

Abstract

Since the beginning of the 20th century human land use changed drastically in Central Europe. These changes included: homogenization of the landscape mosaic, intensification of agriculture, urbanization and land abandonment. In turn, these changes affected bird species and perhaps most significantly manifested in population decline of open habitat birds. Therefore, it is important to investigate sites, which were not affected by the changes mentioned above, such as military training areas (MTAs) - places dedicated to training of armed forces. Previous studies have shown that MTAs seem to host remarkably high bird diversity and abundant populations of bird species of conservation concern. This may be caused by two major factors. First, closure of MTAs to all human activities besides military training spared them of the landscape changes mentioned above. Second, the military training itself produces a very heterogeneous habitat mosaic that allows coexistence of many species with different ecological requirements. To my knowledge, no study compared bird assemblages between MTAs and surrounding landscape directly. At the same time, such data are crucial to assess the value of MTAs for bird conservation reliably and, as a consequence, they enable to think more deeply about mechanism generating this value. That was the main goal of this study.

Bird survey took place in the field at the Hradiště MTA and at control sites in surrounding landscape in western part of the Czech Republic. Results have proved that MTA hosts higher local bird species richness than the surrounding landscape. For all bird species this difference was marginally insignificant, but in case of bird species of conservation concern this difference was already significant. However, this pattern is driven mainly by extraordinary high species richness of open habitats in MTA, whereas species richness in forests did not differ between MTA and surrounding landscape. Surprisingly, I also found that habitat specialist bird species were more abundant in surrounding landscape than in MTA. This result may be caused by the absence of highly specialized forest birds from MTA due to generally low quality of forest stands in MTA. Other species characteristics with relative abundance did not correlate.

Although the research was carried out in a single MTA, geographical analysis of land cover has proven that all active MTAs in the Czech Republic are very similar in this respect. Therefore, I suggest that the patterns found in bird data could be generalized with some caution to the whole Czech Republic or Central Europe.

From the methodical perspective, this study is innovative due to the use of distance sampling during bird survey in the field. This enabled me to model detection probability of particular species and thus to adjust their abundance to species- and habitat- or regional-specific detectability. However, dealing with these detectability-adjusted data showed various caveats of this technique for purposes of relatively small-scale ornithological surveys.