Theme session J

What is good pelagic habitat?

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The session was created to address the demands for clearer understanding on what is good pelagic habitat as society is asking for guidance on what is a good or bad pelagic system. Whether or not knowledge providers see the pelagic system as worthy in itself for an individual assessment is an irrelevancy, policy makers have requested that pelagic habitats be assessed and considered in addition to benthic habitats. EU policy (MSFD) requires an assessment of good environmental status for pelagic habitats under descriptor 1, biodiversity and some lobby groups are asking for conceptual development of the challenges around the pelagic system. The recent re-drafting of MSFD descriptor 1 exhibited the opaque nature of understanding of the issues.

The phrase "good environmental status" is a normative phrase. It is probable that a decade ago, we would have been discussing "productive pelagic ecosystems". Now we expect the systems to be in "good status". The good, is in relation to humans; thus probably related to goods and services, and stewardship and conservation for generational equity. So any consideration of good pelagic habitat needs to relate to the perceived priorities and objectives of society at any specific time. What is perceived as good, is likely to change. Presentations illustrated services such as the regulation of ocean circulation and weather, carbon recycling and balance, production of living resources and tourism. Discussions also occurred on whether biodiversity of species or functional biodiversity were more relevant for consideration (no conclusion was reached).

The session, which was attended by 20-40 participants, agreed that the environmental variability of pelagic habitat played a larger role on its dynamics and state than anthropogenic pressures (excluding climate change and extreme pollution events). This means that even assessing "prevailing conditions" is a challenge for pelagic habitat. In most pelagic systems the prevailing conditions are a consequence of temperature, salinity, oxygen, ice cover, carbon dioxide, light and turbidity. The consequences of the behaviour of organisms and the issue of scale (temporal and spatial) further conflates any assessment of prevailing conditions.

When trying to assess GES and scrutinising the achievement of any higher order objectives, many researchers propose the use of the DPSIR, or APSR framework to guide management measures. This poses problems when prevailing conditions are thought to have more impact on the pelagic system than any direct consequence of an activity producing a pressure. Other than the link between fishing/hunting with populations and ecosystem structure, no other direct pressure state relationship was brought as an example to the session. However, many presentations (6 oral presentations and 3 posters) covered the use of surveillance indicators (or metrics) to monitor pelagic community structure; with various groupings including phytoplankton, zooplankton, fish or larger organisms. These were proposed as ways to monitor for change. If an indicator showed an unwelcome trajectory, beyond predefined thresholds, action would be triggered. Either management action or further

research into the drivers of the observed change. Is monitoring the pelagic system for change beyond predefined thresholds enough for society's expectations compared for a forthright statement of what GES is for pelagic habitats?

It is likely to be a great challenge to persuade managers to maintain funding for monitoring when direct links to anthropogenic pressures are not clear, and prevailing conditions are caused by poorly understood, complex interactions. If we already assess the states and pressures associated with invasive species, commercial fish populations, eutrophication, contaminants and marine litter, why should we monitor other components of the pelagic ecosystem? The session concluded that there were many other factors that could impact the goodness pelagic habitat that need to be considered when striving to manage marine activities. Climate change, and environmental variability influencing productivity and distributional changes of organisms being a prime example. The provision of globally important goods and services cannot be overlooked, e.g. regulation of our climate.

It was highlighted during the session, that despite many presenters complaining about the lack of data, the poor provision of monitoring and lack of integrated assessment frameworks, we in the ICES area are blessed with some of the best data sets and conceptual frameworks in the world. The session was encouraged to consider how to transpose any developing framework to other areas of the world.

To sum up. We need to consider what we mean by good pelagic habitat, society tells us to. No one has described what society means by GES for pelagic habitat. "Good" is a normative word which we assumed relates to the provision of goods and services. The pelagic system provides many goods and services, some of global importance. Prevailing conditions are less easy to predict than for benthic habitats, they also vary greatly. Frameworks such as DPSIR may not be relevant as isolating anthropogenic-pressure state relationships proves challenging in many situations. However the session was convinced that certain monitoring of pelagic state and function, linked to action when trajectories move beyond thresholds, was important. This is even in the absence of a definition of GES for pelagic habitat.