

**On the lookout for suitable indicators for the Baltic pelagic food web - a potential evaluation framework**

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Finding a suitable indicator for assessing health status can be cumbersome depending on the system. For closed, small-scale systems such as the human cardiovascular system it might be an easy task where the blood pressure represents a fairly sensitive and robust indicator. In larger-scale, open systems such as marine, pelagic habitat challenges for identifying an optimal indicator for food webs, as required by the MSFD, are by far greater. Particularly the lack of boundaries, the high level of complexity due to species interactions, and the inherent stochasticity hinder a simple solution for assessing the food web status. In this study, we developed a simple framework to statistically evaluate the performance of MSFD D4 indicator candidates based on a set of criteria. We further applied this framework to assess six zooplankton and six newly developed fish indicator candidates for two basins of the Central Baltic Sea (CBS). Following the selection process we identified basin-specific suites of indicators that complemented each other in terms of their responses to anthropogenic pressures. We show that both zooplankton and fish indicators can be suitable for detecting bottom-up and top-down effects. Zooplankton indicators, however, have the advantage to respond faster and relate statistically to a greater range of pressure variables. Contrasting to other regions, abundance-based fish indicators of key species in the CBS performed better than the aggregated and widely adopted large fish indicator. This demonstrates the unlikelihood of a universal indicator and the need of regional evaluations for which our framework can serve as guidance.

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