Mapping zooplankton observations at the national scale

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Zooplankton are the intermediate trophic level between phytoplankton and fish, and are an important component of carbon and nutrient cycles, accounting for a large proportion of the energy transfer to pelagic fishes and the deep ocean. However, due to the difficulty of measuring zooplankton and their phylogenetic complexity, available zooplankton observations are often sparse in time and space, and come from a range of different observing methods, platforms and data types (biomass, abundance, carbon, size). These limitations have hindered the broad-scale analysis (temporal and spatial) of zooplankton observations and prevented uptake for model assessment. Zooplankton observations being undertaken within IMOS (and by IMOS scientists outside of the program) provide a unique opportunity to bring together discrete yet complementary observations at multiple scales to address these sources of significant uncertainty in numerical models. As part of the IMOS Zooplankton Ocean Observations and Modelling (ZOOM) Task Team we have developed new spatially and temporally resolved products from a large volume of zooplankton data (IMOS and historical). The spatially-resolved products include seasonal maps of zooplankton abundance, biomass and species compositions for the Australian region. We have also value-added to existing IMOS zooplankton data, by provided data often requested by modellers, such as herbivore:carnivore ratios of the zooplankton community, size-spectra, or biomass in different units (e.g. carbon, nitrogen, wet-weight). These new data products will contribute to better assessment and parameterisation of zooplankton groups within numerical models.