



The impact of climate and environmental processes on vegetation pattern in the Czechowskie lake catchment Czechowo Region (Northern Tuchola Pinewoods) during the Younger Dryas cooling

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Czechowskie lake is located in the northern part of the Tuchola Pinewoods District (Northern Poland) in a young glacial landscape. At present, the majority of the area is forested or used for agricultural purposes, but among them a high amount of basins filled with biogenic sediments are present. This area is very suitable for the postglacial vegetation development investigation because of the LST ash and laminated sediments which we found in the Trzechowskie palaeolake and Czechowskie Lake (Wulf et. all 2013).

The aim of the research was to reconstruct the past landscape and vegetation response to Younger Dryas cooling and we present the results of the palinological analysis done for 6 core of biogenic sediments. Our main objective was to determine whether local factors such as topography and soil cover have a significant impact on the vegetation, eutrophy and sedimentation rate at this time.

In the lake Czechowskie lake catchment we have six cores that cover postglacial succession (Lake Czechowskie small basin – profile JC-12-s; Lake Czechowskiego terrace – profile TK; Lake Czechowskie vicinity – profile “Oko and Cz/80; Trzechowskie paleolake – profile T/trz; Valley between paleolake Trzechowskie and Lake Czechowskie – profile DTCZ-4). The paleoecological research carried out involved an analysis of pollen, microfossils, Cladocera, diatom, loss-on-ignition and CaCO₃ content.

The results show, that the dominant plant communities during the Youngers Dryas in the region nearby Lake Czechowskie are heliophytes xeric herb vegetation with juniper (*Juniperus communis*) shrubs and birch (*Betula*) and pine (*Pinus sylvestris*). In the pollen diagrams there was the difference noted in the participation of the dominant pollen, the juniper pollen was always high but varied from 18 to 37%, birch average pollen share was between 17-27%. The thickness and type of the sediment accumulated in Younger Dryas in the presented profiles differs significantly. In the profiles which comprise the whole succession of the Younger Dryas („Oko”, T/trz, JC-12-s) the thickest sediments are in “Oko” profile (1 m) and thinness in the profile from the lake Czechowskie small basin JC-12-s (45 cm). In Cz/80 profile the lake sedimentation stopped at the beginning of the Younger Dryas.

The conclusion is that the all pollen results show the same main patterns during the Younger Dryas cooling. Nevertheless the local factors had an influence on the vegetation and this reflected in the different participation of species among sites. The sediment type and sedimentation rate was strongly influenced by the local factors.

The combined approach of fossil pollen data and contemporary distribution of substrate and relief allowed to reconstruct of Younger Dryas vegetation patterns and relief in Czechowskie lake catchment Czechowo region.

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Literature:

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