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| Book Name: | [**Geography, Earth Science and Environment: Research Highlights**](https://www.bookpi.org/bookstore/product/geography-earth-science-and-environment-research-highlights-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4522** |
| Title of the Manuscript: | **Seasonal Dynamics of Phytoplankton Diversity in Ranchi Lake: Indicators of Water Quality and Ecosystem Health** |
| Type of the Article | **Book Chapter** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This manuscript provides valuable baseline data on the seasonal dynamics of phytoplankton communities in Ranchi Lake, a crucial urban freshwater resource. By identifying dominant phytoplankton species and their seasonal variations, the study offers insights into the lake's ecological health and potential pollution levels, contributing to a better understanding of urban aquatic ecosystem dynamics. The findings are relevant for water resource management strategies, particularly in rapidly urbanizing areas, and serve as a foundation for future research on the long-term impacts of environmental changes on similar lentic systems. Furthermore, the identified indicator species can be utilized for biomonitoring programs in comparable freshwater bodies. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | The title "Seasonal Dynamics of Phytoplankton Diversity in Ranchi Lake: Indicators of Water Quality and Ecosystem Health" is generally suitable. It's clear, concise, and accurately reflects the content of the paper. However, it could be slightly improved for broader appeal and impact. “Seasonal Phytoplankton Variations as Indicators of Water Quality in an Urban Lake” |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | The abstract is mostly comprehensive, providing a good overview of the study's objectives, methodology, key findings, and implications. However, there's room for improvement in terms of clarity and conciseness. **Additions:**   * **Quantify the dominant species:** Instead of just mentioning that certain species were dominant, briefly quantify their dominance (e.g., "Microcystis and Spirogyra, comprising X% of the total phytoplankton"). This adds more weight to their role as indicators. * **Highlight the broader implications:** Briefly mention the broader implications of the study for water resource management or conservation efforts. This can make the abstract more appealing to a wider audience.   **Deletions:**   * **Remove redundant information:** The sentence "The evaluation of phytoplankton which are mostly found in water bodies is the focus of this research" is somewhat redundant and can be removed. * **Streamline the findings:** Instead of listing the ideal time periods for each phytoplankton group separately, consider a more concise statement like "The study revealed distinct seasonal patterns in phytoplankton composition, with Cyanophyceae dominating in the summer months." |  |
| **Is the manuscript scientifically, correct? Please write here.** | The manuscript presents a generally scientifically sound approach to studying phytoplankton dynamics. However, some aspects require clarification and strengthening to ensure complete scientific rigor. The methodology for sample collection and analysis seems adequate, but the lack of specific mention of water quality parameters beyond phytoplankton composition is a significant weakness. Correlating phytoplankton data with measured physicochemical parameters (e.g., pH, temperature, nutrient levels, dissolved oxygen) is crucial for a robust assessment of water quality and the drivers of phytoplankton community structure. Without this data, the conclusions about pollution and water quality remain somewhat speculative. Additionally, while the identification of dominant species is valuable, quantifying their abundance (e.g., cells/mL or biovolume) is essential for a more comprehensive understanding of community dynamics and their role in the ecosystem. Finally, the discussion could benefit from a more in-depth analysis of the observed seasonal patterns, relating them to potential environmental factors and comparing them with findings from other similar water bodies. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | The references provided are a mix of relevant and less relevant, and some are quite old. While older references can be valuable for historical context, a strong reliance on them, especially when discussing current ecological conditions, is not ideal. A good balance of recent and foundational literature is generally preferred. |  |
| Is the language/English quality of the article suitable for scholarly communications? | The language and English quality of the article, while understandable, need significant improvement for scholarly communication. There are numerous grammatical errors, awkward phrasing, and unclear sentences throughout the manuscript. This detracts from the clarity of the presentation and can make it difficult for readers to fully grasp the authors' intended meaning. |  |
| Optional/General comments |  |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |

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| **Reviewer Details:** | |
| Name: | **Kumari Akanksha** |
| Department, University & Country | **Birla Institute of Technology Mesra, India** |