Assessing the drivers of biodiversity patterns using environmental DNA data: macroecology and macroevolution of the oceanic plankton

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Abstract

Recent oceanic surveys have collected genetic datasets that are at the same time community-wide, i.e. representing all species from a community assemblage, and global, i.e. covering a large part of the total diversity of clades. These data offer an unprecedented opportunity to assess the ecological and evolutionary drivers of biodiversity patterns, from local communities to the global ocean. I will present two studies based on data from the TARA Ocean Global Expedition. The first focuses on the drivers of diversification of the oceanic plankton; the second focuses on the drivers of community assembly. These studies will illustrate recent quantitative tools for studying diversification and community assembly. Next, I will discuss future avenues for integrating these quantitative tools for a more inclusive understanding of biodiversity patterns.

Keywords: diveristy, oceanic plankton, distribution, NGS, environmental DNA

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