

CONTRIBUTIONS TO THE EUROPEAN POLLEN DATABASE

10. Na Bahně (Czech Republic): Vegetation development over the last 2.5 millennia in the Eastern Bohemian lowland

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The vegetation development of the East Bohemian lowland is poorly known, despite its interest for archaeology. One reason is that suitable sites are difficult to locate due to the long history of human occupation modifying the natural vegetation. The only site studied in any detail is Na Bahně. Pokorný et al. (2000) described the local vegetation development of the site, whereas the hitherto unpublished regional pollen stratigraphy is presented here.

Site details

The alder-carr fen Na Bahně (240 m a. s. l., 50° 11' 51.4" N, 15° 57' 32.9" E, 1 ha) lies below the youngest, Würmian terrace in a floodplain, 150 m from the Orlice River, about 8 km east of the Elbe River. Mikyška (1926) and Klimešová & Klimeš (1996) described the local fen vegetation as alder carr (*Alnion glutinoso-incanae*). The floodplain has grasslands on mineral soils (flood loams) with patches of alder carr on peaty soils. The uplands adjacent to the floodplain are mostly arable land, with deciduous-forest remnants of *Melampyro nemorosi-Quercetum*, *Molinio arundinaceae-Quercetum*, *Vaccinio vitis-idaeae-Quercetum*, and *Luzulo-Fagetum* in the wider region (Neuhäuslová et al., 1998). Mean annual air temperature is 7.8 °C, and annual precipitation is 602 mm (AD 1901–1950 average, Nový

Hradec Králové Meteorological Station, 8.5 km east of the study site; Vesecký, 1961). The peat sequence was collected with a Russian corer 5 cm in diameter in early spring 1997 by Petr Pokorný and his crew.

Sediment description

0–115 cm: woody coarse-detritus peat
115–195 cm: coarse-detritus and moss peat
195–330 cm: woody coarse-detritus peat
330–420 cm: plastic clay
420–425 cm: sand
425–438 cm: plastic clay
438–475 cm: plastic clay with plant detritus
475–500 cm: unsorted coarse sand and gravel

Dating

Three levels were radiocarbon dated at the Radiocarbon Dating Laboratory, Department of Quaternary Geology, Lund, Sweden. Results are:

111 cm (2 cm thick): 890±90 BP (*Alnus* wood; LuA-4528; AMS)
330 cm (1 cm thick): 1440±70 BP (*Alnus* wood; Lu-4529; gas decay counting)
450 cm (1 cm thick): 2020±110 BP (*Alnus* wood; LuA-4551; AMS)

NA BAHNĚ (Czech Republic)

(50°12' N, 15°58' E; 240 m a.s.l.)

Pollen percentages

Analysis: Petr Pokorný

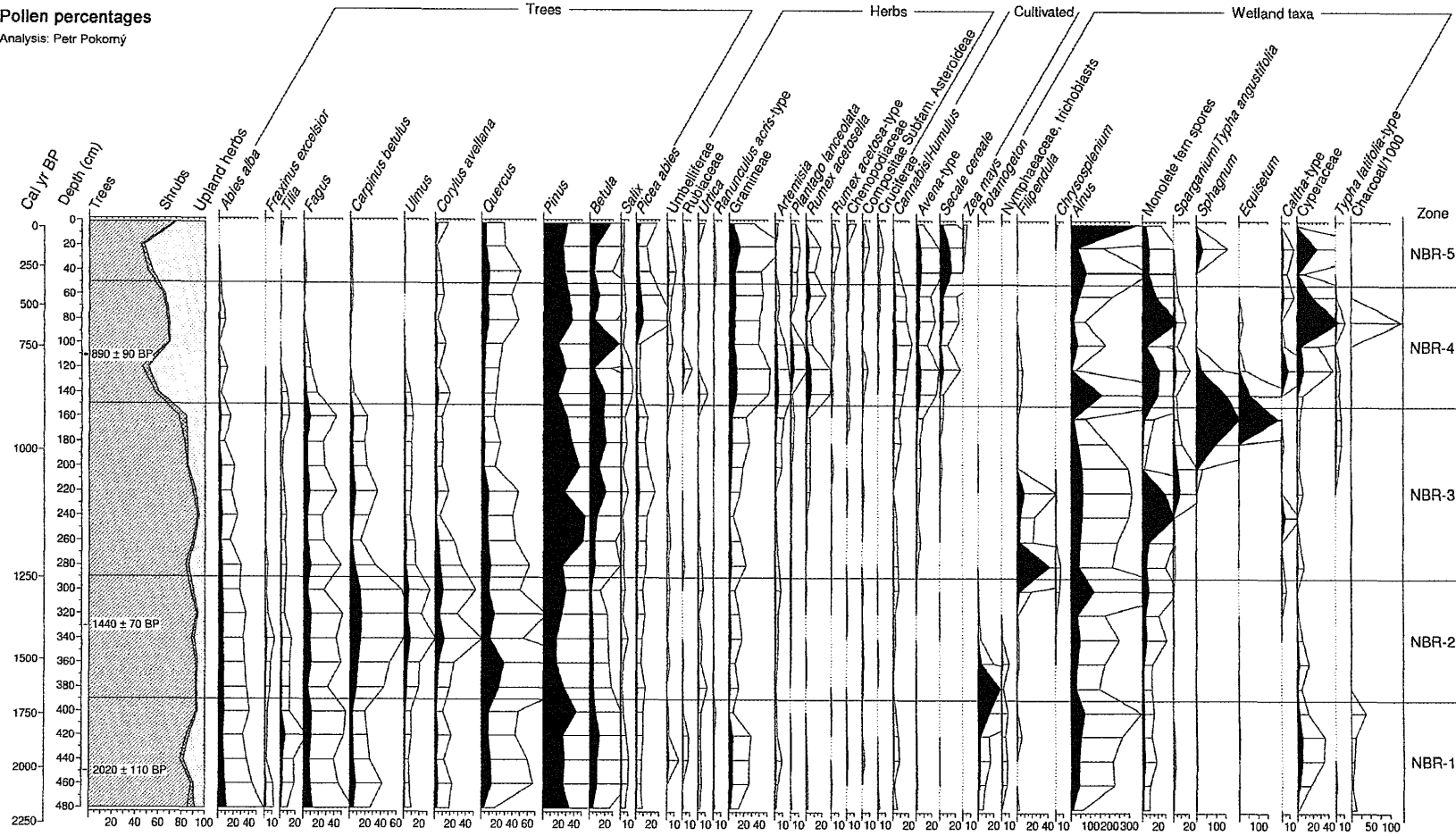


Figure 1. Percentage pollen diagram from Na Bahně site. Only selected pollen taxa are shown.

Interpretation

Figure 1 shows the results. Zone NBR-1 shows a mostly forested floodplain and moderate human impact. Zone NBR-2 shows some forest expansion (*Quercus*, *Carpinus*, *Ulmus*), likely starting in the Migration Period. Zone NBR-3 indicates some deforestation (*Abies* and deciduous trees) and increased crop cultivation. Zone NBR-4 shows marked deforestation, grassland formation in the floodplain, and extensive crop cultivation in the uplands. Zone NBR-5 records a shift in crop cultivation from *Cannabis/Humulus* to *Secale*.

Acknowledgements

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