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- To whom it may concern -

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Ihr Zeichen:
Ihre Nachricht:

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Review on: Disturbance dynamics of mountain temperate primary forests of the Western and Southern Carpathians and its effect on forest structure and bird assemblages.

Dear Mgr. Ondrej Kameniar,
Dear Prof. Svoboda,
dear sir or madame,

I appreciate the chance to review the above mentioned PhD thesis. The thesis is based on an impressive amount of work, conducted in different sites of primary forests. I further appreciate the combination of dendrochronological data and data on biodiversity. This combination addresses a major gap in knowledge, i.e. combining disturbance history with present day data on biodiversity. Here, I point out 10 questions, acting as a base for future discussions.

Methodological questions

1. The PhD candidate states, that some spruce-preferring bird species were found in naturally disturbed patches in beech-dominated primary forest. I would like to get the PhD candidate's opinion, to which degree the classification of beech- or spruce-preferring species might be influenced by historical disturbance and/or by forest

management. Vice versa – how might bird presence and distribution shape with changing amount of disturbance in a landscape?

2. How could the detection probability might have influenced the study results. For instance, the calls of *Regulus* species are typically very soft and easy to miss. Could you please explain methodological attempts to counter such possible flaws?
3. The thesis revealed, that even if large changes in forest structures exist, changes in bird abundance can be small. Thus changes in community composition of bird assemblages seem of larger importance (compared to changes in abundance or species richness) and the thesis highlights which environmental parameters might correspond to changes in community composition. However, I was wondering which bird species in particular are related to disturbance history and/or to differences in tree species composition?

Transferability

4. Data for this thesis were collected dominantly in primary forests of Romania and Slovakia. How can they be transferred to other regions outside the study regions?
5. The thesis was based on extensive sampling in natural primary forests. Thus I would like to ask how relevant to managed forests these findings are and they could be transferred?
6. Results generated in primary forests might guide conservation efforts in managed forests. What processes or structures might be integrated in forest management to gain some of the disturbance-related benefits for biodiversity also in managed forests? In more detail – which active management approaches might be recommended on the base of this PhD thesis to foster biodiversity in managed forests?
7. A common approach in conservation and environmental consulting is the use of artificial structures, such as nestboxes, feeding places etc. to compensate the loss of natural habitats. Can such measures imitate structures generated by natural disturbances and benefit species specialized to disturbance affected forests?

8. I would be curious to hear the PhD candidate's opinion on which gaps in knowledge need to be addressed after these articles have been published. In particular, which open questions do we need to address to put scientific results into practice. This might get particularly important in the light of climate change.

Conclusion

Overall, it was a pleasure to read the PhD thesis and I am looking forward to the upcoming discussion. It is important to state that my report should not be understood by comparing the number of words in positive and critical statements. My comments and the discussion arising from them might help to improve the manuscripts not yet submitted. This will further improve the scientific visibility of the study results. I recommend that the candidate earn the academic title of "doctor" after his successful defence.

Sincerely

A handwritten signature in black ink, appearing to read 'Sim Thorn', with a stylized flourish at the end.

PD Dr. Simon Thorn