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Chronology and dynamics of fluvial style transformation in the Younger Dryas – Holocene transition (lower San River, SE Poland)

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Reconstruction of fluvial style changes in the San River in the Subcarpathian Basins is based on geomorphological and sedimentological analyses. The time control of alluvial fills and temporal changes in the river channel are derived from radiocarbon and optically stimulated luminescence dating combined with independent pollen-based biochronostratigraphy. The results showed that the alluvial plain of the braided (BR) or braided-meandering (BR-M?) river was abandoned before 12,800 cal BP. Large meanders (LM) were cut off in the older part of the Younger Dryas (YD; ca. 12,600 cal BP), and in the younger part of this period (ca. 12,450 cal BP). The small meanders (SM) developed at the end of the YD and were abandoned at the onset of the Preboreal (PB; ca. 11,550 cal BP). The erosion phase at the YD-PB transition, reported from many valleys in Central Europe, was not confirmed in the study area. The full cycle of San River channel transformation (BR (BRM?)->

LM->SM); was estimated to be approximately 1200 years. According to the palynological data, open pine forests with birch that survived from the end of the Allerød dominated the landscape of the river valley during the YD cooling and did not undergo major changes during the warming in the early PB. Therefore, we assume that the influence of vegetation changes in the San River channel pattern transformation was nonsignificant. The location of the studied palaeochannels in the floodbasin filled with silty clayey deposits may have influenced the formation of relatively narrow and deep channels, than that of much the wider and shallower meanders from the YD, situated several kilometres downstream of the surveyed sites.