

Including gelatinous zooplankton in plankton surveys – challenges, suggestions and potential gain

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Gelatinous zooplankton is reputedly difficult to work with: They are fragile, require special sampling and preservation, and are difficult to identify. Consequently, this important component of the pelagic community is often neglected in zooplankton surveys. We argue that this notoriety is partly undeserved, and suggest that simple measures to include jellies in standard zooplankton surveys can substantially increase both data gained from the sampling effort and our understanding of gelatinous zooplankton diversity and ecology. Even though net sampling has its limitations, plankton nets often remain the most realistic and cost effective sampling method also for jellies. The main issue hindering the inclusion of jellies in zooplankton surveys is thus not unsuited collection methods, but rather the lack of consideration given to them in subsequent sample processing. A major challenge is that many ctenophores cannot be identified or enumerated from samples fixed with standard preservatives. Monitoring personnel should therefore be trained to examine ctenophores from the live sample prior to preserving the rest in formalin. Including a gelatinous zooplankton specialist on surveys is recommended, as it can provide estimates of both diversity and abundances, while also allowing for collection of samples for further e.g. molecular work. Case studies demonstrate how engaging gelatinous zooplankton specialists and slightly modifying sample processing workflows can generate substantial data on gelatinous zooplankton diversity, distributions and abundances without the need to necessarily increase sampling effort. Such data are fundamental both for understanding the role jellies play in the ecosystem and monitoring potential anthropogenic changes in gelatinous communities.

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