

Summary in English

Peatlands are the most threatened ecosystems on a global scale. Regarding degradation of natural habitats, greater attention has been drawn to the peat excavations on calcareous fens as secondary habitats for aquatic organisms, specific for alkaline fens. Dragonflies (Odonata) are good indicators of biological diversity and environmental conditions, therefore, they were used as a research model.

In 2022 and 2023, odonatofauna of 30 peat excavations in the central-eastern Poland has been studied and environmental conditions in these water bodies and their surroundings have been analysed. 44 species of dragonflies have been recorded. Qualitative and quantitative structures of their populations have been characterised. Odonata occurrence has been evaluated on the background of environmental factors. Based on the results, possibilities of using peat excavations on calcareous fens in active protection have been presented.

It has been proved that studied peat excavations are important for tyrphophiles (especially to *Lestes virens*, *Nehalennia speciosa*, *Aeshna juncea*, *Somatochlora flavomaculata*, *Sympetrum danae*, *Leucorrhinia pectoralis*). Peat pools are also favourable habitats for the species of small water bodies which are threatened in their natural habitats; the fauna of astatic waters is primarily affected (*Lestes barbarus*, *L. dryas*, *Sympetrum flaveolum*). Furthermore, peat excavations can protect biodiversity of dragonflies in general.

Environmental factors most importantly affecting dragonflies were: the structure of the water body, including vegetation within peat excavations and in their surroundings. Moreover, land cover nearby the peat pools was important for odonatofauna. Many of these factors may be modified to use peat excavations for active protection of dragonflies. Such procedures might be invasive to some extent, including alterations of particular parts of the water body, or even, digging it up in order to restore earlier stages of succession. Already existing peat pools may be reused, and if necessary, new ones might be dug up. In addition, it is beneficial to create protected areas with peat pools and even in the vicinity of water bodies.

Włodzisław Taniak