ДОКЛАДЫ УЧЁНЫХ ПОЛЬШИ. СОВМЕСТНЫЕ ДОКЛАДЫ УЧЁНЫХ ПОЛЬШИ И БЕЛАРУСИ

УДК 551.337(438)

REFLECTION OF 8.2 KA EVENT IN RELIEF AND ALLUVIA OF WIERNA RZEKA (POLISH UPLANDS)

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Łososina river as the left tributary of Biała Nida river is located in the southern part of the Świętokrzyskie Province in the Polish Uplands. The drainage basin with an area of 313,8 km^2, has a meridional extent (Fig. 1). The study section near Wierna lies within the boundaries of the Przedbórz-Małogoszcz Range, which is a natural extension of the Holy Cross Mountains to the west, built from the Cretaceous and Jurassic rocks. The river in the middle section flows through the area of Lower Jurassic marls, limestones, dolomites, sandstones and clays. The valley is filled with the Pleistocene sands and gravels of the Vistulian glaciation and periglacial fluvial sands and gravels. The youngest sediments in the studied section are the Holocene sands with silty inserts covered with organic silts and peats [3].

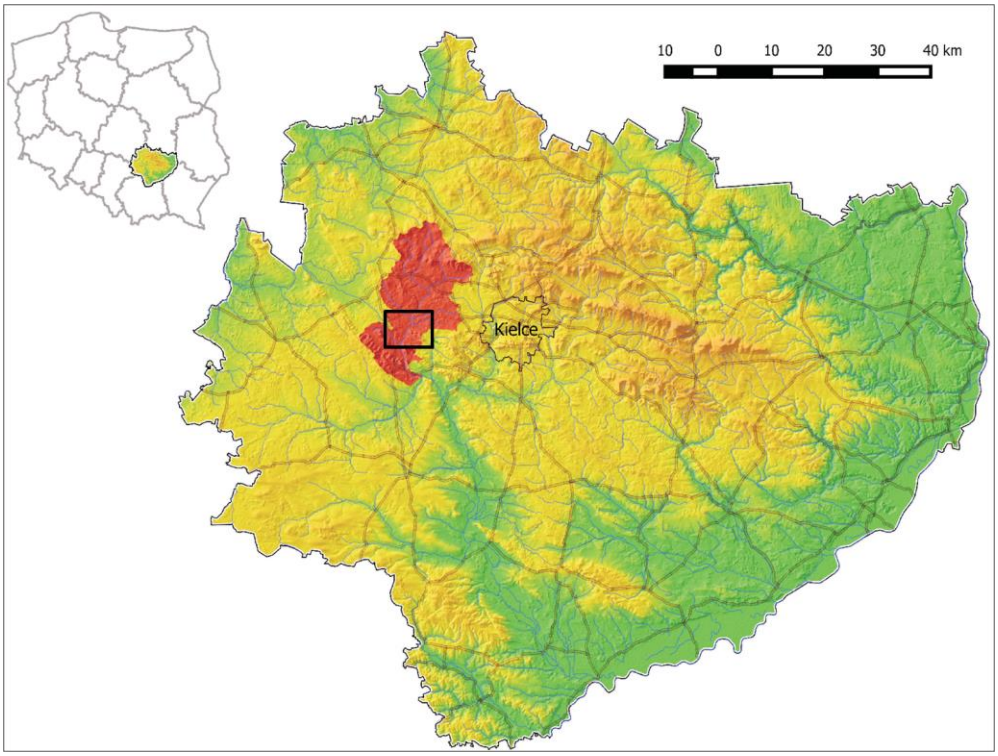

Figure 1 – Location of Łososina river drainage basin and resarch area on in Digital Elevation Model

The study section of the flood plain is characterized by some palaeomeander generations of different age preserved in the relief of right-sided valley bottom (Fig. 2). One of them with large parameters and with a very well developed point bar zone undercut the sandy terrace. An intensive lateral migration and accumulation of point bars started from 8230 ± 90 BP (MKL-3892) cal. 7415–7061 BC and it was continued in the early Atlantic period (Fig. 3–7).

The riverbed was cut off several hundred years later, which can be confirmed by the radiocarbon date from the bottom of the organic deposits 7790 ± 100 BP (MKL-3573) cal. 6721–6453 BC (Fig. 3).

This intense lateral migration of the riverbed and its subsequent straightening could be related to the phase of an increased fluvial activity registered in numerous river valleys of Central Europe [2, therein literature] and dated to the period of global cooling [5] now known as 8.2 ka event. This period was characterized by cooling at about 5 °C, which was an exception to the general tendencies of the Holocene climate optimum [1], This date was accepted as the boundary between the early and middle Holocene (Eo- and Mezoholocene) [4], and today, according to the latest division of the Holocene (IUGS, June 2018), the 8.2 ka date is considered as the border between Greenlandian and Northgrippian.

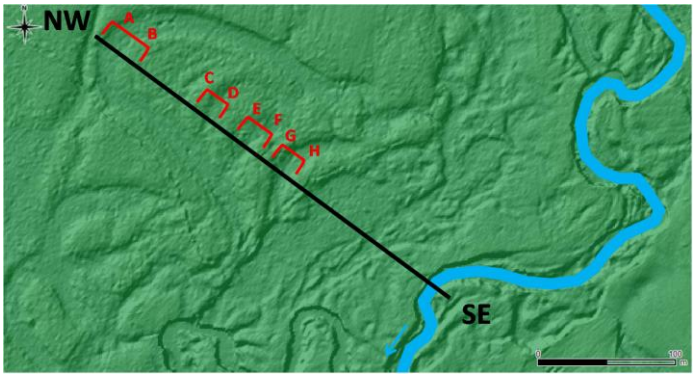

Figure 2 – Generation of palaeomeanders and lines of cross sections

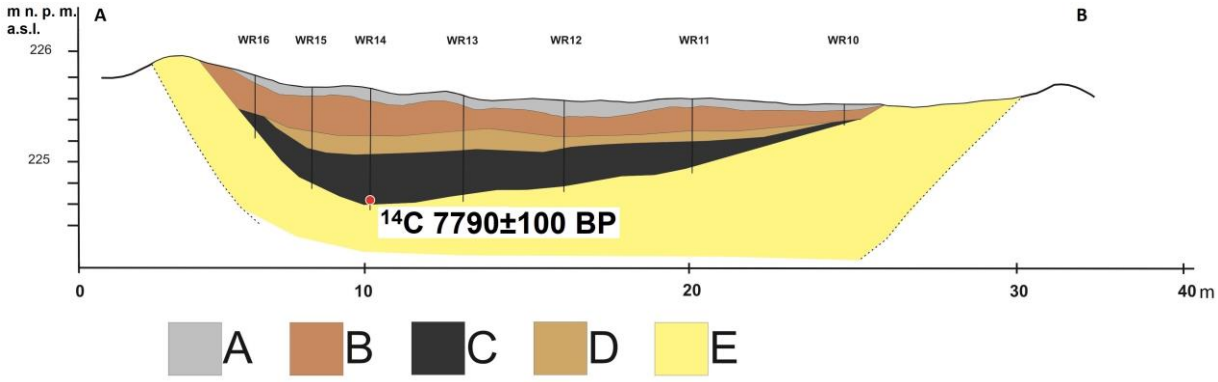

Figure 3 – Schematic geological A–B cross section
A – peats poorly decomposed, B – peats medium decomposed, C – peats strongly decomposed, D – peaty silts, E- medium sands

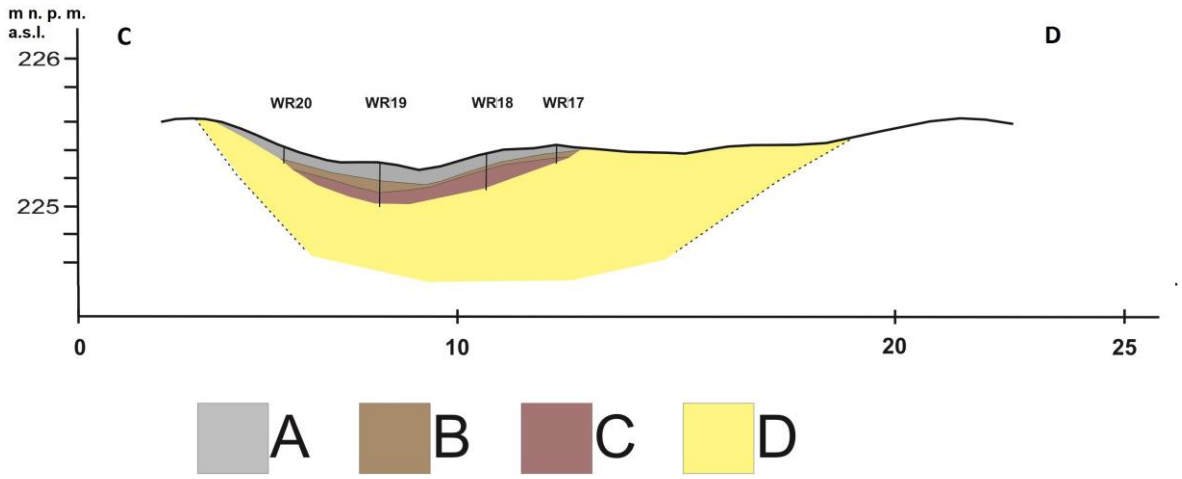

Figure 4 – Schematic geological C–D section
A – peats poorly decomposed, B – clayey peats, C – sandy peats, D – medium sands

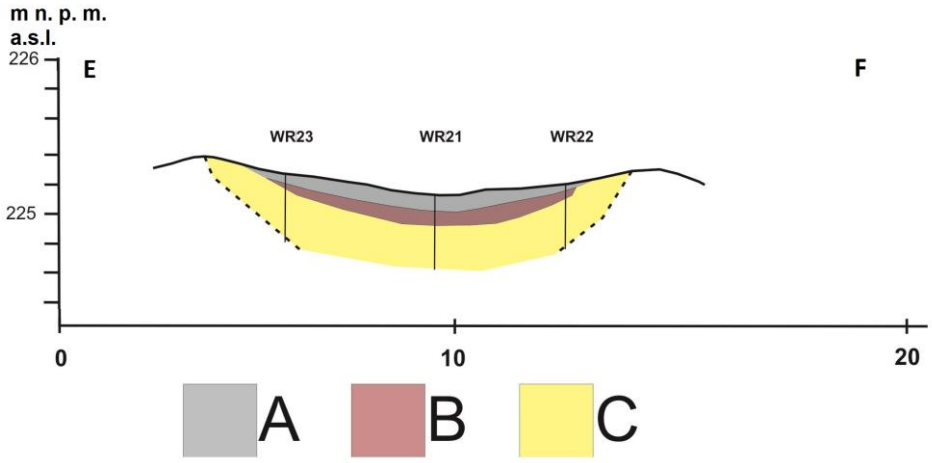

Figure 5 – Schematic geological E–F cross section
A – peats poorly decomposed, B – sandy peats, C – medium sands

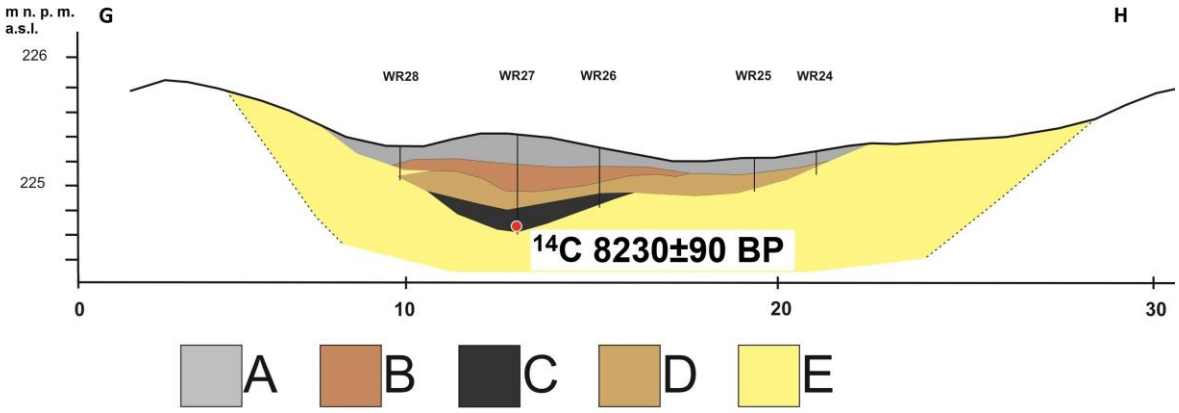

Fig. 6 – Schematic geological G–H cross section
A – peats poorly decomposed, B – peats medium decomposed, C – peats strongly decomposed,
D – peaty silts, E – medium sands

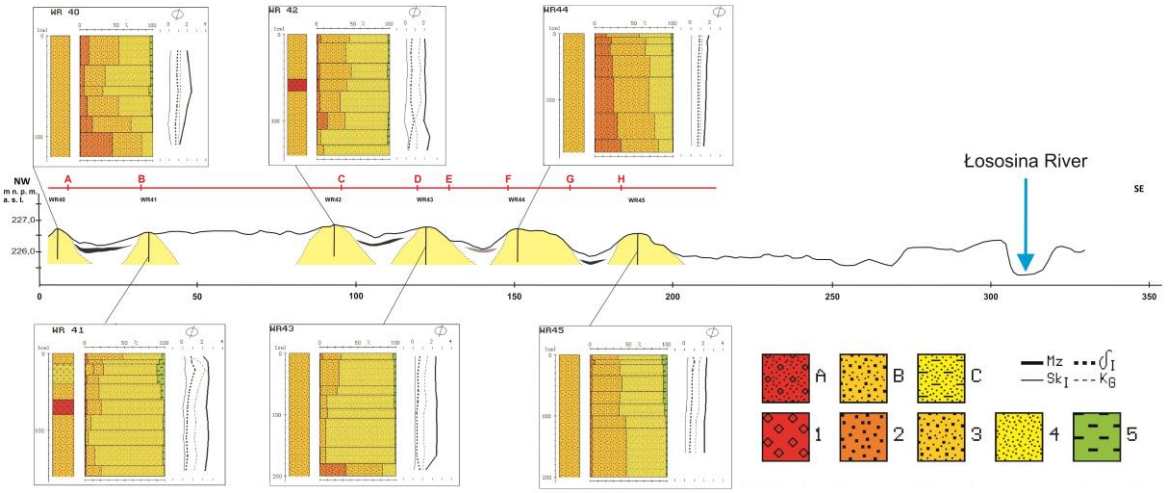

Figure 7 – Schematic geological section across sandy series of point bars and lithological profiles with grain size and Folk-Ward distribution parameters

Lithology: A – sands with gravels, B - medium sands, C – silty sands. Fractions: 1 – gravel (below -1 φ); 2 – coarse sand (-1–1 φ), 3 – medium sand (1–2 φ), 4 – fine sand (2–4 φ), 5 – silt and clay (above 4 φ); Folk-Ward's distribution parameters: Mz – mean size, δ_I – standard deviation, Sk_I – skewness, K_G – kurtosis

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УДК 551.337(438)

CHANNEL AND SEDIMENTATION TYPE CHANGES IN CZARNA KONECKA RIVER VALLEY – NEW DATA (POLISH UPLANDS)

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Study section of the upper Czarna Konecka river valley is located downstream of Czarniecka Góra in northern Mesozoic margin of Holy Cross Mts. In the upper reaches its subsequent valley runs along erosion depression between Mesozoic hills.