ZSL and GINR: Joint memorandum

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Purpose

ZSL (Zoological Society of London) have worked in partnership with the Greenland Institute of Natural Resources (GINR) since 2011. The focus of this collaboration has been to deploy imaging technologies (still and video cameras) to understand the nature and distribution of deep-sea benthic habitats and how they are impacted by commercial trawling, in west Greenland.

It is hoped the following will inform the Greenlandic Government's ongoing efforts to sustainably manage marine resources, specifically in the deep-sea. We understand that the Ministry of Fisheries Hunting and Agriculture is currently reviewing a number of fishery management plans. This memorandum recognises that it is therefore timely to highlight our joint position.

This is a joint statement put together by the benthic research teams of ZSL and GINR, drawing on our shared experiences working together in this field. We recognise that GINR have also made direct contributions to this process independent of ZSL and will continue to do so.

1. Managing seabed resources sustainably

Despite a decade of collaborative research our knowledge of deep-sea habitats in west Greenland is still limited. Researchers have only explored a very small percentage of a vast area. Ecologically important habitats which are sensitive to physical disturbance continue to be discovered, for example: *Desmophyllum pertusum* reef (formerly: *Lophelia pertusa*) in SW Greenland (Kenchington et al., 2016); a soft coral garden VME on the slope of the Toqqusaq Bank, west Greenland (Long et al., 2020); and seapen fields (*Umbellula sp.*) in Melville Bay, NW Greenland (2016 survey). Given the infancy of deep-sea research in west Greenland, we anticipate many more discoveries and therefore recommend a precautionary approach to management.

We recommend the development of an overarching plan for the management and conservation of benthic habitats in Greenland. Such a plan would make provision for all benthic habitats, ensuring that a minimum proportion of every habitat type is afforded adequate protection. In addition it would ensure that there is a systematic approach to the identification and conservation of ecologically important and sensitive habitats, such as vulnerable marine ecosystems (VMEs). This should establish a consistent basis for the protection of Greenlandic benthic habitats, whilst establishing a framework for sustainable management and exploitation of marine resources. We feel an over-arching plan would be more effective, fair and transparent than working on a case-by-case, industry-specific and/or fishery-specific basis, as is current practice.

An overarching plan for the management of benthic habitats in Greenland would also serve as a useful tool in ensuring compliance with international agreements to which Greenland is party (either in its own right, or as a constituent of the Kingdom of Denmark). For example:

The Convention on Biological Diversity (CBD), including Aichi Biodiversity Target 11 that states: "*…10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes*." (CBD, 2010)

The United Nation Sustainable Development Goals (SDGs), including SDG 14, which seeks to: *"conserve and sustainably use the oceans, seas and marine resources for sustainable development*". (UNGA, 2015)

Management should be informed, now and in the future, by the monitoring program of benthic by-catch from the national fisheries assessment surveys in Greenland waters conducted by GINR. This programme is collecting information about benthic communities on the continental shelf and slope, covering depths from 50 to 1500 meters. This should be complemented by other research conducted by GINR, in collaboration with partner organisations, where appropriate. It is expected that partnerships should be premised on the understanding that research should be undertaken collaboratively and shared to promote sustainable natural resource management in Greenland.

1.1 Vulnerable marine ecosystems (VMEs)

The United Nations General Assembly (UNGA) Resolution 61/105 called upon States to take action to protect vulnerable marine ecosystems (VMEs) (UNGA, 2006). The UN-FAO defined VMEs as exhibiting one or more of the following characteristics: i) unique or rare; ii) functionally significant, iii) fragile, iv) containing component species whose life-history traits make recovery difficult; or v) structurally complex (FAO, 2009).

The term VME has been widely implemented by states and regional fisheries management organisations (RMFOs), including the North Atlantic Fisheries Organisation (NAFO) and North East Atlantic Fisheries Commission (NEAFC). VMEs are also explicitly incorporated in the Marine Stewardship Council (MSC) Fishery Standard and assessment process (MSC, 2014).

There is an important distinction between VME indicator species and VMEs. One or more VME indicator species signals the occurrence of VME, where an individual indicator species or community of indicator species, are sufficiently abundant. In the absence of any specific thresholds, this is open to interpretation by scientists, states and regional fisheries management authorities (RMFOs) (e.g. NAFA and NEAFC).

In the interest of consistency and clarity, it may be helpful for Greenlandic legislation and management plans to adopt the UN-FAO definition and recognise the role of RFMOs, experts and scientific consensus in interpreting these.

2. Fishery management plans

Fishery management plans are a useful tool, making an important contribution to sustainably managing seabed habitats. They should be seen as complementary to the principles discussed above, in particular our recommendation for an overarching plan for the management and conservation of benthic habitats in Greenland.

2.1 The offshore Greenland halibut fishery management plan

The following specific comments relate to the ongoing consultation with regards revision of the offshore Greenland halibut fishery management plan.

1. Until an overarching management plan for the benthic habitats in Greenland has been developed, one of the ways to obtain a precautionary approach to management is to limit the fishery to the existing footprint 'a footprint freeze'. It is highly likely that there have been significant impacts on benthic habitats in trawled areas and that these impacts will persist for a considerable time (in the order of decades or longer). A footprint freeze is a pragmatic approach to mitigating future negative benthic habitat impacts. We suggest that this footprint should be explicitly spatially defined (rather than relying on a common understanding). This can be achieved using logbook data held by GFLK. We would point out that determining the existing footprint and defining this spatially, in a way that is pragmatic and enforceable, is not a trivial task. This is likely best achieved through consultation with the relevant stakeholders.

2. The existing draft appears to define vulnerable marine ecosystems as '*corals, sea sponges or sea feathers*'. While these are examples of VME indicator species they are not an exhaustive list. We recommend incorporating the term '*VME indicators species*' with examples given for ease of understanding. Throughout this and other management plans, VMEs (and VME indicator species) should be explicitly defined with reference to the UN-FAO definition, see above.

3. A further issue is the definition of '*high incidence*'. This relies on the thresholds described in the technical conservation measures introduced by Executive Order No. 4 of 30 March 2017 (Government of Greenland, 2017). We understand these thresholds are based on NAFO guidance/expert consultation. However, this guidance and the aforementioned technical measures apply to very large areas and are not context or gear specific. In the halibut fishery, given the large mesh size (100 mm mesh in the wings and 140mm mesh in the cod-end), and the small size and fragility of many VME indicator species in this area, just a few individuals in a haul may indicate a relatively high abundance on the seafloor. A more nuanced approach would be taxa/gear specific thresholds for VME indicator species. This comment is also applicable to other fisheries and their management plans.

4. Fishery management plans should avoid reference to the results of specific studies that have yet to be completed (e.g. *Long et al.*, in preparation). Scientific research is an ongoing process and management plans should reflect that, by making provision to consider and apply <u>all new</u> information/research/studies, as and when they are available.

5. ZSL and GINR are currently working to complete an analysis of imagery from the offshore Greenland halibut fishery area (*Long et al.*, in preparation). We envisage that our analyses will: i) describe the difference between the northern and southern area; ii) identify some of the VME indicator species present in the northern and southern regions; iii) model the impacts of trawling on some of the key benthic macrofauna species (including VME indicator species) in the southern area; and iv) identify any currently known hotspots of specific VME indicator species.

6. It is not envisaged that *Long et al.* (in preparation) will explicitly identify areas of low-sensitivity for possible future fishery expansion. This is for good reasons. Firstly, any expansion will have an ecological impact, which must be considered balancing ecological and economic considerations. Secondly, there have only been a limited number of video sled stations conducted to date (<100), with fewest in the northern area (Baffin Bay). The existing fishery covers some 15,000 km² (Cappell et al., 2017), therefore only a tiny fraction of the existing fishery and adjacent areas have been explored using imagery to date. VMEs and

VME indicator species are inherently patchy in their distribution. Therefore an absence of evidence (i.e. VMEs not seen in an area to date) is not evidence of absence (i.e. it does not confirm VMEs are absent).

7. If a footprint freeze is applied, any future expansions should consider all the available evidence at that time. This includes, but is not limited to: imagery, fishery bycatch records, stock assessment trawl bycatch records and benthic sampling. It is expected that any expansion beyond the footprint freeze area will proceed on a precautionary basis reflecting the specific vulnerabilities inherent in deep-sea habitats (namely very slow recovery from disturbance due to characteristics of slow growth, low fecundity and long generation times typical of low-energy environments).

8. The analyses of *Long et al.* (in preparation) so far suggest that the northern (NAFO 1A+1B) and southern areas (NAFO 1C+1D) of the offshore fishery are fundamentally different in terms of the benthic habitats. It is clear that there is a different ecological community present in these two areas. There are differences in the species present (including VME indicator species). These differences are likely a product of there being different environmental conditions (temperature, currents etc), in the simplest terms the northern area is colder. To date, in terms of benthic habitats, management measures and the MSC assessment have very much considered the offshore fishery (NAFO 1A-D) as a whole. Recognising that there are two distinct regions here, in terms of the benthic community, might be important in informing their future spatial management, especially as our collective knowledge improves.

9. The halibut fishery management plan should make specific reference to the recently described soft coral garden VME on the Toqqusaq Bank, which is immediately adjacent to the southern area of the fishery (Long et al., 2020). We would suggest the introduction of spatial management measure to protect this VME, for example a no-take marine protected area (MPA) and/or the exclusion of bottom contact gears. Specifically, the 486 km² VME area is at depths of 300-600m between 64˚50’ N and 64˚22’ N on the western edge of the Toqqusaq Bank.

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