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Review

Modelling plankton ecosystems in the meta-omics era. Are we ready?

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ABSTRACT

Recent progress in applying meta-omics approaches to the study of marine ecosystems potentially allows scientists to study the genetic and functional diversity of plankton at an unprecedented depth and with enhanced precision. However, while a range of persistent technical issues still need to be resolved, a much greater obstacle currently preventing a complete and integrated view of the marine ecosystem is the absence of a clear conceptual framework. Herein, we discuss the knowledge that has thus far been derived from conceptual and statistical modelling of marine plankton ecosystems, and illustrate the potential power of integrated meta-omics approaches in the field. We then propose the use of a semantic framework is necessary to support integrative ecological modelling in the meta-omics era, particularly when having to face the increased interdisciplinarity needed to address global issues related to climate change.

Contents

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