

RESPONSE TO REVIEWERS OF THE DOCTORAL DISSERTATION

**SPATIAL AND TEMPORAL PATTERNS OF PHYTOPLANKTON IN TROPICAL AND
TEMPERATE LAKES**

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Firstly, I would like to express my gratitude to Dr. András Abonyi and Profa. Dra. Luciane Oliveira Crossetti for providing valuable comments and insights that have significantly contributed to the improvement of this dissertation. All main questions raised by them on the pre-defense have been addressed and corrected according to the dissertation. Here I addressed the questions raised by Dr. András Abonyi on the defense evaluation.

In your opinion, what are the advantages of utilizing the phytoplankton functional group classification as proposed by Reynolds?

The Reynolds classification originated from an intuitive understanding of ecological basins, considering the coexistence of species and their responses to environmental variables. This approach relies on a profound knowledge of species ecology, including their tolerances and sensitivities. By doing so, Reynolds effectively simplifies complex systems while retaining the crucial phytoplankton responses, such as the underlying mechanisms and their effects. This approach also stands out by providing a well-defined habitat template due to incorporating environmental conditions for species classification, differently from other approaches. Consequently, it enhances the predictability of the model, allowing for more accurate predictions of phytoplankton response and potential consequences of environmental changes.

From your perspective, what are the limitations or weaknesses of the FG classification sensu Reynolds?

Due to the great complexity of species ecology associated with this approach, there are certain limitations associated with its application. One particular limitation is for newly discovered species when there is insufficient information available about their specific characteristics and environmental interactions, thus increasing the risk of misplacement within the classification. However, if a species has already been classified within the original framework, it can be easily assigned to the appropriate group.

Furthermore, the implementation of this approach requires the expertise of a specialist in phytoplankton taxonomy. In some cases, the organism needs to be identified until the species level considering that a genus can belong to more than one group.