

## FOOD WEBS

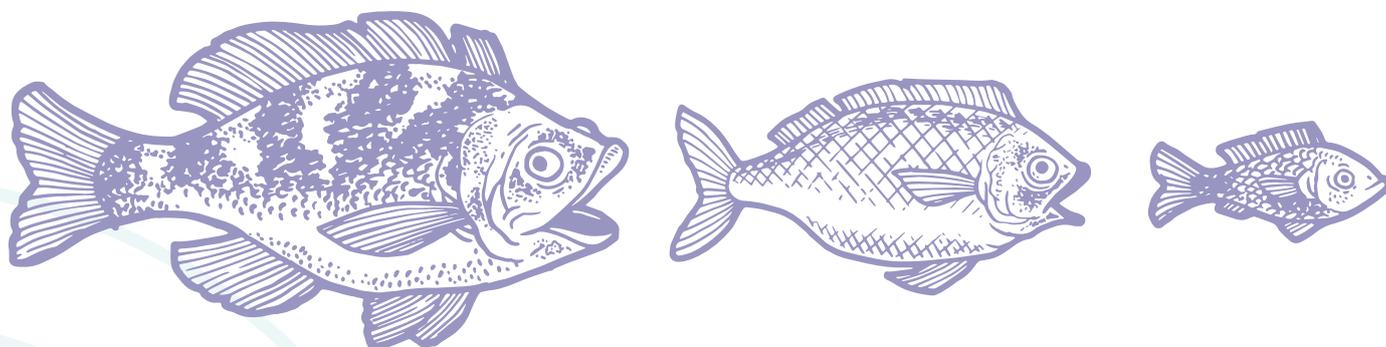
### OSPAR's QUALITY STATUS REPORT 2023 BRIEFING NOTE SERIES

**The functioning of a marine ecosystem is highly dependent on the structure, diversity and integrity of its components and their interactions. Food webs represent networks of feeding interactions between predators and their prey at different levels in the ecosystem.**

Environmental and anthropogenic pressures alter the balance between organisms. Any human activity that has an impact on biota in our marine ecosystems is also likely to have an impact on food webs, and this impact can be local or far away from the site of the pressure. Trends in primary production have been mainly driven by reduced nutrient availability and increasing sea surface temperatures. The latter is the main pressure associated with trends in plankton functional groups. Trends in fish communities are mainly linked to fishing pressures. Marine food webs and the ecosystem's carrying capacity support not only the diversity of life in our seas and oceans, but also many of the ecosystem services that humans very much

depend on. Knowledge of the structure and functioning of food webs is therefore not only key for understanding marine ecosystem functioning and how it may be conserved or restored but also for facilitating sustainable use of our seas in the future.

In the food web assessment, a set of food web indicators demonstrates that the abundances, distribution and productivity of key groups representing different trophic levels are in flux in many of the assessed areas. The production of phytoplankton as well as the second layer of food webs are assessed by analysing changes in zooplankton and ratios between plankton life forms. Fish communities are also assessed, in terms of size structure, species composition and biomass of feeding guilds linking lower trophic levels to predators. The effects of fishing pressures on the structure of demersal fish were analysed by assessing the status of different trophic levels including mesopredators and top predators. Finally, the existing knowledge of all compartments, trophic levels and their interactions is integrated into an assessment of the state of the whole food web.



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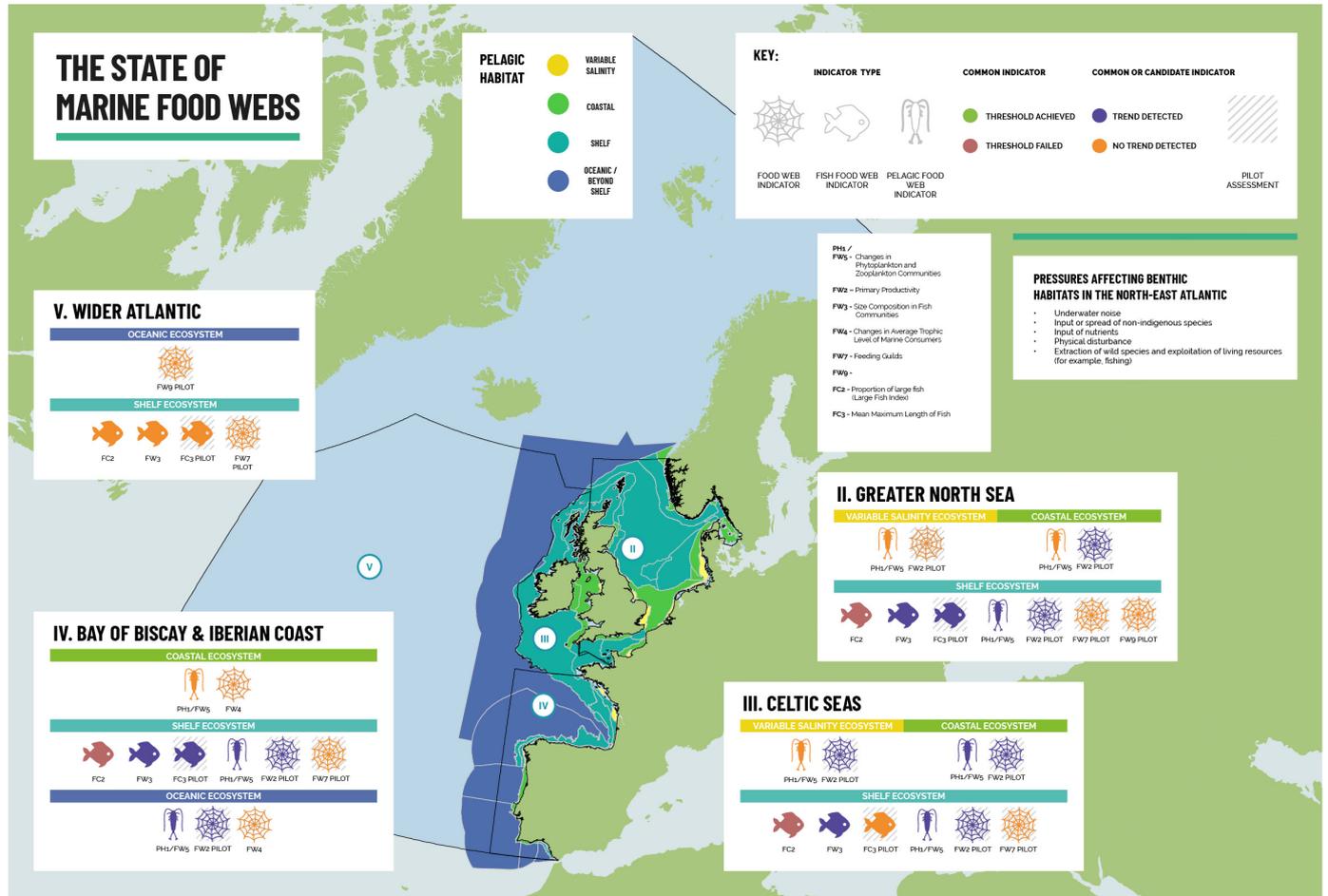
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