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# The missing link in our oceans: How zooplankton size spectra couple phytoplankton with fisheries

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Relative to our knowledge of the oceans' phytoplankton and fisheries, we have little understanding of the zooplankton-related processes that link them. This is extraordinary, as it is the zooplankton that graze the ocean phytoplankton, drive the production of our fisheries, and play a key role in global carbon export. The size frequency distribution of zooplankton (size spectra) is an innovative method for estimating their growth, predation and production. In this project we are undertaking a global analysis of zooplankton size distributions from tropical to polar environments. Our aim is to use a global synthesis of zooplankton size spectra to determine zooplankton rates over broad environmental conditions and thereby characterize the missing link between phytoplankton and fisheries production. The project will use existing datasets from Optical Plankton Counters (OPC/LOPC) to develop innovative numerical methods to understand the population dynamics, carbon export, and trophic structure of zooplankton. We currently have collaborators with OPC and LOPC data from over 40 different regions and are seeking further collaborators.

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