



PROJECT SEAGRASS

Project Seagrass
Sustainable Places Research Institute
33 Park Place
Cardiff
CF10 3BA
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Dear DEFRA Marine Conservation Team,

Project Seagrass (www.projectseagrass.org) is an environmental charity (registered in England & Wales as well as in Scotland) devoted to the conservation of seagrass ecosystems through education, influence, research and action. Project Seagrass was founded in 2013 by a group of internationally recognised experts in seagrass ecology and management. We would like to use our expertise in this field to make a response to the Consultation on the third tranche of Marine Conservation Zones in England.

As seagrass scientists we praise the UK government on the inclusion of areas of seagrass in the first two tranches of MCZs (namely Torbay, the Needles, Isles of Scilly, Blackwater, Whitsand and Looe Bay, Mounts Bay), we also recognise that seagrasses exist within a number of SACs. This progress needs to be recognised and can only be a positive step towards protecting the biodiversity and productivity of our coastal seas. At Project Seagrass we believe this progress needs to be built upon through more MCZ designations for reasons of economic importance to the UK.

Our knowledge of why seagrasses in the UK, the wider North Atlantic region and globally are important is rapidly growing. Seagrass meadows in this region are of fundamental importance for the support of economically and socially important fisheries, which are also critical for our long-term food security. Recent analysis has found that 20% of the world's biggest fisheries are supported by seagrass meadows (Unsworth et al., 2018). In the UK we now have data that clearly articulates the value of these systems in supporting juvenile fish assemblages of commercial importance (e.g. Atlantic Cod, Bass, Herring, Pollack, Whiting) (Bertelli and Unsworth, 2013; Lilley and Unsworth, 2014; Peters et al., 2014) and evidence that supports these patterns across the region (Jackson et al., 2001; Stål et al., 2008; Unsworth et al., 2018). We also have increasing evidence for why seagrass in the UK (including sites in England) is of importance for trapping and storing carbon dioxide from our atmosphere (Green 2018 data in prep, Rohr et al 2018 data in prep). Seagrasses also have many other values such as stabilising beaches, filtering pollutants and harbouring high biodiversity (Lamb et al., 2017; Nordlund et al., 2016).

The spatial coverage of seagrass meadows in England (and UK wide) has been decimated over the last century (Jackson et al., 2013). Although quantitative estimates of this loss remain difficult to establish, there is sufficient evidence to suggest that this could be up to a 50% loss of original area (Airoldi and Beck, 2007). The reasons for these losses appear to be an interaction between poor water quality, disease and coastal development. Unfortunately seagrass in the UK is still subject to widespread stressors and loss continues unabated in many locations, primarily due to poor water quality, coastal development and the impacts from boats (Jones and Unsworth, 2016; Unsworth et al., 2017). The value of seagrass and our historic loss of this important habitat necessitates that we prevent all further loss and that we begin to restore this productive habitat throughout the UK.



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Seagrass is highly susceptible to anthropogenic impact and its rapid response to environmental change makes it a very good sentinel of the marine environment, hence its use within the Water Framework Directive. Due to its high ecological value, wide potential distribution and its sentinel status its condition effectively provides a form of check on the success of management actions in which it is included such as in MCZs.

In four of the proposed Tranche three MCZs we are aware that seagrass is present (Helford, Bembridge, Purbeck Coast, Studland Bay). In a fifth site (Yarmouth to Cowes) from evidence collected by the Wildlife Trusts we understand that the demarcation of the proposed MCZ narrowly misses out on covering a large seagrass area. In at least four of these sites we have evidence to suggest that seagrasses are under threat, have declined in coverage and require specific protection in order to improve their condition.

- 1) At Helford, seagrass loss has been extensively documented (Hockings and Tompsett, 2002). Historic loss has been primarily in the intertidal range, but additional recent documentation of loss of subtidal seagrass through boat moorings has also been documented (Unsworth et al., 2017).
- 2) At Studland bay we have data that clearly shows the excellent environmental health of the seagrass (Jones et al., 2018; Jones and Unsworth, 2016), however there is a range of
- 3) At the two sites around the Isle of Wight (Bembridge and the Cowes to Yarmouth area) we understand that eutrophication causing algal overgrowth is problematic for seagrasses (Jones and Unsworth, 2016).
- 4) We suspect that boating impacts may also be of concern for the seagrass at Cowes to Yarmouth, however we have no quantified data on this.

At Project Seagrass we firmly believe that marine conservation in England needs to be ambitious so that our natural resources are protected for future generations, not only in their current state but we should seek to improve the status of these resources in order to maximise this value for efficient ecosystem service delivery. Improved status means restoring the historic distribution of seagrass in these areas, at project Seagrass we request that embedded in the founding documents of these MCZs is a commitment to the restoration of seagrass.

We wish to state our request that seagrasses in England are protected to a much greater extent through the designation of Helford, Bembridge, Purbeck Coast, Studland Bay as full MCZs with specific reference to the protection of seagrass. We also wish to state our request that the Yarmouth to Cowes proposed MCZ is designated, but with a revised border that includes the coverage of the important seagrass meadows.

Below is some further information about the importance of seagrass in the UK, the status of our meadows and the need for protection. If you would like any further information about seagrasses globally or in the UK please do not hesitate to get in contact.

Yours sincerely,

Dr Richard Unsworth FRSB, CMarSci, FHEA
(on behalf of the directors of Project Seagrass)



The key reasons why seagrass needs to be protected are:

- Seagrasses support valuable fisheries by providing shelter for many species of fish and invertebrates as juveniles and adults, these fisheries provide support for many people across the UK
- Once degraded it is unfeasible to restore seagrass, as the process is costly and has a low success rate. Relying on the natural recovery of seagrass areas is not an option
- Seagrass meadows are sensitive habitats, the rate of degradation of loss of these areas is increasing
- To meet the UK's obligation under the EU habitats directive by *maintaining the extent and distribution of seagrass and liaising internationally to exchange conservation and restoration knowledge*
- Seagrass is a protected habitat under the UK biodiversity action plan, the UK government in the 1990's had intended to increase the coverage of seagrass by at least 1000ha but failed this target
- Seagrass is one of the only true marine angiosperms, under the EU water framework directive (WFD) angiosperms are listed as biological indicators of coastal water quality. It is the UK's obligation to protect seagrass based on the listing of seagrass in the WFD
- Seagrass is listed as a threatened and declining habitat under OSPAR
- The value of seagrasses in storing carbon is now recognised under the Paris Climate Agreement

The ecosystem goods and services that seagrasses provide are:

- Shelter and food for a wide range of fish species, some of which are key fisheries species (such as cod, plaice, pollock & whiting) and provide support for many people living in the UK
- Act as a buffer, protecting our coastlines from storms and erosion
- Act as a water filter, improving the clarity and quality of our coastal water by using up excess nutrients and filtering larger particles
- Bind to the sediment and stabilise the particles, improving the water quality by preventing re-suspension of particles
- Store large quantities of Carbon from the environment, estimated at 83,000 tonnes of Carbon per km² of seagrass meadow (WWF Living Blue Planet Report).



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