

ABSTRACT

Human activities, which permanently change the landscape, can bring risks, which negatively affect bird population, for instance nest predation, which is increased mostly in suburban zones due to high density of generalist predators. Urban landscape is attractive for them mainly due to increased heterogeneity, caused mostly by anthropogenic fragmentation and increased portion of edge habitat. Multiple accesses to more resources at once attract nesting birds to nest in these habitats. If they intentionally nest in the site, where their reproduction success is lower due to a strong predation pressure, they are lured into so-called ecological trap. Especially in suburban, highly fragmented landscape frequent changes happen. If the birds cannot adapt to them in a short period, they can be threatened by a risk of the ecological trap even more. In the studies **(I)** and **(II)** we focused on a research of existing studies about ecological traps. Whereas study **(I)** summarized current knowledge of the concept of ecological trap in literature, study **(II)** surveyed, whether the appearance of this phenomenon was linked to particular selected features. Ecological traps appeared more in the opened habitats, probably due to more frequent changes in such stands. They were mainly linked to the presence of exotic species which corresponds to the current knowledge. Nevertheless, we know very few studies which adequately test hypothesis of the ecological trap.

In the study **(III)** we ascertained whether there was any relationship between nest predation rate of the artificial ground nests situated in the recently created ruderal patches in the suburban zones of Prague and the mosaic of surrounding landscape. In addition, we also surveyed whether the nests situated at the edge habitat were under higher predation pressure than the nests situated in the interior of the patches (so-called edge effect on nest predation). Predation pressure was negatively affected mainly by the portion of early succession stages and man-made constructions in the surroundings of the patches. Position of the nest appeared to be insignificant. It is possible, that such stages may destabilize all the landscape mosaic in surroundings and, as a consequence, lead to the increased nest predation pressure. It is also possible, that edge effect may work in even wider scales than we are able to survey.

Main aim of the study **(IV)** was to test the influence of both-sided edge effect on nest predation on the gradient from the wetland to the adjoining meadows and forests in the

pristine landscape of the Vltava River Valley. To test it, we applied a method of artificial ground nests. We also used artificial shrub nests to test the one-sided edge effect which was already demonstrated on the real nests of Scarlet Rosefinch (*Carpodacus erythrinus*) in the same locality. Our results revealed an inconsistent appearance of the edge effect among seasons and habitats. In addition, we also supported the data from the study on real rosefinch nests. The inconsistency in the appearance of the edge effect can be affected by the changes in the nest predator foraging preferences among seasons and habitats.

Despite the fact, that there are many studies describing nest predation rate and predator identification, only a few of them concentrated on the behavior of the particular nest predators during the predation act. Our field experiment **(V)** tested the behavior of Black-billed Magpie (*Pica pica*) towards two different types of artificial nests in two different parts of its nesting period. Magpies preferentially depleted our nests during sitting on their own eggs, which could be affected by the change of their foraging preference during searching for food for their chicks. During the predation act, they did not distinguish between artificial and real eggs. Whereas hen eggs were consumed at the nest, quail eggs were carried away. The possibility to carry the prey away obviously increases attractiveness of quail eggs for predating magpies. Therefore hen eggs were more convenient to identify middle-sized bird nest predators than quail eggs.