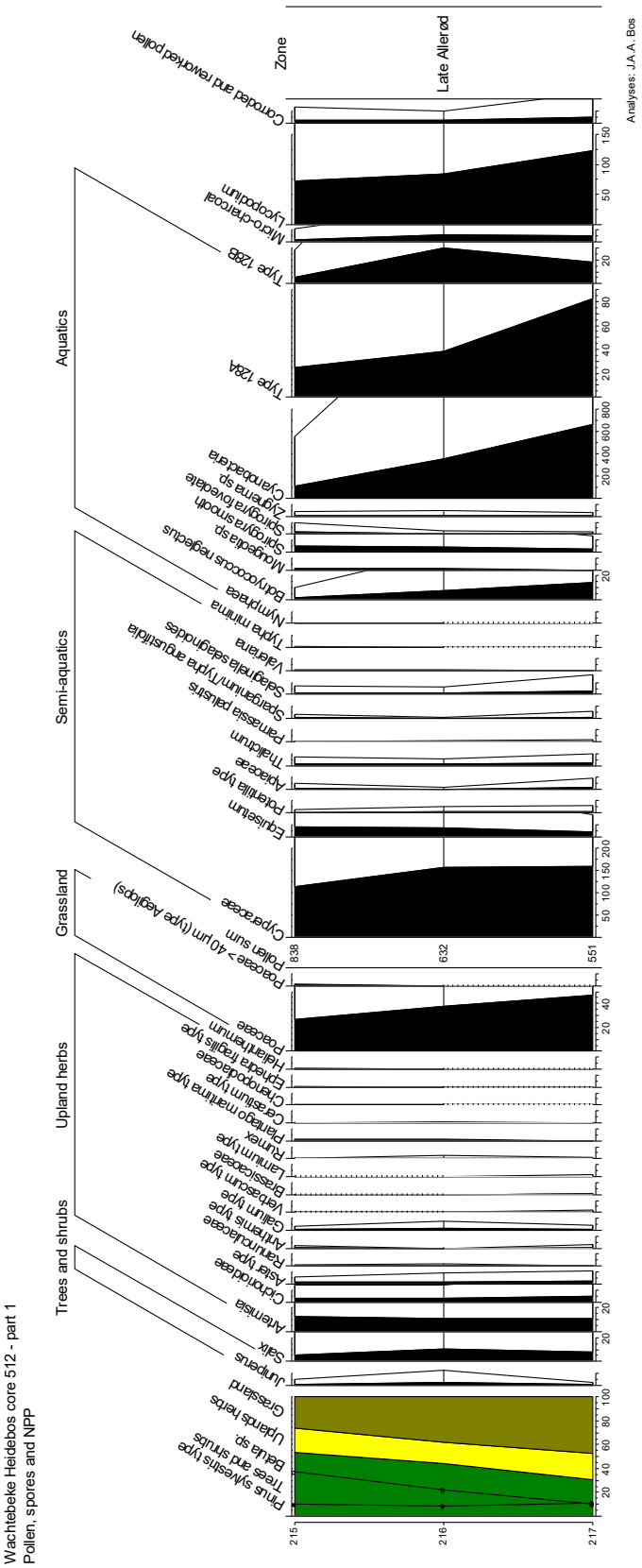

Figure 3 Percentage pollen diagram of the Wachtebeke "Heidebos core 512 - part 1" site showing selected regional and local taxa. Curves are shown with an additional fivefold exaggeration.

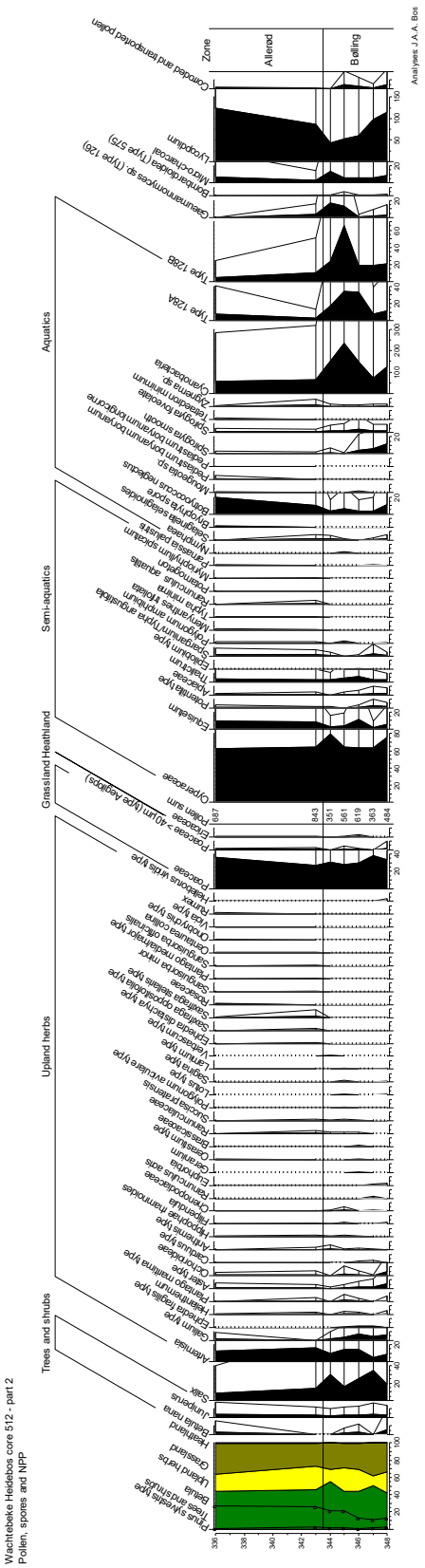

Figure 4 Percentage pollen diagram of the Wachtebeke "Heidebos core 512 - part 2" site showing selected regional and local taxa. Curves are shown with an additional fivefold exaggeration.

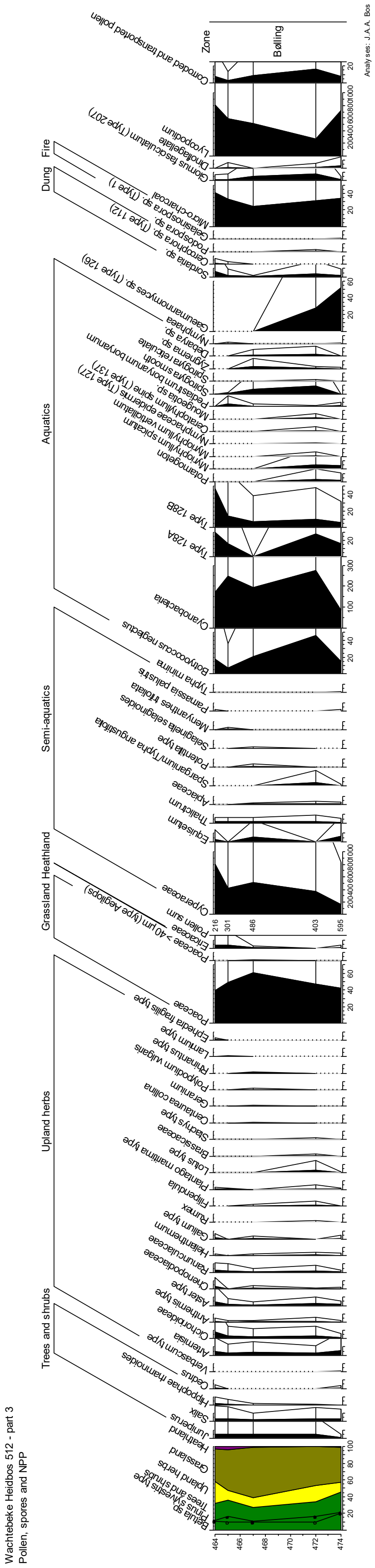

Figure 5 Percentage pollen diagram of the Wachtebeke "Heidebos core 512 - part 3" site showing selected regional and local taxa. Curves are shown with an additional fivefold exaggeration.

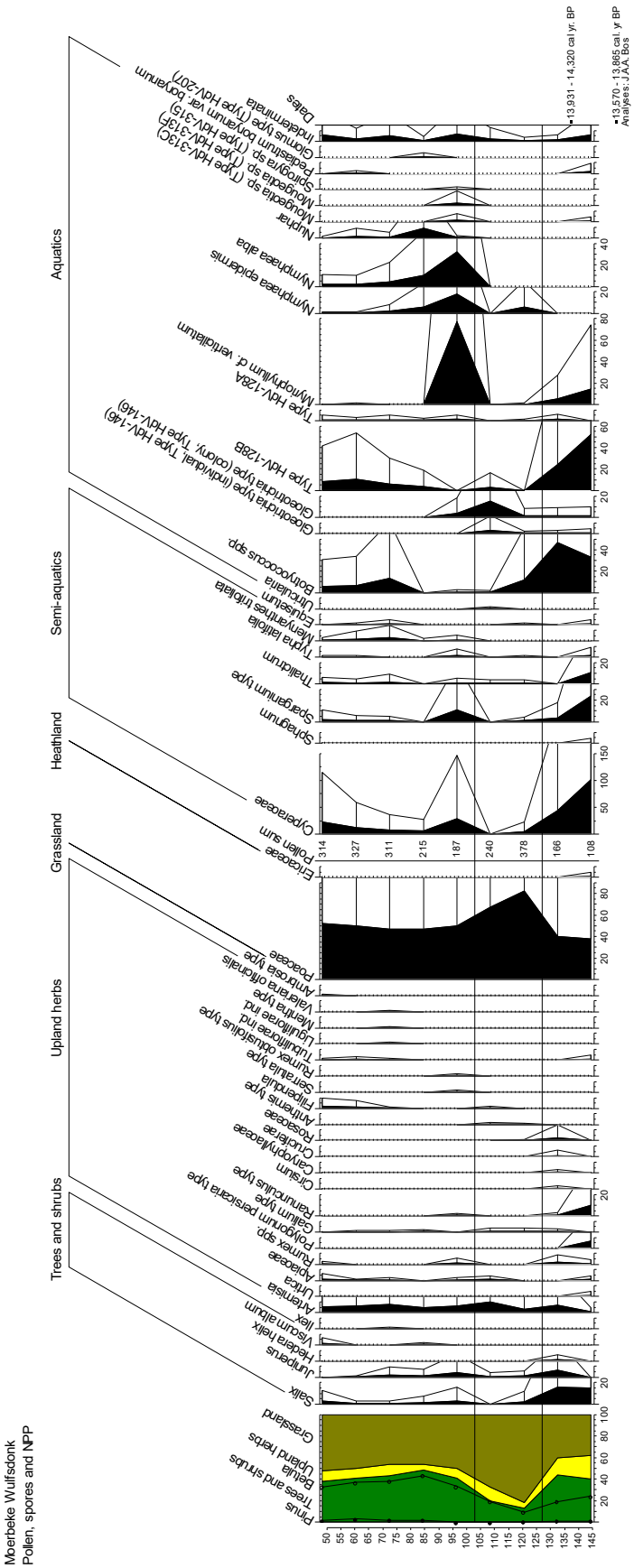

Figure 6 Percentage pollen diagram of the Moerbeke "Wulfsdonk" site showing selected regional and local taxa. Curves are shown with an additional fivefold exaggeration.

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