

**STATEMENT**

Assoc. Prof. Dr. Gana Gecheva, IBER - BAS,  
a member of a scientific jury according to the Order No. 15/14.02.2025 of the Director of IBER –  
BAS;

on PhD thesis for obtaining the educational and scientific degree "Doctor", scientific speciality  
01.06.11 Hydrobiology,

PhD Thesis: „**Composition and phytosociological structure of macrophyte communities in  
different types of water basins in the watershed of the Bulgarian section of the Danube  
River**“,

PhD student: **Borislava Gyosheva**

Scientific supervisor: Assoc. Prof. Vladimir Valchev,

Scientific consultant: Prof. Rosen Tzonev

**Personal and Professional Background**

Borislava Gyosheva was born in 1985. Between 2004 and 2011, she was a student at the Faculty of Biology, Sofia University "St. Kliment Ohridski." She holds a master's degree in Algology. In 2009, she began working as a biologist at the Institute of Botany, subsequently Institute of Biodiversity and Ecosystem Research (IBEI) at the Bulgarian Academy of Sciences, where she continues to work. Between 2014 and 2016, she was a full-time PhD student. She actively participates in scientific and applied projects in the field of hydrobiological monitoring.

The PhD candidate has accumulated 386 credit points, exceeding the required minimum. Three publications related to her dissertation research have been presented, in which she is the first author. One of them is published in a Q2-ranked journal with an impact factor (IF) of 2.82 and has received 14 citations to date. The PhD candidate has participated in nine national and three international scientific forums.

**General characteristic of the PhD thesis**

The presented dissertation is structured in a classical format, with a total length of 263 pages. It includes the following sections: Introduction; Objectives, Tasks, and Working Hypothesis; Literature Review; Research Area; Methods; Results and Discussion; Summary of

Results and Conclusions; Final Remarks; Bibliography (72 titles in Cyrillic and 240 in Latin script); and Appendices.

The research objective reflects the dissertation topic, and six tasks have been formulated to achieve it, outlining the study's structure. The working hypothesis is aligned with the objectives and tasks.

The literature review spans 11 pages. PhD candidate Gyosheva has comprehensively presented the studied water bodies in the "Research Area" section, logically categorizing them into six groups: marshes, oxbow lakes, river bays, canals, reservoirs, and rivers.

The vegetation of a large part of the Danube wetlands in Bulgaria was studied between 2014 and 2016. Data from 462 transects were analyzed. A wide range of indices was applied, including a Reference Index, species diversity indices (such as S, N, Shannon-Weaver, etc.), and ordination analysis. Based on 482 phytosociological descriptions, it was determined that the described syntaxa belong to 4 classes, 7 orders, 11 alliances, 33 associations, and 17 communities.

Various software programs were used in the analysis, including PRIMER, CANOCO, JUICE, and R.

Based on the summarized results, 17 conclusions have been formulated. Additionally, 8 original scientific contributions, 3 confirmatory findings, and a comprehensive scientific-applied aspect of the dissertation have been outlined.

Furthermore, it should be noted that, for the first time, data on aquatic vegetation have been provided for certain wetland areas, including the oxbow lakes of the Yantra River near the villages of Tsenovo and Krivina, the Vit River near Dolni Vit, the Osam River near Cherkvitsa, and a bay of the Yantra River near Tsenovo.

An excellent summary of the results is also presented in the dissertation's abstract.

As a note, it should be mentioned that 40% of the cited literature sources were published after 2010, with only 15% of them dating after 2020. It is advisable to increase this percentage in future research work.

In my opinion, "hydromorphology" should not be considered an environmental factor or included in analyses as an independent "categorical" parameter. In practice, these are the groups of studied wetlands, excluding rivers, as indicated in section 4.2, Objects of Study. On one hand, these groups are elements of hydromorphology (form and structure), and on the other, this very element determines the reference ranges of abiotic and biotic parameters.

The notes mentioned above do not diminish the value of the dissertation—it is a comprehensively completed study. PhD candidate Gyosheva is an ambitious and responsible researcher who possesses all the necessary qualities to establish herself as a scientist.

## **Conclusion**

The dissertation and the submitted materials meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and its implementing regulations, as well as the Regulations for Acquiring Scientific Degrees and Academic Positions at IBER-BAS.

Based on the above, I confidently give my positive assessment and recommend that the esteemed members of the Scientific Jury vote **IN FAVOR** of awarding the **educational and scientific degree "Doctor"** to **Borislava Petrova Gyosheva** in Professional Field 4.3. Biological Sciences, Scientific Specialty Hydrobiology.

26.03.2025

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(Assoc. Prof. Gana Gecheva)