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Title: Microclimate conditioning of small bogs and their surroundings functioning

Key words: microclimate, bog, edge, albedo, transects sampling, frosts, abiotic factors

This study focused on the microclimatic conditions of the functioning of selected *Sphagnum* bogs and their surroundings (forest, field). The main objectives of the study were: (i) determination of the specificity of microclimate conditions of Linje and Poledno bogs; (ii) determination of the relationship between meteorological and hydrological parameters and the albedo of bog surface; (iii) and the assessment of changes in microclimate conditions on the edge of the bog, forest and cornfield.

This study was performed to expand the knowledge on the microclimate of *Sphagnum* bogs, which can be determined based on several-year meteorological measurements. So far, the phenomenon of changes of the microclimate conditions in the zones where the bogs and surrounding areas are in close contact, is relatively poorly understood. Therefore, to achieve the goals of the study, *Sphagnum* bogs located in two variants of the environment, particularly in the forest and among cornfields, were selected. Since these zones are very interesting from the ecological point of view, assessment of changes of microclimate conditions is an important knowledge on abiotic conditions observed there.

The research in the field was carried out in *Sphagnum* bogs in northern Poland between 2010 and 2012. A series of meteorological measurements were performed by using objects alone and reference stations located in the surrounding area. Moreover, the level of groundwater was reported. Evaluation of changes in microclimate conditions on the borders of bogs and the surrounding forest and cornfield, was based on transects studies of temperature and air humidity in the near-ground layer.

The studies have shown that the bogs were characterized by significantly different microclimatic conditions in relation to the open field, however the difference in the size of objects, degree of coverage by trees and surrounding area, resulted in slightly different microclimate conditions on each object. Moreover, the study demonstrated a significant effect on changes in the location of the groundwater layer on the size of radiation reflected from the surface of the bog. The bogs form microclimatic view affected the areas directly adjacent to them. Depending on weather conditions during the measurement campaigns, the strength and the distance of this interaction was different.