

SEAFLOOR INTEGRITY

EXECUTIVE SUMMARY



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Fishing with mobile gear is known to affect many characteristics of the seafloor and can destroy or seriously degrade some types of seabed such as maerl and cold water coral beds.

On other seabed types the disturbance caused by mobile gear may be similar to that caused by natural factors such as wave action. A particular problem in determining the level of impact caused by mobile gear is a lack of pre-disturbance data for virtually the entire seabed, and technical and conceptual difficulties in setting appropriate reference conditions in the absence of such data. The Marine Strategy Framework Directive (MSFD) Descriptor Six “Seafloor Integrity” (D6) presents serious challenges because many of the Criteria for its achievement include Indicators which have not been routinely monitored and for which it will be difficult to procure “expert judgements”.

Discussion within the EU member states continues about what should be measured, how these measurements should be made and how different measures should be combined to make decisions on the Environmental Status of the North-East Atlantic Region.

As a result it is currently impossible to make judgements on whether Scottish waters are in appropriate conditions to contribute to “Good Environmental Status” (GES), or on the adequacy of measures currently in place.

What is possible at this point is to recommend how Scottish Environment LINK (hereafter LINK in this document) could approach the assessment of GES, in particular with respect to D6. This includes recommendations on how reference conditions for D6 could be established and what evidence is required to demonstrate appropriate levels of the D6 Indicators.

A key principle underpinning our work here is that “Sustainable Use” of the sea is permitted under MSFD and that for D6 the Indicator levels do not have to be at “reference level” (or even close to it) for this standard to be achieved.

What must be demonstrated is that the seafloor and its associated characteristics and species have the ability to “rapidly” recover to an appropriate reference level.

The current and proposed Nature Conservation Marine Protected Areas (NC MPAs) provide an important test of the current resilience of benthic systems. Unless they demonstrate rapid recovery of the seabed to predicted reference levels it will not be possible to say that the wider seas are being used sustainably. We recognise that the NC MPAs have not been designed for this purpose and are often not typical of the surrounding seafloor. Fortunately the Demonstration and Research MPA (D&R MPA) mechanism exists to conduct time-limited investigations ideal for this purpose.

If MPAs do not demonstrate recovery this would be evidence of unsustainable use of the wider sea area and would require further measures.

This could include larger protected areas or greater restrictions on fishing pressure or gear types. **If the NC MPAs are to contribute to our understanding of sustainable use it is very important that monitoring begin immediately and at sufficient temporal resolution to allow change to be assessed.** Given the cost implications it is essential that a small number of proxies for wider change be identified. We have concerns about the logic of using measures of pressure such as Vessel Monitoring System (VMS) data to assess D6 criteria as these can, at best, indicate current state and will seldom be able to predict whether the use is sustainable for factors relevant to D6.

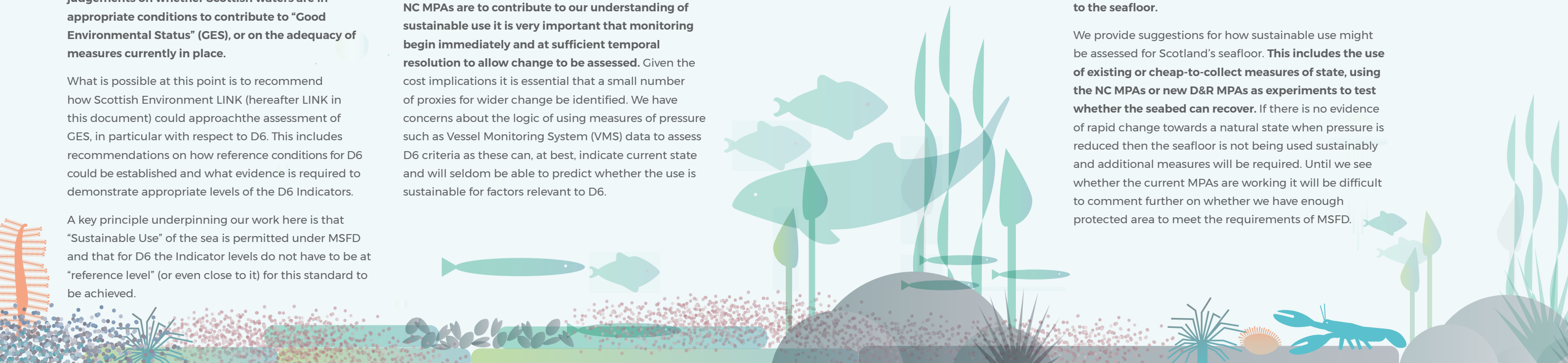
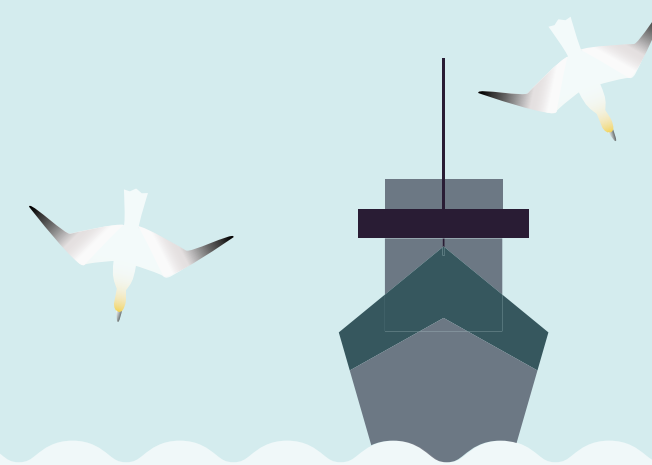
Conclusions

The majority of the questions asked in the tender documents can only be partially answered because we do not yet know what indicators will be chosen for D6, what the target levels will be or how the different criteria and indicators will be aggregated together.

Between these factors it is impossible to say whether current levels of exploitation or extent of spatial management are consistent with GES. The implication of many of the questions is that we currently do not have GES and need to change things to achieve this. This is not necessarily the case and until appropriate assessments have taken place it is premature to suggest additional measures.

What is very likely is that much of Scotland’s seafloor is currently modified from a natural state, but what the relevant natural state for each area of seafloor would be is not known. An extensive review for the JNCC by Hill et al (2012) describes the difficulties involved in setting such reference states. On top of this is the fact that the seafloor does not need to be at, or close to, its relevant reference state to be consistent with GES. **The critical test is whether there is evidence that the seafloor retains the ability to recover to a natural state and therefore retains its full potential for other uses. This is the relevant definition of sustainable use when applied to the seafloor.**

We provide suggestions for how sustainable use might be assessed for Scotland’s seafloor. **This includes the use of existing or cheap-to-collect measures of state, using the NC MPAs or new D&R MPAs as experiments to test whether the seabed can recover.** If there is no evidence of rapid change towards a natural state when pressure is reduced then the seafloor is not being used sustainably and additional measures will be required. Until we see whether the current MPAs are working it will be difficult to comment further on whether we have enough protected area to meet the requirements of MSFD.



This report was written by Charlotte Hopkins and David Bailey of the University of Glasgow and was commissioned by Scottish Environment LINK's Marine Group.

The LINK Marine Group comprises the following organisations:

Hebridean Whale and Dolphin Trust
Marine Conservation Society
National Trust for Scotland
Royal Zoological Society of Scotland
RSPB Scotland
Scottish Wildlife Trust
Whale and Dolphin Conservation Society
WWF Scotland



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