# Abstract

Bird dialects, the cultural phenomena that can be linked to migration, gene flow, speciation and cultural evolution, have been studied extensively. The yellowhammer *Emberiza citrinella*, a common European bird with a simple song and long singing season, has been a model species for studying dialects for decades. In this thesis, I collate several studies that benefited from citizen science approaches to push this field forward. First, we have compiled and unified information on yellowhammer dialect distribution scattered in numerous publications, and unified different dialect nomenclatures used in the past. We supplemented this with data available thanks to volunteers contributing to public databases and other online sources, and demonstrated that the continental distribution patterns of yellowhammer dialects do not support the existence of broad, geographically distinct macrodialect groups as previously believed. In 2011, as part of the Bird of the Year campaign of the Czech Society of Ornithology, we launched a year-long public awareness project "Dialects of Czech Yellowhammers". Its first year's results exceeded expectations in quality and quantity, so a one-year, conservation-focused citizen science project became a long-term, investigative one. In subsequent years, improvements to the web user interface have been prioritised (with a focus on interactivity, fast feedback and gamification for more even sampling effort) resulting of recordings of yellowhammer song from 191 people from 4100 locations, covering 90% of the country. To our knowledge, this makes Czechia the best-mapped country in any bird dialect research. Like in some other parts of Europe, dialects in Czechia are distributed in a mosaic-like fashion. Detailed analyses nevertheless revealed that not all previously recognized song variants have distributional patterns expected from true dialects, so we performed a quantitative study that resulted in simpler and more consistent dialect boundaries. In 2013, we launched a sister citizen science project 'Yellowhammer Dialects' that had broad international coverage but primarily focused on comparison of Great Britain and New Zealand, to which yellowhammer had been introduced in the 19th century. Using archive and recent recordings (including those provided by citizen science volunteers) we compared the distribution of dialects of in its native source (GB) and invaded region (NZ). Unexpectedly, NZ hosted more dialects, which we interpreted as a result of severe loss of suitable habitats accompanied with yellowhammer decline in the second half of the $20^{th}$ century in Great Britain. Our citizen science projects proved that it is not only possible to collect data of sufficient quality for scientific research with the help of unexperienced volunteers, but also taught us – by trial and error – the best practices to involve the public.