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Scottish Government
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Dear Sir/Madam

Scoping Report: Marine Biopolymers Ltd - Wild Seaweed Harvesting, West Coast of Scotland

Fisheries Management Scotland are the representative body for Scotland's District Salmon Fishery Boards, the River Tweed Commission and Rivers and Fisheries Trusts. Collectively, our members are the local managers of our native fish and fisheries and make a huge contribution to maintaining and improving our freshwater environment. Both Atlantic salmon and sea trout are migratory species and therefore we take a close interest in coastal and marine developments with the potential to impact on these iconic species. Thank you for the opportunity to comment on the above scoping report.

Despite the efforts of our members, our migratory fish stocks are under pressure, particularly during the marine phase of their life cycle. Marine survival has decreased from a situation where more than 25 adult fish returned to Scotland for every 100 juveniles (smolts) leaving our rivers, to the current situation where less than 5 adults now return. As a consequence, rod catches in recent years have been depressed, with a knock-on effect on fragile rural economies, and reducing the ability of managers to raise money to support management and restoration activities.

We have significant concerns about the proposed development, particularly with regard to the uncertainty surrounding the potential negative effects on Atlantic salmon and sea trout and the integrity of a number of Special Areas of Conservation for Atlantic salmon. Section 2.5 makes reference to a range of protected areas but does not make reference to the SAC rivers for Atlantic salmon and freshwater pearl mussel (which rely on migratory fish to complete their life cycle). Whilst these SACs are limited to the freshwater environment, it is recognised that the protected features also enjoy protection in the marine environment (e.g. licence conditions for marine renewable and offshore wind developments). In addition to Atlantic salmon, District Salmon Fishery Boards have a statutory obligation to protect sea trout. The marine phases of both Atlantic salmon and sea trout are designated as Priority Marine Features - the habitats and species of *greatest conservation importance* in inshore waters.

Section 3.5 of the document makes reference to the adopted list of 81 priority marine features, but fails to specifically note that kelp beds are a priority marine feature in their own right. Kelp forests have been

described as one of the most ecologically dynamic and biologically diverse habitats on the planet¹, and is likely to be an important marine habitat for sea trout (as noted on page 29 of the scoping document) and Atlantic salmon. The scoping document describes kelp beds as a monoculture, whilst also making reference to the range of species associated with kelp forests. This is clearly not the case, and we are aware of no evidence at all to suggest that regular removal of mature plants would be good for the environment. Rather, larger mature organisms are vital to the functioning of the ecosystem, and removal would be likely to reduce the biological diversity of the kelp beds, with the potential to compromise the organisms that rely on them.

Given these concerns, we expect the following issues to be fully addressed within the scope of the Environmental Report:

- Specific assessment of the impact of mechanical kelp harvesting on Atlantic salmon, sea trout and freshwater pearl mussel. This should include loss of marine habitat (including food availability), increased susceptibility to predation, and direct damage during the dredging process on both Atlantic salmon and sea trout, and should consider such impacts in combination with the existing impacts already arising from other marine activities, such as commercial fishing, salmon farming, marine renewables etc. How will any such impacts be mitigated during key life stages, such as immediately following the wild smolt run?
- The specific consequences on wider marine biodiversity. It is stated in the scoping document that the harvested kelp will be of 5 years of age and over, but we seek assurance that mature kelp will be able to fully develop on such a 5-year rolling harvest rather than being maintained at a smaller growth size. The potential greater numbers of smaller plants will not retain the same biological diversity. We also seek clarification that the ability of the kelp beds to retain their environmental and biological function within the water body will not be compromised. In particular the kelp forests ability to reduce wave force and support a wide range of species.
- While the scoping document states that less than 25% of the plants will be harvested we seek clarification on the resulting impacts on the remaining plants. Previous studies would suggest that there are cumulative impacts on wider ecology. It is stated within the scoping document that such impacts are less than the potential loss to natural processes such as storms. However, the cumulative impact of harvesting, *in addition to* such natural processes, taking into account the likely increase in such events due to climate change, should be considered. We seek assurance that kelp harvesting will not compromise the resilience of these crucial habitats to withstand the effects of climate change.
- The scoping document suggests that the removal of the holdfast will promote regeneration, but little evidence is provided for this. As stated above, mature holdfasts form an important habitat for invertebrate species, which in turn are important food sources for a range of commercially and environmentally important species. When harvesting kelp by hand, operators are required to leave the holdfast and some fronds to enable regeneration. We are not aware that there is any evidence to suggest that this practice has been proven wrong or unnecessary. The environmental report should consider all such alternative mechanisms for harvesting kelp, including kelp farming.
- The full environmental consequences of disposal of kelp stipes in the marine environment should be considered, including the potential for significant extra material washing up on the shoreline. For example, the Irish Wildlife Manual referenced above, suggested that the slow decay of kelp stipes can lead to the secreting toxic compounds being secreted, sometimes over a period of 6 months, which hinder spore germination or plantlet growth.

We intend to comment on any subsequent license application and environmental report, but one element we believe needs further consideration is the means by which such developments should be licensed and planned in a strategic manner. The Marine (Scotland) Act 2010, set out proposals for a system of marine spatial planning, which has yet to materialise in any meaningful way. We therefore seek further information on how the cumulative effects of several operators will be planned and enforced. There would

¹ Kelly, E. (ed.) (2005) The role of kelp in the marine environment. Irish Wildlife Manuals, No. 17. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

seem little point in the applicant only harvesting a set proportion of kelp within an area, if a second operator subsequently compromises this. The very wide area of search set out in the scoping document only exacerbates these concerns. Finally, we seek assurance that, should the proposal be consented in its current, or altered form, the proposed harvesting strategies are fully monitored and enforced by Marine Scotland.

Having considered the scoping report, we remain concerned that the mechanical harvesting of kelp will have a number of currently unknown and unquantified impacts on the marine ecology of the West Coast of Scotland. There is little evidence in the scoping document to suggest that the impacts of the Norwegian industry have been fully quantified and understood, particularly in relation to salmon and sea trout and we consider that it is premature to countenance the mechanical harvesting of kelp on the Scottish west coast.

Please do not hesitate to contact me if you require any further information.

Yours faithfully,

A handwritten signature in cursive script that reads "Alan Wells".

Dr Alan Wells

Chief Executive – Fisheries Management Scotland