

REVIEW

by Assoc. Prof. Boris P. Nikolov, PhD

Head of Department „Animal diversity and resources“,

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of Dissertation on the topic

**„Impact of the abandonment and intensification of agricultural land
use on bird communities in model areas in Bulgaria“**

for

the award of the educational and scientific degree "Doctor",

Professional direction 4.2. Biological sciences

scientific specialty "Ecology and Ecosystem Conservation"

written by Sylvia Peteva Dyulgerova

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(1) General characteristics of the dissertation work – volume and structure

The dissertation work of Sylvia Dyulgerova is presented in the form of bound publications and a prepared manuscript with a total volume of 55 pages, distributed as follows: (1) Table of Contents – 2 pages; (2) Introduction – 1 page; (3) Aim and objectives – 1 page; (4) Literature review, Materials and methods, Results and Discussion – 43 pages; (5) Conclusion – 3 pages; (6) Cited literature (from the chapters Introduction and Conclusion) – 2 pages; (7) Appendices – 1 page; (8) Acknowledgements – 2 pages.

The abstract is 26 pages long and almost exactly reflects the structure of the dissertation work – the chapters “Contributions”, “List of publications and citations of works on the topic of the dissertation” and a summary in English have been added.

(2) Literary awareness and theoretical preparation of the candidate

Sylvia Dyulgerova shows very good literary awareness. Within the framework of the dissertation work, the number of literary sources used is as follows (the % of overlap has not been calculated, but it is low): Publication 1 – 44, Manuscript – 17, Publication 2 – 39, literature list outside the publications in the book body – 13.

(3) Methodological approach

The research conducted within the framework of the dissertation work is methodologically sound. Point counts are one of the most widely used quantitative methods for assessing bird populations and they allow for obtaining reliable results for the abundance and density of the studied species. The use of data from two model regions – Central Fore-Balkan (145 survey points) and Sakar (60 points), within several seasons, has allowed the doctoral student to obtain a realistic picture of the impact of the abandonment and intensification of agricultural land use on bird communities in Bulgaria.

In-depth and adequate statistical methods have been applied to the collected data, analyzed with appropriate software tools. The results are illustrated with a number of figures and tables.

(4) Significance and persuasiveness of the obtained results, interpretations and conclusions

The presented dissertation is an in-depth study, the topic of which, without any doubt, is extremely relevant from:

- scientific point of view – observing changes in bird communities during changes in their habitats, one can indirectly judge the degree of their adaptation to environmental changes;
- practical point of view – research on the impact of abandonment and intensification of agricultural land use on bird communities in model areas in Bulgaria is of great importance in establishing and implementing adequate

conservation measures for the management of various bird species of conservation value and areas of the European ecological network.

Sylvia Dyulgerova used an adequate set of statistical analyses, which greatly facilitates the interpretation of the data. The conclusions drawn logically reflect the results obtained.

(5) Critical notes on the dissertation

The information provided here should be viewed more as a set of comments, advice and recommendations that the doctoral student could take into account if they deem them relevant. Since a significant part of the results have already been published, they are more likely to be relevant for future publications or for shaping the methodological design of future studies.

- 1) The first of the model areas – in the Central Fore-Balkan, was surveyed only in June, as stated “at the height of the breeding season”. This is an acceptable compromise given the presence of objective limitations within the framework of the doctoral studies. It should be kept in mind, however, that a number of resident species or those that are short-distance migrants have a more pronounced vocal activity earlier in the spring, which significantly decreases towards the summer season and the probability of their establishment decreases and their numbers/density could potentially be underestimated. This point was corrected for the model area in Sakar (warmer climate, presence of a number of southern species), with two visits at the beginning and middle/end of the breeding season.
- 2) In the presented manuscript (between the two publications in the dissertation work) there is no mention of the year of the research. The places are indicated in detail, as well as the time of conducting the research during the season (two visits - in the period 15.04.-15.05 and 16.05.-15.06.). Perhaps it refers to only one year, it should be explicitly specified.
- 3) The discussion should be further developed within the unpublished manuscript with data from Sakar in the direction of comparison with other similar studies. The topic allows for reference to many more than the 17 titles currently used in the manuscript.
- 4) It is evident that several bird species are assigned to different ecological guilds in the presented publications – Blackbird (*Turdus merula*)

[shrubland/woodland species], Hoopoe (*Upupa epops*) [woodland species/generalist], etc.

- 5) Editorial notes: the technical layout of the dissertation is good, spelling errors are almost absent.
- 6) I would recommend timely publication of the remaining, as yet unpublished results, in order to reach a wider audience.

(6) Nature of scientific contributions

The separation of the contributions into two groups – scientific and scientific-applied, is appropriate and facilitates their perception. In my opinion, the contributions are modestly summarized in only two per category. I would recommend, if possible, that they be given in a little more detail (perhaps as sub-items of the already existing ones), in order to facilitate the users of the dissertation and emphasize the large volume of work done.

Overall, although in this rather summarized form, the contributions reflect the obtained results well. I accept the reference for the scientific contributions formulated by the doctoral student.

(7) Assessment of the quality of scientific papers reflecting the dissertation research

On the topic of the dissertation, two published scientific articles have been presented in the journal *Acta zoologica bulgarica* (2015 and 2024), which has an impact factor. Sylvia Dyulgerova is the first author of both, with the number of co-authors being five and one, respectively. The author team is entirely of Bulgarian researchers.

Both publications are strictly on the topic of the dissertation, with data from a study area in the Central Fore-Balkan. A manuscript of a publication, which has not yet been deposited in a journal for publication, with data from a study area in Sakar, is also presented.

The presented scientific works cover the procedural requirements for the defence of dissertations for the acquisition of the "PhD" at IBER-BAS regarding the publication of the research results included in the dissertation work.

Three participations in scientific forums have been declared – international scientific conferences and a congress in Romania (2013 and 2019) and Turkey (2016).

(8) A motivated answer to the question of the extent to which the dissertation research is primarily the doctoral student's personal work

To the best of my knowledge, the presented results of the research on the impact of abandonment and intensification of agricultural land use on bird communities in model areas in Bulgaria are entirely the author's personal work. The required Declaration of Originality and Authenticity is attached to the documentation.

(9) A reasoned conclusion, unequivocally recommending one of the following proposals: (a) awarding the scientific and educational degree of “doctor” or (b) returning the dissertation for revision

Sylvia Dyulgerova is already a well-established researcher to a large extent. This is evidenced by the presence of articles in specialized journals, good literary awareness and the mastered methods of field and office work, her participation in scientific forums and in a number of scientific research and nature conservation projects. Her dissertation work is a serious contribution to clarifying the effects of the abandonment and intensification of the use of agricultural lands on the bird communities inhabiting them in Bulgaria. Therefore, I strongly recommend awarding the educational and scientific degree "Doctor" to Sylvia Peteva Dyulgerova.

May 09, 2025
Sofia

Reviewer:
/ Assoc. Prof. Boris P. Nikolov, PhD/