

PELAGIC HABITATS

OSPAR's QUALITY STATUS REPORT 2023 BRIEFING NOTE SERIES

Pelagic habitats are open-water environments occupied by floating and suspended organisms, or simply plankton, which occupy the lower tiers of the food web and are the main source of marine production. Short generational times, small size and, for phytoplankton, direct dependence on dissolved nutrients, make plankton particularly sensitive to environmental change. Changes in plankton communities can also affect higher food web levels, such as shellfish, fish, and seabirds, which they support either directly or indirectly.

The growing global population has generated increasing demand for food production, waste disposal, coastal development and energy systems, all of which contribute to human-induced climate change. Climate change is probably the greatest pressure currently impacting plankton communities across the OSPAR Maritime Area. These activities also influence the supply of nutrients entering coastal environments, which can generate eutrophication and impact the productivity of pelagic habitats.

Pelagic habitats in the OSPAR Maritime Area have experienced widespread changes over the past 60 years, with indicator assessments revealing a general pattern of decreasing phytoplankton and zooplankton abundance and / or biomass across the Greater North Sea, Celtic Seas, and Bay of Biscay and Iberian Coast. Long-term trends have largely continued into the current assessment period, and are expected to continue, eventually impacting higher food web levels. Due to widespread changes linked to pressures generated by human activities, the Greater North Sea, Celtic Seas, and Bay of Biscay and Iberian Coast had "Not good" status, under the current definition and categorisation of quality status.

Global efforts to slow climate change are probably the best mechanism to counter widespread changes in plankton communities, although climate change mitigation measures mostly lie outside the remit of OSPAR. Regionally targeted management measures (e.g. controlling inputs of nutrients and organic matter) in coastal areas may affect pelagic habitats at the shelf scale. While these mitigation efforts are only likely to generate noticeable impact in coastal areas, they may also have some effect in areas where plankton communities are affected by the cumulative impacts of multiple pressures (i.e. both warming and eutrophication).

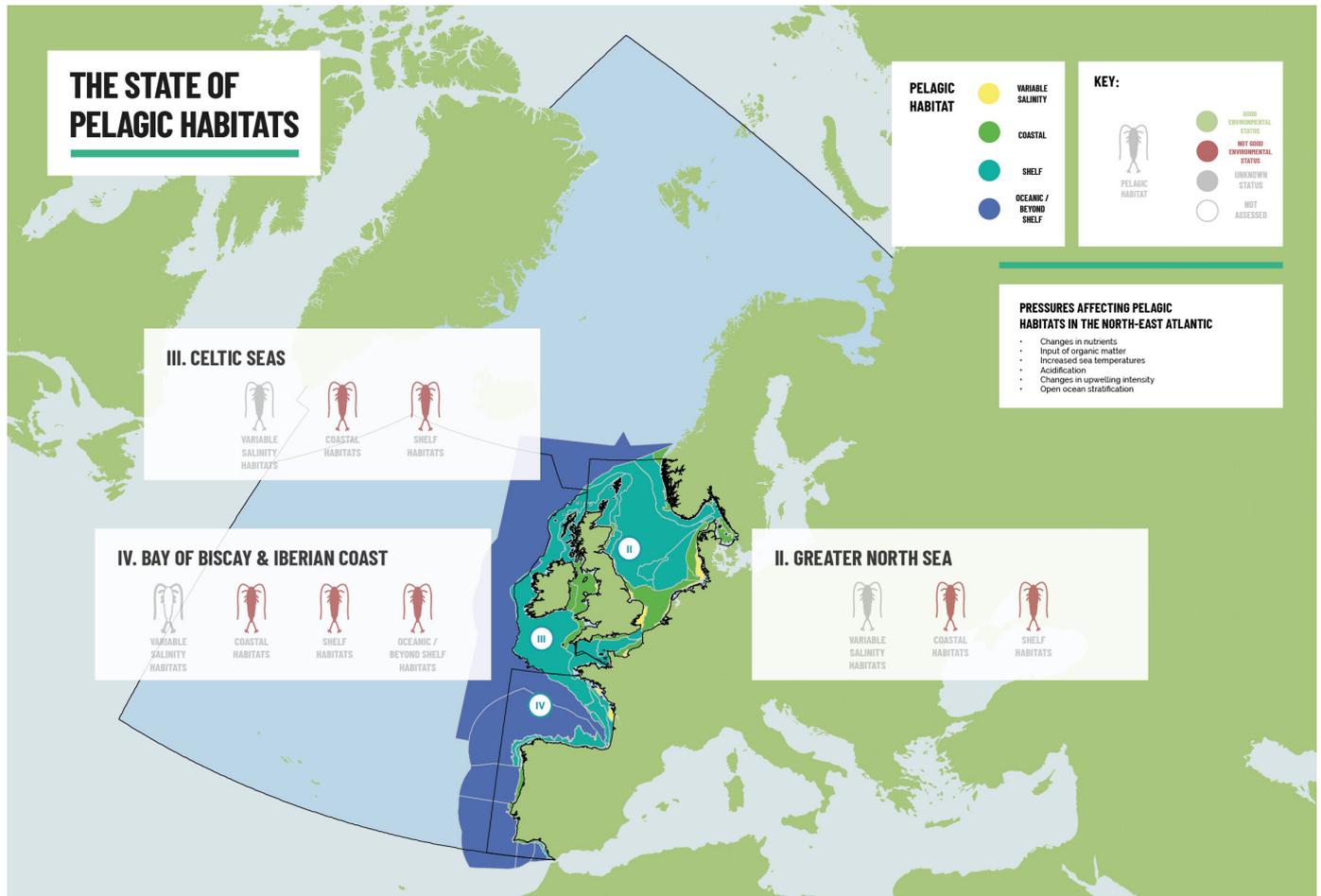
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