Abstract

Currently, most scientific attention focused on bird population trends is centred on birds in the agricultural landscape. Forest bird research, on the other hand, is given far less space, despite the fact that forests in Europe often form a substantial part of the landscape in some parts. Moreover, it is undergoing drastic changes throughout Europe, and especially in the Czech Republic. In the second half of the 20th century, their quality deteriorated due to air pollution, later regenerated, but other additional challenges have emerged, such as global climate change and epidemics of wood-destroying insects. It is therefore possible to assume their fundamental influence on forest bird populations. However, most of the work examining the effects of the forest environment and forest management on bird populations is only very local, limited to ecologically valuable, and therefore quite specific, habitats, or covering only a small number of bird species. However, data on the evolution of forest birds vary across Europe. In Finland, for example, forest birds are declining, while in neighbouring Sweden the trend is the opposite. In this study, I aim to better map what characteristics of forests affect specific species of birds, in research conducted throughout the Czech Republic. I decided to explore all types of forests at all altitudes, forests of conservation interest, forests in mountain areas and forests for purely commercial use. I evaluated the occurrence of forest birds in different types of forest described by easily measurable data: the proportion of coniferous trees, the degree of damage to forests, age structure, growth stages, amount of tree layers and stand density. Subsequently, I found out the influence of coniferous trees and the age of the forest on the development of forest birds over time. The results of my work show that all the investigated properties of the forest affect the occurrence of a large number of bird species. The most important factor for the distribution of most forest birds is the proportion of coniferous and deciduous trees. Furthermore, birds are very significantly affected by the growth stages of the forest and the degree of damage to forest stands. Demonstrating the effect of damage rates on a large number of bird species on a national scale has not yet been carried out in Europe, and my results also appear to be very accurate. The influence of the number of tree layers, age structure and stand density was also significant, but for a smaller number of species than the previous characteristics. The presence of conifers influenced the development of twelve bird species whilst the age of the forest had a demonstrable effect on eight species of birds. In the case of these temporal relationships, this is the first ever examination of long-term data from national bird monitoring in a global context.