Report on master thesis of Karthik Thrikkadeeri

The thesis of Karthik Thrikkadeeri focuses on an interesting and understudied topic – bird habitat selection in post-breeding and pre-migration periods. As the author correctly indicates, birds face two key events of their life cycle during these periods: juveniles gain independence on parents and migrants accumulate fat reserves before leaving to the non-breeding grounds. At the same time, studies on habitat selection in that periods are rare because the attention is mostly attracted by the breeding season and (to a lesser extent) by the wintering period or stop-overs on passage. From this perspective, the study is a timely and promising piece and has a clear ambition to fill the apparent knowledge gap.

First of all, I would like to appreciate the author's attempt to provide a comprehensive overview on bird habitat selection during the focal time period with an effort to accommodate the investigations in an exhaustive theoretical background of the existing ecological literature. I am also much impressed by the quickness the author became familiar with natural history of the Central European bird fauna – I expect that this might be a big challenge for someone who came to this region for a relatively short master studies and has not only to recognize the species in the wild to make obtaining the data for the thesis possible, but also to achieve some knowledge on their ecology which is necessary for interpretation of the revealed patterns. Moreover, I find the techniques of data processing suitable and appropriate clearly showing that the author keeps pace with the state-of-the-art in ecology. Concerning the quality of the text, I find the thesis generally well written and quite easy to follow.

Here are some comments, questions and suggestions for defence:

1. The Introduction, though rich in presenting concepts and theories, seems to me a little bit left without the point. For example, we learn important information about the role of competition for bird habitat selection in the relevant part of the Intro, but it is unclear how this information relates to the questions the thesis asks. Providing more explicit links between different parts of the thesis, especially in respect to the ideas these parts present, would improve the text readability.

2. Somewhat related to the point above, I am not convinced by the hypotheses. In most cases, their formulation is ambiguous and unclear. I would very much appreciate if they were linked to the theoretical framework presented in the Introduction in a more straightforward way. In addition, and more importantly, each hypothesis should be presented as a clear testable statement with a short justification. From this perspective, I found only the last two sentences of the Intro as satisfactory: "higher predation with greater abundance of birds…" and "predation rate…linked negatively with the availability of true prey." The other statements I found too weak to represent testable hypotheses. For instance, "tracking certain habitat characteristics" sounds like a universal truth impossible to test – even if we find no relationships, there can still be some (unmeasured) characteristics the birds do track… Instead, I suggest formulation of some simple predictions corresponding to the habitat characteristics measured at the census points and related to the bird abundance data. I think that, for example, relationships between bird guilds and vegetation characteristics can be reasonably predicted…

3. I am convinced that more precisely formulated hypotheses would facilitate interpretation of results. At this point, I think that a room for improvement exists. On the one hand, I would like to acknowledge the student's effort to explain virtually all patterns he found in his data,

including those being quite unusual and perhaps not entirely driven by the examined factors, but presumably underlined by some unknown measures that correlate with the focal variables. On the other hand, I suggest that the interpretation would greatly benefit from a comparison of the revealed relationships with the literature information on breeding habitat selection that is generally well known for the focal species. Based on this comparison, one can infer temporal shifts in habitat selection going beyond the data presented in the thesis. This can further deepen our thinking about the role of different habitats for birds' annual cycle.

4. I did not fully understand the purpose of the experiment on predation of artificial caterpillars. It does not add much to the understanding of factors underlying bird habitat selection in the focal time period. From the opposite perspective, the data on bird occurrence on census points may be useful to explain the predation rates, but these results would be better presented in a separate study.

5. Concerning the data and analysis, even though I was generally happy with their conducting and presentation, I have one small comment. I am not sure with considering the European Robin as a migratory invertebrate feeder. It is currently classified with the same categories as *Phylloscopus* warblers or flycatchers – species with strict migratory and feeding habits. However, Robin is one of the most common visitors at bird feeders during winter taking sunflower seeds as well as other plant matter. Although its feeding habits may change over the course of the season and its winter diet may be not applicable for the post-breeding period classification, I suggest a deeper exploration of the primary literature or handbooks to justify the classification of this species. In general, the paper of Richard Gregory providing material for the diet classification used in the thesis may be not the best choice. As its co-author, I know that the life history data of the species originated as a compromise opinion of the authors and should be not considered as a decisive evaluation. I strongly recommend go into the relevant handbooks (e.g. Cramp) and check if the classification of Gregory et al. holds.

6. I appreciate that the author was completely honest in presentation of all steps he made during data collection and handling. This information enables a deep evaluation and really nothing is hidden. However, some information is perhaps a bit redundant, and we do not need to know it. For example, we do not need to learn about the distance belts used during bird counts since these data were not used for the analyses. This redundancy makes the text longer than necessary and distracts reader's attention from more important information.

In conclusion, I would like to emphasize that these comments are mostly intended as ideas on potential improvement of this study for its future publication. Despite these concerns, I find the thesis very nice, based on hard work and bright thinking of the topic. I fully recommend this piece as a perfect basis for obtaining the Master degree at the Faculty of Science. Concerning the mark, I think that the committee is much more competent in this respect having a better overview and comparison with the others. If I would classify the thesis according to the standards at our Institute, it is undoubtedly number 1 ("výborně") being comparable to the highest-ranking theses defended here. However, if the standards for the study programme Ecology at the Faculty of Science are more demanding, I would rather suggest number 2 ("velmi dobře"). Anyway, I am sure that the committee will clarify this issue after the defence.

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Jiří Reif
reviewer

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