

*The summary of PhD thesis
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Species diversity, distribution and habitats of bryophytes in Świętokrzyski National Park.

The presented PhD thesis contains the first complete list of bryophytes of Świętokrzyski National Park (ŚNP) along with their distribution as well as ecological and habitat characteristics. Moreover, in separate chapters bryophytes of anthropogenic habitats were discussed as well as bryo-floristic assessment of ŚNP was made.

The main goals of the thesis was to learn about: 1) Species diversity of bryophytes; 2) Their ecological requirements; 3) The distribution of species and their lower taxa in the area of ŚNP and 4) The conservation status of bryoflora and its hazards.

The basis of the thesis are the results of own field study, a query of the available literature data, as well as a review of the historical herbaria collections from the area.

As a result of the research carried out in the area were recorded: 1 species of hornwort (*Anthoceros agrestis*), 58 taxa including 56 species, 1 subspecies and 1 variety of liverworts as well as 215 species and 6 varieties of mosses.

The greatest species diversity of bryophytes in ŚNP occurs in surface forest habitats, where the most taxa (116) were stated in deciduous forests, while coniferous forest habitats are a little less rich in the species (104 verified). Rocky habitats also make an important niche for bryophytes. 119 bryophytes were recorded from them (18 liverworts and 101 mosses) where rock-like anthropogenic habitats have great significance. Great importance for the species diversity of bryophytes of the research area also have habitats which occupy little areas (including the ones of anthropogenic origin). On meadows, pastures and grasslands there are 16 species of mosses, unique for those habitats. Solely within fields and wastes occurs field hornwort *Anthoceros agrestis* and 2 liverworts (*Riccia glauca*, *Riccia sorocarpa*) and unique for rushes and water habitats is 1 liverwort – *Marchantia polymorpha* subsp. *Polymorpha*.

In terms of the richness and species diversity of bryophytes within ŚNP a few regions and a number of research areas stand out . They are: strictly protected area Mokry Bór and Czarna Woda meadows (area Ee 66/83), strictly protected area Czarny Las (area Ee 66/95), strictly protected area Łysica-Święty Krzyż with boulder fields on the hillsides of Łysica Peak, Agata Peak and Łysiec Peak (areas Ee 76/13, Ee 76/24, Ee77/44, Ee 77/54) and the enclave of Zapusty Scarp (area Ee 77/17).

In the area of ŚNP on the whole were stated 64 species of bryophytes covered by species protection in Poland (Regulation 2014). Two species of mosses (*Buxbaumia viridis* and *Dicranum viride*) are protected within the European network Nature 2000. From among all the confirmed bryophytes 25 are on Poland's red lists of liverworts or mosses and 9 species are rare or vulnerable at European level.

In the final part of the thesis the results of the research were discussed and compared to the reference data. Moreover, the dissertation contains a comparison of conclusions and summing up.