



CEI2021



BOOK OF ABSTRACTS

XVI International Interdisciplinary Conference
Current Environmental Issues – 2021
September 22-23, 2021, Bialystok, Poland

Changes in bird communities throughout secondary bilberry pine forest succession in south-western Belarus

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In the process of secondary succession of bilberry pine forests in southwestern Belarus, 6 stages of vegetation development were identified from a fresh clearcut to a 90-year-old forest. The field work was performed in the years 1996–2018 in south-western Belarus in the Brest timber enterprise (Tomashovka, Medno and Domachevo forestries), in the Malorita timber enterprise (Pozhezhin and Malorita forestries), in the Ivatsevichi timber enterprise (Ivatsevichi and Bronnaya Gora forestries) applying the conventional bird count methods. In parallel with the regular change of vegetation, the succession of bird communities also occurs. In the course of study, 56 bird species belonging to 11 orders were registered, the passerine birds predominate at all stages of succession (66.8–100.0% of the total number of species). The study revealed that the bird species diversity in the course of succession (6 stages, 1–90 years old) increased from 10 to 45 species, total abundance – from 159.2 ± 1.25 to 687.0 ± 3.80 birds/km², total biomass – from 5.71 ± 0.25 to 31.34 ± 1.10 kg/km². As the age of the main tree species increases, the number of birds nesting in the trees rises and reaches the maximum at the last two stages, 33 (73.3%), while the share of ground-nesting species falls. The ornithological diversity included six faunal types. At the initial stages of succession the bird population comprised the European, European-Turkestan and Palearctic types of fauna. At the stage of 80–90 years old the species structure (55.6%) and the total biomass (47.7%) were dominated by the Palearctic types of fauna, and the bird population (48.6%) were dominated by the European types of fauna.

At various stages of succession, 3 species included in the Red Book of the Republic of Belarus (2015) were identified, and 25 species are of international conservation significance.