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15/02/2017

## **Wild seaweed harvesting: Strategic Environmental Assessment Report**

The Scottish Wildlife Trust welcomes the opportunity to comment on the Wild Seaweed Harvesting consultation. The practice of seaweed, seagrass and maerl harvesting has the potential to cause considerable harm to the marine environment if not appropriately managed, and the Trust is pleased to see the practice of wild seaweed harvesting brought to consultation.

The Trust's vision for *a network of healthy, resilient ecosystems supporting expanding communities of native species across large areas of Scotland's land, water and seas*, calls for all marine activities to be sited appropriately and consider and maintain the quality, health and biodiversity of the waters it occupies, avoiding significant, cumulative, long-term or irreversible damage to the environment.

With this in mind, and in accordance with Marine Scotland's Strategic Environmental Assessment (SEA) on Wild Seaweed Harvesting, the Trust considers the harvesting of maerl and seagrass, at any scale, should be prohibited and that the practice of large-scale seaweed harvesting should not be permitted in Scottish waters.

Seagrass and seaweed habitats play a vital role in supporting marine ecosystems. As primary producers, they provide an invaluable food source and their structural complexity creates a variety of habitats that are essential to a diverse range of marine life, from small epiphytic species such as sponges and bryozoans to larger mobile species like fish and invertebrates (including many commercially important species). It is, therefore, clear that removing or damaging (i.e. reduced abundance, density or distribution) these valuable habitats will have a direct impact on the health of the surrounding ecosystem.

Healthy seagrass and seaweed habitats also provide a wealth of important ecosystem services that benefit society, most notably improved water quality, coastal protection from water currents and wave action, and carbon sequestration. However, the true extent of these services is still unknown, in particular the carbon sequestration value of 'blue carbon' habitats, and it is therefore essential that they are protected and *enhanced* wherever possible.

### Principle concerns

#### *Maerl harvesting*

The Trust agrees strongly with the findings of the SEA and that the harvesting of maerl for any purpose should be prohibited. Maerl beds are highly fragile and slow-growing habitats (often taking hundreds of years to form) and Scotland's coastal waters are home to some of the largest beds in

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Europe. This structurally complex habitat provides a valuable refuge for many marine species, including important commercial species such as scallops. Therefore, damage to or removal of maerl habitats would be detrimental to the surrounding ecology and could take centuries to recover.

### *Seagrass harvesting*

The Trust believes that the harvesting of seagrass should be prohibited at both large and small scales. Seagrass beds are important nursery grounds for juvenile fish and invertebrates and efforts should be made to protect these habitats. This scarce resource<sup>1</sup> already faces many pressures from marine pollution, development and disturbance, which have restricted its distribution and considerably impacted its health. Additional damage/loss caused by seagrass harvesting would further hinder the recovery of these important habitats.

### *Large-scale seaweed harvesting*

The Trust believes that the large-scale harvesting of seaweed in Scottish waters should not be permitted. Although large-scale seaweed harvesting does take place in other European countries, such as Norway, our current knowledge on the health, abundance, and distribution of seaweed habitats in Scottish waters is not sufficient enough to accurately assess whether harvesting can be carried out sustainably.

The direct ecological impact of removing important nursery and refuge sites is clear, but our understanding of the wider, indirect impacts on marine ecology is less clear. Seaweed habitats are important foraging sites for large marine predators, such as seals and seabirds, and any damage to these habitats could impact their health, distribution and behaviour.<sup>2</sup>

Similarly, our current understanding of the recovery rate of harvested habitats is poor. It has been estimated that seaweed biomass at harvested sites can take approximately four years to recover to pre-harvesting levels, but the associated community of species takes longer to show signs of recovery (recovery time has been estimated to be over five years).<sup>3</sup> It is clear that the large-scale removal of seaweed habitats can have a lasting environment impact, but the extent of this impact is not yet fully understood.

The Trust also considers the methods used for large-scale seaweed harvesting, in particular trawling methods that use large metal teeth to dig into the seafloor and remove the entire plant, to be highly damaging to the seafloor and benthic marine life and should not be permitted. The physical impact of these methods will cause long-term damage and, when considered in combination with equally-damaging bottom-trawl fishing activity, could have a significant cumulative impact on marine ecology.

### *Small-scale seaweed harvesting*

The Trust believes that small-scale seaweed harvesting should only be permitted if the method, intensity of harvesting (e.g. frequency of harvesting and amount removed) and location of harvesting is managed in a sustainable manner. Further investigation into the local ecological

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<sup>1</sup> Scotland's Marine Atlas

<sup>2</sup> Lorentsen S. et al. 2010. Multitrophic consequences of kelp harvesting. *Biological Conservation* 143

<sup>3</sup> Steen H. et al. 2016. Regrowth after kelp harvesting in Nord-Trøndelag, Norway. *ICES Journal of Marine Science* 73(10)

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impact of seaweed harvesting, for marine species and seabirds, is needed and concerted efforts to promote least-damaging and sustainable methods must be made.

To promote sustainability, the Trust suggests developing a code of practice for harvesters that provides guidance on harvesting. This could include, for example: cropping rather than removing the entire plant, harvesting from multiple sites instead of focusing effort in one small area, seasonal variation and optimal harvesting times, and frequency of harvesting.

### *Marine Protected Areas*

The Trust would like to highlight that maerl beds, seagrass beds and kelp habitats have all been identified as Priority Marine Features (PMFs) by Scottish Natural Heritage and are, therefore, marine nature conservation priorities in Scotland. Therefore, the Trust would like to see maerl, seagrass and seaweed harvesting, at any scale, banned in Scotland's Marine Protected Areas.

## Future management

### *Licensing system*

The Trust has concerns that the prevention of large-scale, commercial seaweed harvesting may result in an increase in un-managed, small-scale harvesting activity. The cumulative impact of many small-scale harvesting activities could result in significant ecological damage that equals or potentially exceeds large-scale harvesting, particularly due to harvesting effort being mainly focused along the coastline. Therefore, the Trust would like to see tighter regulation and monitoring of all commercial seaweed harvesting activities.

To ensure small-scale harvesting does not increase to unsustainable levels and to assist with monitoring total seaweed removal and where harvesting takes place, the Trust believes a licensing system for all commercial seaweed harvesting practices should be implemented, requiring all commercial harvesters to own permits. This licensing system should also require all industries that use seaweed products sourced from Scotland to maintain a record of where the seaweed was collected, what volume was collected, the method used, and the time of year the seaweed was collected.

### *Alternatives*

The Trust believes that further investigation is needed into the potential for seaweed aquaculture to meet commercial demand. Studies on the practicalities and economic viability of seaweed aquaculture are already taking place in Scotland (e.g. Scottish Association of Marine Science, Oban and NAFC Marine Centre, Shetland), which show potential for a seaweed aquaculture industry that will have minimal environmental impact and could relieve/remove pressure on natural seaweed habitats.

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The Scottish Wildlife Trust believes that, at present, our understanding of the true environmental impact of seaweed harvesting is insufficient and would, therefore, welcome further investigations into the broader, long-term impacts on marine ecosystems, and stricter regulations on the commercial harvesting of seaweed.

Please could you keep the Trust informed of how this consultation progresses.

Yours faithfully,

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