Unveiling the hidden dynamics of planktonic ecosystems: A seasonal perspective of microeukaryotic plankton in the Belgian North Sea

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Marine microbial eukaryotes play a crucial role in primary production and biogeochemical cycles. However, our understanding of their ecosystem is limited. In this study, we aimed to investigate the variation in the microeukaryote metatranscriptome over one seasonal cycle in the Belgian part of the North Sea (BPNS). By generating a first monthly metatranscriptome dataset sampled from 6 fixed locations in the BPNS, we found that the seasonal pattern of phytoplankton assemblages and biomass is confirmed by metatranscriptomic data, and how this relates to ecosystem functioning. Additionally, we also compared seasonal changes in functional and taxonomic diversity and to better understand the relationship between intraspecific and interspecific competition in diverse microbial communities. This study provides new insight into the hidden dynamics of planktonic ecosystems and highlights the importance of metatranscriptomic investigations in understanding marine microeukaryote ecosystems.

Keywords
Microeukaryotic Plankton; Metatranscriptomics; Belgian Part Of The North Sea