Biodiversity is a feature of life on Earth that is valued as important for humans and ecological processes e.g. pollination, dispersal, nutrient cycling, productivity, stability. However, what does biodiversity mean for particular species or individuals? How is biodiversity perceived by individuals and does it affect their distribution? Does biodiversity influence performance of individuals?

Theoretically, from the perspective of an individual of a given species, biodiversity can be defined as a biological component of the habitat that may indicate food amount, mating opportunities, or strength of the interactions between species. Thus, biodiversity should affect the distribution of individuals especially these selecting territories by using social information acquired from both con- and heterospecifics. **I hypothesize that biodiversity is a unique feature of a habitat positively affecting its suitability for certain species through providing heterospecific social information that improves performance of individuals.**

Heterospecific social information may be transmitted through vocalization. Moreover, in many vertebrates, a phenomenon called "vocal mimicry" has been discovered. It means that males can learn certain elements of heterospecific songs and include them into their own repertoires. Complex songs may be a honest indicator of male quality and are also regarded as very attractive to females. Extra song patterns in the repertoire may increase the mating success of an individual male. Thus, the biodiversity of soundscape may describe the availability of different song templates from different species. Inhabiting high-biodiversity sites may, therefore, increase individual performance and should increase the population density of mimicking species.

The aim of this project is to understand how the biodiversity of songbirds may shape distribution, abundance and song structure of a mimicking bird, the Marsh Warbler *Acrocephalus palustris*. I am going to test hypotheses:

H1: Birds that use vocal mimicry settle territories and reach higher densities in species-rich areas. I predict that the biodiversity of bird species and population density of a mimicking species are positively correlated. The experimental increase of soundscape biodiversity via broadcasting songs of other species should increase the number of singing males and population density of mimicking species.

H2: Mimicking birds that occupy territories with a large biodiversity of songbirds can develop more complex songs. I predict that the biodiversity of bird species and song complexity of a mimicking species are positively correlated. The experimental increase of soundscape biodiversity should lead to the development of more diverse song structures of males in mimicking birds than in reference areas

H3: Mimicking birds living in more biodiverse communities incorporate more mimicry in their songs. I predict there is a positive relationship between the biodiversity of songbirds and mimicry rate in songs of mimicking species. Similarly, the experimental increase of biodiversity of soundscape should be positively associated with vocal mimicry rate.

The study species, Marsh Warbler, inhabits open farmland and it was chosen because of its complex song containing a wide range of imitations of different species. This species arrives at the breeding ground late, thus the habitat selection is more likely to be guided by social information.

The study area will be located in the agricultural landscape in western Poland. I will delineate 60 plots 1 km^2 each. Then I will map territories of the Marsh Warbler males and count other bird species in years 2020-2022, during one of the controls recording singing males. In the year 2021, I will conduct the playback experiment within the chosen plots. I will randomly choose 40 plots for experimental manipulation. Within 20 of them, I will broadcast playback with songs of five different bird species that will constitute elevated biodiversity (biodiversity of soundscape). Within the next 20 plots, I will emit neutral background (a procedural control). The remaining 20 plots will be left without manipulation as a reference area. Songs will be emitted from loudspeakers. After the experiment, the three consecutive bird counts (one with males recording) will be conducted as during the first year. During the third season (2022) bird counts and recordings will be done without any manipulation and will provide information about the carry-over effect.

This will be, to my best knowledge, the first study experimentally testing the relative effects of biodiversity on species occurrence and behaviour, that would broaden the definition of the habitat selection to choices based on the use of heterospecific social information rather than abiotic, environmental characteristics only.