

Abstract

Passerine bird communities are dynamic natural systems whose study has enriched not only the field of ecology. Although the investigation of these communities has a tradition spanning over a century, the processes shaping community composition at large spatial scales remain poorly understood. This thesis examines the structure of trophic guilds in passerine communities, focusing both on a lowland forest environment in the Czech Republic and on a broader intercontinental scale through a meta-analytical approach. The first part of the thesis describes the passerine assemblage in the Koda National Nature Reserve using an a posteriori classification based on behavioral data collected over two field seasons. The second, meta-analytical part uses comparable behavioral data from four continents to analyze the relationships between phylogeny, morphology, and foraging behavior of passerines at a global scale.

In the first chapter, sufficient data were collected for 17 passerine species, allowing the identification of six trophic guilds and the quantification of species specialization in foraging methods and substrates. In the second chapter, the foraging behavior of 249 passerine species was analyzed based on data from 25 studies. A weak but significant correlation was found between phylogenetic and foraging behavior dissimilarity matrices, and this relationship tended to strengthen within individual continents. These results suggest the presence of a process of convergent evolution in foraging behavior, where the availability of food resources at least partially determines the structure of passerine communities.

This work provides a comprehensive view of the structure of a passerine community in a lowland deciduous forest of Central Europe and represents one of the few studies of this type within the European context. Furthermore, the thesis compiles the most extensive dataset to date on passerine foraging behavior at an intercontinental scale.

Keywords: ecological niche, ecomorphology, evolution of behavior, species coexistence, passerines, foraging behavior