

Highly Protected Marine Areas - Call for Evidence

Independent review response by Wildlife and Countryside Link and Northern Ireland Marine Task Force

October 2019

Wildlife and Countryside Link (Link) is the largest environment and wildlife coalition in England, bringing together 54 organisations to use their strong joint voice for the protection of nature. Our members campaign to conserve, enhance and access our landscapes, animals, plants, habitats, rivers and seas. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.

This response is supported by the following Link members:

- ClientEarth
- Friends of the Earth
- Greenpeace UK
- Institute of Fisheries Management
- Marine Conservation Society
- MARINELife
- ORCA
- RSPB
- The Wildlife Trusts
- Whale and Dolphin Conservation
- WWF UK
- Zoological Society of London (ZSL)

EXECUTIVE SUMMARY

It is the ocean's capacity for supporting life and providing resilience that will be key in our efforts to reverse environmental decline and avoid ecosystem collapse. However, consistent reports from the IPCC¹, UN², the UK Government³ and others warn that our ocean is reaching a critical turning point. In the context of these warnings, international commitments and the UK Government's declaration of a climate and ecological emergency, there must be a step-change in ambition to protect, preserve and recover our domestic marine environment. A key step to achieving this is for Government to deliver on their ambitions to protect 30% of global oceans by 2030 by designating Highly Protected Marine Areas in our domestic marine waters. These sites will play a critical role in the recovery of our ocean whilst simultaneously delivering the UK's existing legal commitments and international ambitions.

DETAILED RESPONSE

Part 1: HPMAs aims, opportunities and challenges

Question 7: To what extent do you agree with the following reasons for introducing HPMAs?

Please could you answer on a scale from 1 meaning 'strongly disagree' to 7 meaning 'strongly agree'.

¹ <https://www.ipcc.ch/srocc/home/>

² <https://www.ipbes.net/global-assessment-report-biodiversity-ecosystem-services>

³ https://consult.defra.gov.uk/marine/updated-uk-marine-strategy-part-one/supporting_documents/UKmarinestrategypart1consultdocumentfinal.pdf

- to provide marine areas a chance to return to as natural a state as possible: **Strongly agree**
- to provide a reliable measure of what recovery could look like if all damaging human activities were removed: **Strongly agree**
- to act as no take zones, allowing commercially fished species to recover and for these benefits to spill outside of the protected area: **Strongly agree**
- to better protect sensitive and/or ecologically important species and habitats: **Strongly agree**
- to look after our seas as part of our duty as stewards of the natural environment: **Strongly agree**
- to better prevent or lessen the effects of climate change, for example to protect habitats that can capture carbon or protect species that are vulnerable to a warming ocean: **Strongly agree**
- to preserve and increase opportunities for nature-based tourism: **Agree**
- to support or improve opportunities for cultural, spiritual, educational and/or recreational activities: **Agree**
- other – please specify
 - **To deliver the UK's domestic and international obligations**

The UK is subject to a number of domestic and international legal obligations that require it to protect and preserve marine ecosystems, and to restore marine areas that have been adversely affected by human activities. The UK Government is also backing, and seeking international support for, global action to protect 30% of the world's oceans by 2030 - to help address biodiversity loss and ensure resilience in the face of the global climate emergency. The introduction of Highly Protected Marine Areas (HPMAs) in the English inshore and offshore and Northern Ireland offshore zones will be a vital tool to enable the UK to deliver these obligations and show global leadership in the long-term protection and sustainable management of our precious marine environment.

In particular, the introduction of well-managed and effectively monitored HPMAs would assist compliance with the following key legal provisions:

1. Regulations 4 and 5 of the Marine Strategy Regulations, which oblige the Secretary of State to take necessary measures to achieve or maintain good environmental status of marine waters by 31st December 2020. Those measures include developing a marine strategy in order to “*protect and preserve the marine environment, prevent its deterioration or, where practicable, restore marine ecosystems in areas where they have been adversely affected*”. HPMAs will play a particularly significant role in supporting the achievement of GES for descriptor 1 of the UK Marine Strategy on biodiversity.
2. Section 125 of the Marine and Coastal Access Act 2009 (MCAA), which obliges public authorities to exercise their functions in the manner which the authority considers best furthers the conservation objectives stated for the relevant protected area. The introduction of HPMAs will also help deliver an ecologically coherent network of sites pursuant to section 123 MCAA.

3. Article 13 of the Marine Strategy Framework Directive, which obliges Member States to identify the measures that must be taken in order to achieve or maintain good environmental status, which includes the establishment of marine protected areas.
4. Article 3 and Article 6(1) of the Habitats Directive, which requires that certain habitat types be maintained or restored to a favourable conservation status.
5. Target 11 of the Convention on Biological Diversity, which states that by 2020 at least 10 percent 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 landscape and seascape”*.
6. Article 2 of the OSPAR Convention, which obliges contracting parties to *“take the necessary measures to protect the maritime area against the adverse effects of human activities so as to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas which have been adversely affected.”*
7. Sustainable Development Goal 14.2, which states that by 2020, signatories must sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.
8. Sustainable Development Goal 14.5, which states that by 2020, signatories must conserve at least 10 percent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.
9. UNCLOS Article 145, which mandates that *“necessary measures shall be taken [...] to ensure effective protection for the marine environment from harmful effects which may arise from such activities. To this end the Authority shall adopt appropriate rules, regulations and procedures for [...] the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment.”*

Whilst there is no explicit reference to HPMAAs in existing legislation, it is clear that a range of protection levels will be necessary for the implementation of a network of effective Marine Protected Areas (MPAs). Indeed, IUCN guidance⁴ on the delivery of effective conservation action through MPAs acknowledges that the primary focus of any MPA must be the conservation of biodiversity. On that basis, there need to be different categories of MPAs, including fully protected areas that are “no-take” zones (NTZs), to effectively conserve some of the most at-risk areas.

As we will discuss in further detail in our response to question 9 below, the UK is falling far short of complying with the obligations set out above. In particular, the recently published assessment⁵ of GES for part one of the UK Marine Strategy highlighted that the UK is failing on 11 out of 15

⁴https://www.iucn.org/sites/dev/files/content/documents/applying_mpa_global_standards_final_version_050418.pdf

⁵https://consult.defra.gov.uk/marine/updated-uk-marine-strategy-part-one/supporting_documents/UKmarinestrategypart1consultdocumentfinal.pdf

indicators needed for healthy seas, demonstrating that the UK is failing to fulfil its legal commitments. In the context of the declaration of a climate and ecological emergency, and the recently published UN report⁶ on biodiversity that marked overfishing as the biggest cause of biodiversity loss in our ocean, the UK needs to show much greater ambition to protect, preserve and restore our marine environment. The introduction of HPMAs would contribute enormously to the delivery of both this ambition and the UK's existing legal commitments, and would represent a step change in the status quo.

Question 8: Do you have any experience or examples relevant to the UK where you believe HPMAs or similar have been effective or ineffective? Please provide any relevant evidence.

Lyme Bay – Statutory Instrument protects reefs from bottom trawling

The Lyme Bay Reefs are one of Britain's most spectacular marine landscapes - yet they were once in danger of complete destruction. More than 300 species of plants and animals live there, including the nationally protected pink sea fan and the extremely rare sunset cup coral. These are accompanied by a host of colourful sponges, sea fans and starfish. However, this underwater community is exceptionally fragile. Just a single pass from a heavy scallop dredge is enough to destroy the corals and damage the underlying rock. After years of campaigning by The Wildlife Trusts in 2008, a Statutory Instrument (SI) was implemented to protect 206km² of Lyme Bay from bottom trawling. Other forms of fishing, diving and other recreational activities are still allowed to take place. While scientists estimated it could take up to 20 years for the reefs to recover fully from dredging, studies by Plymouth University showed there were already signs of recovery just two years later. Research also found that potting fishermen targeting the closed area were benefiting from increased incomes and that visitors were having improved diving and angling experiences.

Lundy – First legally enforced No Take Zone

The Lundy NTZ is a small patch of the Bristol Channel off Lundy's east coast in which all fishing has been banned for reasons of nature conservation. It is the first legally enforced no-fishing area in UK waters. Whilst the NTZ is modest in size (4km²) it contains a great variety of habitats and species, many of which are commercially and nationally important. The NTZ was set up by Lundy Management Forum working with Devon Sea Fisheries Committee in 2003 and annual monitoring continues to investigate the effects of the zone on the habitats and species it is designed to protect. Tourism and fisheries are the two economic sectors which benefited most from the Lundy NTZ designation. Regarding the ecological effects of the NTZ, in the first 5 years after the closure studies found increases in the abundance and average size of landable and under-sized lobsters, both within and adjacent to the protected area. Further research also suggested that in addition to providing long-term benefits for Lundy's marine wildlife, the NTZ designation has also helped replenish shellfish stocks in surrounding areas too. Regarding tourism, some businesses have seen significant growth after the introduction of the NTZ, which was attributed to the increased publicity surrounding Lundy and the marine reserve because of its designation.

⁶<https://www.dropbox.com/sh/yd8l2v0u4jqptp3/AAACtf6ctsoUQ9hIPQxLpVsKa?dl=0>

Strangford Lough, Northern Ireland

Strangford Lough is the largest sea lough in the UK and Ireland with internationally important species and habitats. In the 1980s, it was designated as a Special Area of Conservation (SAC) for various features, including rare horse mussel (*Modiolus modiolus*) reefs which were considered to be unique within Europe. However, extensive damage was caused to the reefs by commercial trawling and dredging throughout the 1980s and 90s. Following formal complaints made by Ulster Wildlife to the European Commission, a *Modiolus* Restoration Plan was implemented by the Department of the Environment and the Department for Agriculture & Rural Development (now merged to form DAERA). The Restoration Plan included a Non Disturbance Zone within the lough, excluding commercial fishing and any other potentially damaging activities. In 2019, DAERA announced that initial signs of recovery of the *Modiolus* reefs have been observed, with clumps of individuals and associated species. Further monitoring activities in 2019 will investigate the full extent of reef recovery.

Lyme Bay – voluntary agreements fail to protect nature conservation interests

In the early 1990s, following survey work by Devon Wildlife Trust in Lyme Bay, a recommendation was made that seven reef systems in the eastern part of Lyme Bay should be included within a Voluntary Marine Conservation Area (VMCA) and Codes of Conduct should be developed to control activities that would further damage the reefs.⁷ It was already considered that a further reef system in the eastern part of the Bay had been destroyed by fishing activity (the Exeters). At the time there was no appetite from Government to protect these important habitats from damaging activities. Further survey work in the late 1990s supported subsequent discussions on the management of the area and helped to inform the development of a voluntary agreement in 2001 between local fishermen and Devon Wildlife Trust which excluded scallop dredging from the area around two of the reefs. In the winter of 2005/06, Devon Wildlife Trust received reports of substantially increased scallop dredging activity in Lyme Bay, including a significant increase in the numbers of vessels operating in the area and fishing activity within the voluntary closed areas. The initial voluntary agreements with the local fishermen broke down because fishermen from outside the area were ignoring the new agreements. The Devon Wildlife Trust subsequently found voluntary agreements to be “worthless in the face of economic pressure”.

Voluntary arrangements often not suitable for MPA management

An investigation into the use of voluntary marine management in the protection of UK marine biodiversity⁸ concluded that where voluntary approaches have been successful, this has occurred within small communities, or to address single, simple issues or “easy wins”. Conversely, statutory approaches are generally the preferred option when significant economic activities need to be addressed, and in complex “hot spots” of activity where multi-activity management is necessary. Experience shows that the reliance on voluntary measures to deliver a high level of protection to vulnerable habitats and species is not appropriate, suggesting that a stronger statutory route would be the most suitable mechanism in the face of strong economic pressures. Importantly, successful voluntary approaches do not result from a top-down process – evidence is clear that the success of voluntary management in small communities is due to a bottom-up approach, initiated by community

⁷ Lyme Bay Reefs. A 16 year search for sustainability. Devon Wildlife Trust, October 2007.

⁸ Prior, S (2011). Investigating the use of voluntary marine management in the protection of UK marine biodiversity. Report to Wales Environment Link

members, with local leadership and broad community support in the absence of a statutory framework. This has occurred not as a result of Government initiation, but through community action.

Question 9: Do you see any challenges to the introduction of HPMA's? If so, how could these challenges be addressed? Please provide any relevant evidence.

Reference area recommendations - lessons from the past.

Recommendations for HPMA's (referred to as reference areas) were first developed by the Regional MCZ Projects based on the Ecological Network Guidance produced by Natural England and the Joint Nature Conservation Committee.⁹ The design principles were strongly linked to The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) guidance on developing an ecologically coherent network of MPAs.¹⁰ During the time of the Regional Marine Conservation Zone (MCZ) Projects it was hoped that reference (or Highly Protected) areas would achieve their reference or unimpacted condition, setting a benchmark against which other areas of the marine environment could be compared. Yet, recommended reference sites put forward by the Regional MCZ Projects proved to be controversial and never came to fruition due to concerns expressed by some stakeholders. Furthermore, the MPA Science Advisory Panel and the Statutory Nature Conservation Bodies found that the reference area recommendations did not meet the requirements of the Ecological Network Guidance, in that principally they were too small to be viable. As such Defra did not designate any at that time. Rather they committed to conducting a further review, which was carried out by the Centre for Environment, Fisheries and Aquaculture Science (CEFAS).

To avoid a repeat of this problem, the UK Government must ensure that these HPMA's or reference sites should follow the same criteria that apply to the whole network: large enough, and of sufficient number to monitor and learn from. This is key if we are to understand how protected areas can help our seas to recover.

Measuring success of HPMA's

The time taken for designated HPMA's to yield full ecological benefit is unknown and will depend on what is protected and the level and spatial area of that protection. Metrics such as size or abundance of certain species may yield positive benefits in 1-5 years, whereas metrics such as diversity and habitat complexity may take longer.

Appropriate measures of HPMA success or ecological recovery must be developed, based on regular and robust ecological monitoring over appropriate and realistic timescales.

Monitoring HPMA's

Appropriate regular scientific and ecological monitoring of the full MPA network is difficult given restricted funding, capacity and logistical issues. Therefore, to a large extent we are unable to know whether current management measures in our MPA network are delivering against their objectives. However, reporting under the Birds and Habitat Directives and the recent State of Nature report,

⁹ JNCC and Natural England (2010) Marine Conservation Zone Reference Areas: Guidance document for regional MCZ projects. Draft document, v1.1. 9pp

¹⁰ OSPAR (2006) Guidance on developing an ecologically coherent network of OSPAR Marine Protected Areas (ref. no 2006-3)

suggest that current management measures need significant improvement to halt further decline of biodiversity. Regular monitoring in a number of HPMA's could make effective monitoring more cost effective as monitoring HPMA's would represent a subset of the MPA network. This would allow us to document what recovery at sea looks like. This approach will also enable us to determine which management strategies are most successful, which can then inform the decisions we take in relation to the broader MPA network.

The Government have spent millions designating the MPA network, yet despite ten years passing since the MCAA was implemented, the current level of resource is failing to reverse the fortunes of the marine environment. Given the benefits our ocean provides for our natural environment, well-being and economy, it would be wasteful not to invest sufficiently in additional resources. These are required to deliver robust monitoring, including ensuring compliance, of all HPMA's, which would contribute significantly to recovering the degraded marine environment. More specifically, the Statutory Nature Conservation Bodies would be responsible for HPMA monitoring and these activities need to be resourced on a guaranteed on-going basis from central Government.

Compliance and enforcement

Demonstrating compliance with management measures is essential to the success of the network. Advancement in technologies offer new opportunities for ensuring compliance and improving enforcement. These include, but are not limited to, monitoring techniques such as remote detection, Boat Tracking Systems (BTS) and iVMS. Effective enforcement also requires well-trained personnel that have the necessary resources to fulfil their role and that can impose dissuasive and proportionate penalties that genuinely act as a deterrent to non-compliance and illegal activities.

Other challenges to HPMA introduction?

Adequate laws are necessary to provide simple, clear and effective rules that facilitate compliance and community buy-in. Whilst there is nothing in the existing legal framework that prevents the introduction of HPMA's, the legislation could be vastly improved to ensure their effective implementation.

The MCAA provides for the establishment of MCZs that are intended to protect species and habitats of national importance. However, the duties and obligations set out in the MCAA are inadequate to deal with the complexity and magnitude of the threats to marine biodiversity. This is evidenced by the assessment of GES for part one of the UK Marine Strategy that the UK is failing on 11 out of 15 indicators needed for healthy seas. The current approach set out in the MCAA focuses on maintaining habitats as they are, even if in a degraded state. Clearly, the UK must go further than the existing legislation in order to truly allow our ocean to recover and meet the government's goal to leave the environment in a better state than that in which it was found.

The MCAA gives authorities wide discretion in both the designation and management of MCZs. In particular, section 125 MCAA places a duty on public authorities to carry out their functions in the manner that they consider best furthers – or *least hinders* – the conservation objectives. This duty only applies where such functions may have a *significant effect* on the MCZ. Such a weak duty would not be appropriate in relation to HPMA's, which require robust protection in order to deliver their objectives.

Further, section 126 MCAA allows authorities to balance the public benefit of allowing a certain activity against the risk of environmental harm to the site. Given IUCN guidance that the primary focus of any MPA must be the conservation of biodiversity, it clear that this exemption is not appropriate for the introduction of HPMA (or indeed in relation to the existing MCZ network).

Lastly, there is no penalty if an authority fails to exercise its functions in relation to the conservation objectives of an MCZ. Under the terms of section 128, the only recourse is that a statutory nature conservation body can “obtain an explanation”. This is clearly insufficient to support well-regulated and effective HPMA.

A sound legal framework to support HPMA should include the following:

- A set of clear and legally binding principles and conservation objectives. In particular, the main objective of any HPMA should be that both the site and its features are restored to their entirely natural state (or as close to this as possible). This would require focussed management on not just particular features of the HPMA, but biodiversity more widely. This objective should not be balanced against considerations of public benefit.
- The restriction of all extractive uses, including commercial fishing. The recently published UN report on biodiversity highlighted that overfishing is the biggest cause of marine biodiversity loss. To ensure effective protection, fishing must be banned from HPMA. This will allow for recovery from past damage, and will in fact improve fishery yields in the longer term.
- A precautionary approach to HPMA management. Given our limited knowledge of the marine environment, pursuing a precautionary approach to the management of HPMA is essential. Where there is a risk of harm to marine biodiversity in a HPMA, authorities must err on the side of caution and base management decisions on the best available scientific advice.
- Effective monitoring. This serves two purposes – firstly, to contribute to vital scientific data to establish the effectiveness of a HPMA, and secondly, to detect and prevent illegal practices.
- Effective enforcement. This requires well-trained personnel that have the necessary resources to fulfil their role. In addition, it is essential that authorities can apply dissuasive and proportionate penalties that genuinely act as a deterrent to non-compliance.
- In order to ensure that the implementations of HPMA is as successful as possible, community buy-in is essential. Strong and clear legislation that is simple to understand and follow will be vital in fully involving the community in the establishment of HPMA, which will in turn greatly help ensure compliance with the rules.

Question 10: What is your opinion of the evidence for HPMA? Where is more evidence required?

Thanks to sustained monitoring of MPAs around the world we have accumulated a reasonable understanding of the potential ecological and socioeconomic impacts of HPMA designation.

Despite some variability, the HPMA evidence base presents a strong argument that HPMA introduction (where damaging activities are prohibited) could deliver significant ecological and societal benefits. This is most obvious in terms of increased abundance, diversity and biomass of organisms within protected areas. More specifically, the CEFAS review¹¹ demonstrated that HPMA

¹¹ CEFAS. 2016. Review of Highly Protected Marine Areas - Final Report (MB0139 Final Report)

could deliver conservation benefits in temperate waters (e.g. higher density and biomass of protected species, and in some cases diversity of their assemblages) beyond those afforded by other types of MPAs. HPMA of all iterations (where conditions are held at the upper end of favourable) deliver conservation benefits beyond partially protected counterparts with NTZs providing the strongest ecological outcome^{12,13,14,15}. An analysis of 69 biological measures demonstrated that HPMA had a huge benefit to the densities (doubled) and biomass (tripled) of marine organisms.¹⁶ Furthermore, in well managed NTZs biodiversity and mean size can increase by 20-30%.¹⁷

In temperate European marine reserves (UK, France, Spain and Italy) the introduction of strict marine protection increased fish and invertebrate biomass by 238% and density by 116%.¹⁸ These findings have been largely supported by other systematic reviews, where temperate NTZs and temperate reefs showed similar ecological improvements. Furthermore, the ecological benefits of HPMA designation has been shown to 'spill-over' the boundaries of the protected area and into surrounding waters, improving their ecological status. While many thought that it would take decades to observe recovery within our seas, studies of Lyme Bay Reefs, where an area has been closed to bottom-towed trawling and dredging, has demonstrated recovery of reef habitat and species in as little as two years as well as an increase in landings outside of the closed area.¹⁹ Further, strict protection through designation of marine reserves will have knock-on benefits through the food chain, including for marine top predators, such as marine mammals and seabirds.

The ocean is the largest global carbon sink, and thus plays a vital role in the global carbon cycle. In addition to carbon being sequestered within the oceanic sea bed, a significant stock is stored within living marine organisms, with other carbon captured and stored in photosynthetic habitats such as seagrass beds, kelp forests and maerl. The identification, protection and management of such carbon resources is very important in helping the UK meet its climate change mitigation targets. However, in order for these ecosystems to continue to act as carbon sinks it is important they are protected from degradation. Best practice management of these ecosystems, including the introduction of HPMA which deliver the highest end of environmental protection, could help maintain and potentially enhance their capacity as carbon sinks, whilst at the same time helping to conserve the communities of animals and plants associated with these ecosystems.

The economic impact of HPMA designation is less clear however, as the cost/benefit implications of HPMA are highly dependent on geographic location and the benefits are not easily assessed. While the prohibition of human activity in HPMA may impose costs to the public and private sectors, HPMA

¹² O'Leary, B.C., Roberts, C.M., 2018. Ecological connectivity across ocean depths: Implications for protected area design, *Global Ecology and Conservation*, doi: 10.1016/j.gecco.2018.e00431.

¹³ Lester, S., Halpern, B., 2008. Biological responses in marine no-take reserves versus partially protected areas. *Mar Ecol Prog Ser* 367:49–56. doi: 10.3354/meps07599

¹⁴ Lester, S., Halpern, B., Grorud-Colvert K, et al. 2009. Biological effects within no-take marine reserves: a global synthesis. *Mar Ecol Prog Ser* 384:33–46. doi: 10.3354/meps08029

¹⁵ Guidetti, P., Baiata, P., Ballesteros, E., et al (2014) Large-scale assessment of Mediterranean marine protected areas effects on fish assemblages. *PLoS One* 9:e91841. doi:10.1371/journal.pone.0091841

¹⁶ Halpern, B., 2003. The impact of marine reserves: do reserves work and does reserve size matter? *Ecol Appl* 13 (1):S117–S137.

¹⁷ Halpern, B., 2003. *The impact of marine reserves: do reserves work and does reserve size matter?* *Ecol Appl* 13 (1):S117–S137.

¹⁸ Fenberg, B., Caselle E., Claudet J., et al. 2012. *The science of European marine reserves: status, efficacy, and future needs.* *Mar Policy* 36:1012–1021. doi:10.1016/j.marpol.2012.02.021

¹⁹ Lyme Bay Reefs. A 16 year search for sustainability. Devon Wildlife Trust, October 2007.

designation also has the potential to generate significant socioeconomic benefits, directly through increasing tourism, recreational activities and indirectly, through enhanced ecosystem services and societal well-being.²⁰ Furthermore, the educational potential of HPMA designation is high, with the creation of reference sites providing vital opportunities for deeper understanding of the marine environment which is likely to benefit all stages of the educational system.

Designation of a number of HPMA's would enable us to have a means of measuring what recovery would look like if all human pressures were removed. These HPMA's or reference sites should follow the same criteria that apply to the whole network: large enough, and of enough in number to monitor and learn from. This is key if we are to understand how protected areas can help our seas to recover. It is our view that there should be a sufficient number of sufficient size in order to test the concept and set the bar against which the management measures in the rest of the network are judged. Any sites should also make a meaningful contribution to the Government's ambition to designate 30% of the oceans as HPMA's by 2030 (30x30).

In the UK, we do not yet have a well-managed, ecologically coherent network of MPAs. Designation of the third tranche of MCZs in England has taken us some way towards completing the network but there is still much work to be done on achieving good management on all these sites, particularly offshore. We are heartened that looking to the future, Defra recognise the need for further improvements to the MPA network, which must include appropriately monitored and managed HPMA's.

In terms of habitat and wildlife recovery at sea, we do not have a good grasp of ecological habitats and species baselines. While our MPA network includes many designated sites, as we don't currently have HPMA's or many areas that have not been impacted negatively by human activities due to historical exploitation and damaging activities, we do not know to what extent habitats and wildlife can recover. Consequently, we do not know what the ecological benefits that fully recovered ecosystems and habitats can bring. The only way to identify these potential benefits is to designate a sufficient number of well managed, monitored and enforced HPMA's.

Question 11: The UK already has a network of MPAs that includes Marine Conservation Zones (MCZs). How could HPMA's complement and enhance the current designations in English inshore and offshore waters and Northern Irish offshore waters?

The waters around the UK are a vast resource that is of vital importance to our well-being. Not only does it provide us with valuable environmental, economic, and cultural benefits, it plays a major role in shaping our climate and in sustaining life.

As part of the North-East Atlantic, our seas are some of the most biologically productive marine areas in the world. Furthermore, the UK is on the edge of the coastal shelf which means we have an unusually high variety of habitats and undersea landscapes. These include cold-water reefs, seagrass meadows, kelp forests and sandy, gravelly or muddy sea floors home to millions of shellfish and worms.

²⁰ Fletcher, S., Rees, S., Gall, S. Shellock, R., Dodds, W. and Rodwell, L. (2014). *Assessing the socio-economic benefits of marine protected areas*. A report for Natural Resources Wales by the Centre for Marine and Coastal Policy Research, Plymouth University.

To help protect this wonderful biodiversity the MCAA provided for the establishment of a network of MPAs that: contributes to the conservation or improvement of the marine environment; is representative of the range of features present; and reflects the fact that the conservation of a feature may require the designation of more than one site.

To achieve healthier seas for both people and wildlife, our MPA network needs to be completed. To this end we have seen significant progress with designations on a national and international level. These have included the following sites across England and Northern Ireland; 91 MCZs, 42 Special Areas of Conservation (SACs), 47 Special Protection Areas (SPAs) and 97 Sites of Special Scientific Interest (SSSIs) in Secretary of State waters.

In addition to the MCAA requirement that the network be representative of the range of features present in the UK marine area, OSPAR includes an objective to establish an ecologically coherent network of MPAs. This refers to all the different types of MPAs interacting with, and supporting, the wider environment as well as other MPAs. This is dependent on appropriate management to support good ecosystem health and function within and outside the MPAs. The development of an ecologically coherent network of MPAs should take account of the relationships and interactions between marine species and their environment both in the establishment of its purpose and in the criteria by which the constituent elements are identified. When planned and managed as a network, the collection of sites should achieve and deliver benefits more effectively than unrelated individual MPAs.

Part 2: HPMA site selection

Question 12: What evidence and factors should be considered when selecting sites for HPMA and who should be engaged in the process?

Evidence and factors which should inform HPMA site selection

Scientific ecological evidence should be at the forefront of considerations and decisions when selecting sites for HPMA.

While consideration of socio-economic factors is important for the designation, management and enforcement processes of HPMA introduction, as it was for Marine Conservation Zones, the primary basis on which HPMA site selection should be made must be science led ecological and conservation evidence and principles.

As stated in response to question 10, designation of a number of HPMA would enable us to have a means of measuring what recovery would look like if all human pressures were removed. These HPMA or reference sites should follow the same criteria that apply to the whole network: large enough, and of sufficient number to test the concept and set the bar against which the management measures in the rest of the network are judged. Any sites should also make a meaningful contribution to the Governments 30x30 ambition.

Who should be engaged?

Stakeholder involvement in the introduction of HPMA is important to achieve 'community buy in' for the process, however it should not solely dictate where HPMA are introduced.

The stakeholder process carried out for the MCZ tranche designations tried to please everyone and in doing so, restricted progress. This should not be replicated in any HPMA designation process. The selection of sites must be based primarily on ecological and conservation principles while effective stakeholder engagement and communication should be used to ensure buy in from inshore and offshore stakeholders depending on the location of the sites.

Question 13: Are there any locations where it would be particularly beneficial: (i) for a location to become an HPMA or (ii) an existing or part of an existing MPA to become an HPMA? Please could you state these in the box below and provide any relevant evidence.

General principle of HPMA site selection

HPMA designations should follow the same criteria that apply to the whole MPA network (sufficient size and of sufficient number) so that the concept can be tested and set the bar against which the management measures in the rest of the network are judged. Any sites should also make a meaningful contribution to the Governments 30x30 ambition.

Part 3: Future implementation and management of HPMA

Question 14: What would be the most appropriate way of managing and monitoring HPMA? How do you think this could fit alongside existing marine management?

It is acknowledged that the feasibility and resources available to monitor MPAs will vary according to the location and type of site. To a large extent we are unable to know whether current management measures in our MPA network are delivering against their objectives. However, reporting under the Birds and Habitat Directives and the recent State of Nature report, suggest that current management measures need significant improvement to halt further decline of biodiversity. Regular monitoring in a number of HPMA could make effective monitoring more cost effective as monitoring HPMA would represent a subset of the MPA network. This approach will also enable us to determine which management strategies are most successful, which can then inform the decisions we take in relation to the broader MPA network.

While it is for the Government to decide exactly how it will appropriately manage and monitor HPMA, it seems logical that the Statutory Nature Conservation Bodies (SNCBs) would be responsible for HPMA monitoring (working with CEFAS and NERC), resourced on a guaranteed on-going basis from central Government. Furthermore, as new methods and technologies advance, it will make monitoring of our seas and seabeds more efficient and cost effective.²¹

²¹ <https://www.southampton.ac.uk/news/2019/10/darwin-mounds.page>

Rapid advances are being made in technology to support monitoring and enforcement. There are now a range of existing technical options for the surveillance and monitoring of offshore areas²²: different types of sensors e.g. radar, acoustic, cameras etc. and platforms e.g. submersibles, passive platforms attached to the ocean floor or floating, surface vessels and aircraft, which can and are being used globally to support MPA implementation. Significant cost and efficiency savings could be made by making smart decisions about the use of resources available across agency and other non-governmental organisations, such as the outstanding marine science departments at Plymouth University²³ and Southampton University.²⁴

Part 4: Your past experience of the Marine Protected Areas (MPA) identification, designation, and management process.

Question 15: Have you been involved in the identification, designation or management of MPAs in the UK previously?

- Yes

Question 15a: If yes, we would like to learn from your experience of being involved in MPA identification, designation and management. Please could you provide information on:

- the name of the MPA(s) and your role and involvement
- what worked well?
- what could be improved?

N/A

Question 16: How has stakeholder and local knowledge been included in previous processes to introduce MPAs (inshore or offshore)? Please can you comment on whether and how this knowledge can better be integrated in future processes associated with HPMAs?

As stated in response to question 12, stakeholder involvement in the introduction of HPMAs is important to achieve 'community buy in' for the process. However, the stakeholder process carried out for the MCZ tranche designations tried to please everyone which diminished the argument for designation of some sites and saw other sites reduced in size or boundaries moved. The selection of sites must be based primarily on ecological and conservation principles while effective stakeholder engagement and communication should be used to ensure buy in from inshore and offshore stakeholders depending on the location of the sites.

²² Brooke, S.D. et al. (2010). Paper 1: surveillance technical options. Marine Conservation Biology Institute, USA. Version 1.2 ;39pgs.

²³ https://www.pml.ac.uk/Research/Research_topics/Strengthening_marine_observations/New_technologies

²⁴ https://www.southampton.ac.uk/engineering/research/themes/maritime_robotics_laboratory.page

Part 5. Any other comments

Question 17: Are there any other comments you would like to make in regard to HPMA's?

Definition of a HPMA

HPMA's are areas of sea that offer the strictest protection possible for nature. Broadly speaking, in such sites nature can recover and thrive, and only carefully managed activities which cause no damage to protected features are generally allowed. The aim of HPMA's is to recover these areas to as natural a condition as possible, by removing all human pressures and creating safe spaces for marine wildlife and habitats.

HPMA's work best when they form part of a bigger network of MPAs, which are areas managed to conserve the marine environment. At one end of the spectrum, this network can include HPMA's which offer the highest environmental protection, as well as MPAs at the other end which allow multiple uses (subject to certain conditions). These multiple use sites currently make up the vast majority of MPAs in the UK. Ultimately, activities on and in the ocean should be sustainably managed and undertaken. It is simply not enough to consider multiple use MPAs as adequate protection for marine biodiversity in themselves - we also require substantial areas of ocean to be effectively 'off limits' to any destructive or invasive human activity.

There are multiple definitions of what Highly Protected Marine Areas are. The concept of HPMA's is strongly supported by the International Union for Conservation of Nature (IUCN), whose recently updated 'Green List' global standards for MPA success²⁵ recommends that any MPA "individually, or as part of a network of MPAs, incorporates significant no-take areas, and where in a network this no-take is distributed across MPAs in the network". The IUCN protected area management categories²⁶ classify protected areas according to their management objectives. The categories are recognised by international bodies such as the United Nations and by many national governments as the global standard for defining and recording protected areas. UK Highly protected areas would plausibly fall within the scope of IUCN categories of Ia, Ib, II, and III.

Credibility issue for the UK

According to the MPA Atlas,²⁷ somewhere between 2 and 2.2% of the world's ocean is covered by HPMA's or NTZs. A significant portion of this is made up of reserves around the remote overseas territories and islands of countries such as France, the UK and US, as well as around Antarctica (in fact just nine reserves make up 80% of this total percentage).

The UK Government have recognised the role HPMA's can play in safeguarding our seas and are now working to change this by developing a Global Alliance²⁸ calling for the 30x30 ask. To set an example, the Government have designated 1.37million km² in two HPMA's around Pitcairn and Chagos Islands. However, in comparison, they have designated just 7km² as NTZs in UK domestic waters.

²⁵ https://www.iucn.org/sites/dev/files/content/documents/applying_mpa_global_standards_v120218_nk_v2.pdf

²⁶ <https://www.iucn.org/theme/protected-areas/about/protected-area-categories>

²⁷ <http://www.mpatlas.org/>

²⁸ <https://www.gov.uk/government/news/uk-creates-global-alliance-to-help-protect-the-worlds-ocean>

Due to this disparity, they cannot stand on a global stage and ask other countries to join in protecting the oceans when so little of our seas are protected in a meaningful way domestically.

The bigger picture

It is the ocean's capacity for supporting life and providing resilience that will be key in our efforts to reverse environmental decline and avoid ecosystem collapse yet the past 18 months has seen consistent warnings that our ocean is suffering. The first ever IPCC report²⁹ on the state of our ocean highlighted the rising rates of ocean warming, acidification, deoxygenation along with increased sea-level rise and extreme weather events. The UN report on biodiversity³⁰ marked overfishing and climate change as the biggest causes of biodiversity loss in our ocean. The recently published assessment of GES for part one of the UK Marine Strategy³¹ showed the UK's failure to achieve 11 out of 15 indicators needed for healthy seas. 50% of the world's Orca populations could be wiped out due to contamination from the persistent chemical pollutant Polychlorinated Biphenyls (PCBs) by 2100.³²

Now, in the context of these warnings, international commitments and the UK Government's declaration of a climate and ecological emergency, there must be greater ambition to protect, preserve and ultimately recover our domestic marine environment. A key step to achieve this is to deliver HPMAs that can play a critical role in the recovery of our ocean whilst simultaneously delivering the UK's existing legal commitments and international ambitions.

²⁹ <https://www.ipcc.ch/srocc/home/>

³⁰ <https://www.ipbes.net/global-assessment-report-biodiversity-ecosystem-services>

³¹ https://consult.defra.gov.uk/marine/updated-uk-marine-strategy-part-one/supporting_documents/UKmarinestrategypart1consultdocumentfinal.pdf

³² Desforges J.P., Hall, A. et al. Predicting global killer whale population collapse from PCB pollution. *Science*. 2018 Sep 28;361(6409):1373-1376. doi: 10.1126/science.aat1953.