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Climate impact on the Trzechowskie paleolake ecosystem during the Late Glacial and early Holocene in the light of multiproxy analysis

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The aim of the research was to reconstruct climate fluctuations during LG and early Holocene and their influence on the development of Trzechowskie paleolake. The paleolake is located in the eastern part of the Pomeranian Lakeland northern Poland (Tuchola Pinewoods). Its genesis is associated with the melting of a buried ice block. Trzechowskie paleolake is about 1.5 km long and the average width is 450 m (area $\sim$ 28 ha). In our research we focused on the bottom sediments and multiproxy high resolution analysis were carryied out. We were able to reconstract local environment changes (plant and animal macrofossils, Cladocera, Diatom, Oribatidae mite, δ13C stable isotope, LOI, carbonate content - $CaCO_3$), and the regional changes (pollen analysis and δ18O stable isotope). The chronology was based on palynological analysis, but also on the age-depth model, developed from five radiocarbon dates AMS14C. It clearly shows that the biogenic accumulation in the Trzechowskie paleolake started during Bølling-Allerød warmer period. The preliminary results of all analysis indicate that climate was the main factor responsible for Trzechowskie paleolake development during LG and early Holocane period. The environmental changes influenced sediment formation process and are marked in the lithology and chemistry but also had a strong effect on water plants, fito and zooplankton.