

# **Draft Guidelines for the Identification of Highly Protected Marine Areas (HPMAs) in Scotland's Seas**

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## **Executive summary**

The Scottish Government's vision for the marine environment is for clean, healthy, safe, productive and diverse seas, managed to meet the long-term needs of nature and people. To help achieve this vision, while addressing the twin biodiversity and climate crises, the Scottish Government and the Scottish Green Party have committed to an ambitious marine protection programme, under the Bute House Agreement<sup>1</sup>, that will *“add to the existing MPA network by designating a world-leading suite of Highly Protected Marine Areas (HPMAs) covering at least 10% of our seas”*.

### **Highly Protected Marine Areas (HPMAs)**

HPMAs are designated areas of the sea that are strictly protected from damaging levels of human activities, allowing marine ecosystems to recover and thrive. These areas will safeguard, and where required recover, all marine life within them for the benefit of current and future generations; providing opportunities for carefully managed enjoyment and appreciation.

To determine how and where HPMAs will be identified and implemented, Marine Scotland<sup>2</sup> has developed an HPMA policy framework, and NatureScot and the Joint Nature Conservation Committee (JNCC) have drafted these complementary HPMA selection guidelines.

### **HPMA selection guidelines**

The guidelines set out a five-stage site selection process, based in all cases around the conservation of marine ecosystems as the priority, and driven by the presence of the following functions and resources of significance to Scotland's seas -

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<sup>1</sup> [Scottish Government and Scottish Green Party: draft shared policy programme](#)

<sup>2</sup> The Marine Scotland Directorate will lead implementation of the policy framework on behalf of Scottish Ministers / Government

- Blue carbon<sup>3</sup>
- Essential fish habitats (including prey species)
- Strengthening the Scottish MPA network
- Protection from storms and sea level rise
- Research and education
- Enjoyment and appreciation
- Other important ecosystem services

This list of functions and resources (further details are provided in [Annex B](#)) were derived from examples given within the Bute House Agreement and those identified by JNCC and NatureScot. As part of the current consultation, we are seeking stakeholder views on whether additional functions and resources should also inform HPMA identification (under the 'other important ecosystem services' category). The list may be refined on the basis of consultation submissions and 'closed' at the point of publication in 2023 to ensure a clear and objective selection process. This text will also be refined accordingly in the finalised guidelines.

Application of the selection guidelines will explore the potential contribution an area could make towards achieving the following aims -

- Facilitating ecosystem recovery and enhancement
- Enhancing the benefits that coastal communities and others derive from our seas
- Contributing to the mitigation of climate change impacts
- Supporting ecosystem adaptation and improving resilience

A subsequent network level assessment will evaluate different combinations of locations, prioritising between HPMA search locations making similar potential

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<sup>3</sup> In the context of the Scottish Blue Carbon Forum the term blue carbon refers to the carbon captured by all biological metabolic process (e.g. photosynthesis, calcification) and organic material derived from other sources (e.g. terrigenous) that is subsequently deposited and stored as either organic or inorganic carbon in marine sediments. For more information about blue carbon see the Scottish Blue Carbon Forum [website](#).

contributions, to optimise ecological, social and cultural benefits whilst minimising impacts. The assessment will explore the contribution that HPMAAs could make to the wider MPA network.

### **Consideration of potential socio-economics impacts**

The designation of HPMAAs and the application of these site selection guidelines will take account of socio-economic factors affecting the resilience and viability of marine industries, coastal communities and other stakeholders. As a result, some proposals may be screened out of further consideration during the selection process. Designation by Scottish Ministers will be informed by a Sustainability Appraisal, including assessment of socio-economic impacts.

### **Stakeholder engagement and third party proposals**

NatureScot, JNCC and Marine Scotland will work with stakeholders to apply the guidelines to identify a suite of possible HPMAAs for consideration by Scottish Ministers. Stakeholders will have the opportunity to shape policy development, share evidence and expertise, submit proposals (using the third-party submission template included in this document), and comment on proposals as they emerge.

A stakeholder engagement plan will be developed to accompany these guidelines and the HPMA policy framework to set out how stakeholders can get involved. By collaborating with stakeholders, Marine Scotland, NatureScot and JNCC will ensure that there is a shared understanding of the interests driving site identification and the likely implications of HPMA designations.

## Acronyms

**EEZ** – Exclusive Economic Zone

**EFH** – Essential Fish Habitats

**EU** – European Union

**GIS** – Geographic Information System

**HPMA(s)** – Highly Protected Marine Area(s)

**IUCN** – International Union for the Conservation of Nature

**JNCC** – Joint Nature Conservation Committee

**MPA(s)** – Marine Protected Area(s)

**NMPi** – National Marine Plan Interactive

**PMF(s)** – Priority Marine Features(s)

**UK** – United Kingdom

## Key terms

**HPMA search location** – an area identified as a result of the application of Stages 1 to 5 of the site selection process set out in this document.

**HPMA proposal** – an HPMA search location that has passed through the site selection stages and the network assessment, and which NatureScot and/or JNCC have formally recommended to Scottish Ministers for designation.

**Possible HPMA** – an HPMA proposal approved by Scottish Ministers for public consultation.

**Enhancement** – is applied in relation to those actions that aim to improve the quality, size or geographic distribution of a habitat.

**Recovery** – used in relation to actions taken to enable a habitat to overcome damage or other disturbance and reach a better state, rather than trying to “turn the clock back”. This is seen as a relatively passive process involving removing pressures and allowing the habitat to recover naturally.

**Restoration** – applicable to projects entailing a high level of intervention, such as those rebuilding a habitat or reintroducing an ecosystem engineering species to assist with enhancing a habitat into a location from which it has been extirpated and where re-establishment could not occur without assistance.

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# **1 Introduction**

## **1.1 Background**

The [Bute House Agreement](#) is a shared policy programme between the Scottish Government and the Scottish Green Party, which aims to build a greener, fairer, independent Scotland. The Scottish Government and the Scottish Green Party believe that the marine environment '*should be clean, healthy, safe, productive and diverse, and managed to meet the long term needs of nature and people*'. The agreement sets out several commitments to help achieve this vision, including the designation of at least 10% of Scotland's seas as Highly Protected Marine Areas (HPMAs) by 2026. The guidelines set out in this document will be applied when selecting HPMAs in Scotland.

The introduction of HPMAs will support the delivery of a wide range of regional and international obligations on marine protection.

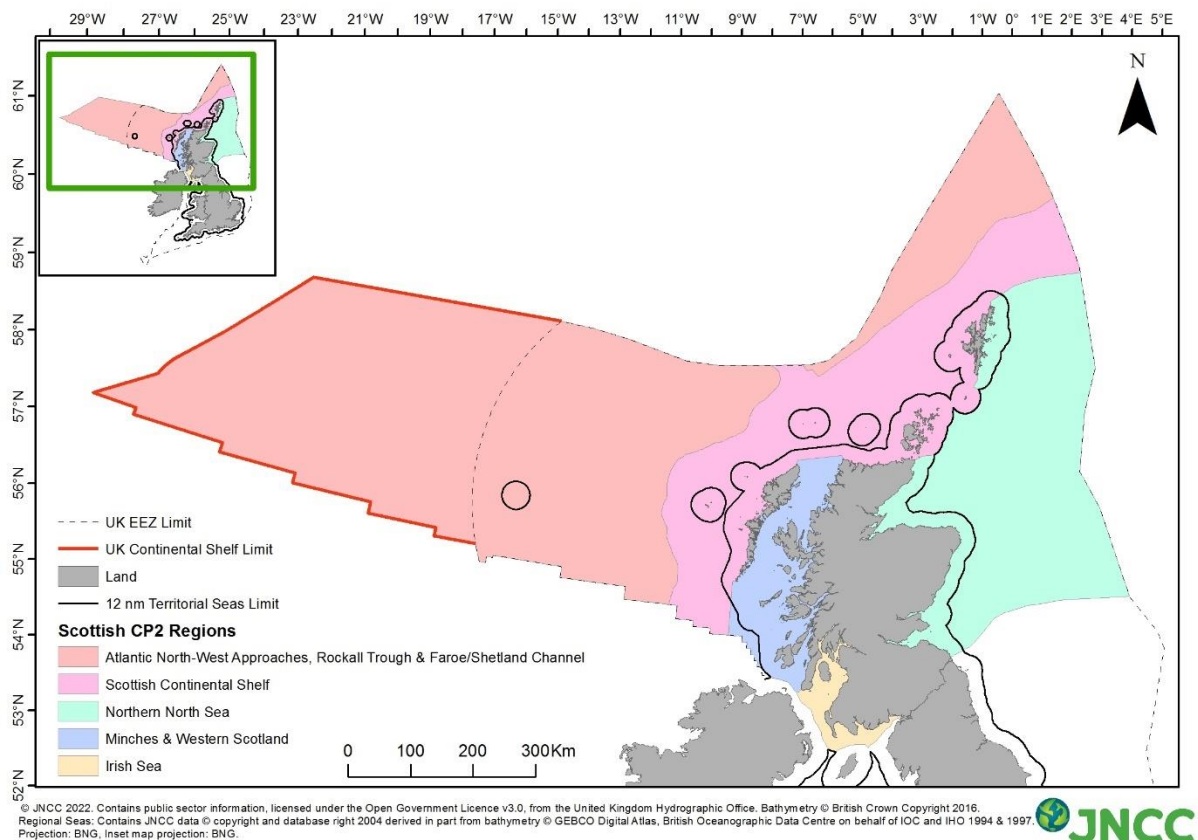
## **1.2 Purpose and scope**

These draft guidelines, produced jointly by NatureScot and the Joint Nature Conservation Committee (JNCC), set out how HPMAs will be identified in Scottish waters. The draft guidelines complement the broader policy framework for identifying HPMAs developed by Marine Scotland.

For Scottish inshore waters (up to 12 nautical miles from the coast), there is full legislative competence within Scotland to introduce the necessary powers to designate HPMAs through primary legislation. For the Scottish offshore region (beyond 12 nautical miles out to the outer limits of the UK continental shelf), powers over the marine environment are currently reserved to the UK Government (with some exceptions). The Scottish Government is seeking agreement from the UK Government to provide for equivalent powers for Scottish Ministers to designate HPMAs in Scottish offshore waters. The intention is that the guidelines will apply to the selection of HPMAs in the Scottish inshore region and the Scottish offshore region once the necessary powers are in place. Throughout these guidelines, these areas are collectively referred to as Scotland's seas (see Figure 1).

The guidelines apply to marine areas below the height of mean low water spring tides. HPMAs will therefore not encompass foreshore (intertidal) areas around Scotland.

Scottish Ministers will exclude some areas from consideration e.g. on the grounds of national security, public health or lifeline services. Further information can be found in the Policy Framework.



**Figure 1** Scotland's seas split by biogeographic regions that will help inform the Scottish HPMAs process, shown alongside the extent of Scottish inshore (12 nautical mile territorial seas limit) and offshore (UK Continental Shelf and EEZ limit) waters (excluding the special area of shared competence with the Faroe Islands).

## 2 Background to Highly Protected Marine Areas (HPMAs)

Across the globe, there are an increasing number of examples of different forms of marine protection, including strictly or highly protected areas, recognised internationally as 'marine reserves'. Protected area networks often comprise sites

ranging from fully protected to those that allow some socio-economic uses (also known as ‘multiple use’ MPAs) - either within zoned areas or across the whole site. Zones of differing protection levels are also common within individual MPAs. An example of an area comprising a marine reserve around a central, multiple-use fishing zone is the Rapa Nui MPA in Chile<sup>4</sup>.

Most existing MPAs in Scottish waters have been developed around the concept of sustainable use, allowing activities that do not adversely affect the protected features to continue. However, evidence suggests that using HPMAs to deliver an ecosystem approach provides an opportunity to deliver improved conservation outcomes.

Given the twin biodiversity and climate crises, implementing HPMAs as an added component to the Scottish MPA network will help to support the recovery and resilience of Scotland’s seas.

The Scottish Government’s commitment to introduce HPMAs aligns with the EU Biodiversity Strategy for 2030, which proposes that 10% of our seas should be under strict protection by 2030. Within the [IUCN Guidelines for Applying Protected Area Management Categories to MPAs](#), such ‘strict’ or ‘highly protected’ areas are often associated with the definitions of categories Ia, Ib and II that seek to ‘*leave natural processes essentially undisturbed to respect an area’s ecological requirements*’.

## 2.1 Definition

HPMAs can be defined as ‘designated areas of the sea that are strictly protected from damaging levels of human activities, allowing marine ecosystems to recover and thrive. These areas safeguard all of their marine life for the benefit of the planet and current and future generations; providing opportunities for carefully managed enjoyment and appreciation.’

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<sup>4</sup> For further information on the Rapa Nui Rahui MPA see the Marine Protection Atlas [website](#).

## 2.2 Aims of HPMAs

HPMAs are one of the measures available to protect Scotland's seas and to help deliver the Scottish Government's vision for the marine environment. HPMAs aim to:

- Facilitate ecosystem recovery and enhancement via the removal of pressures and/or active restoration
- Enhance some of the benefits that coastal communities and others derive from our seas
- Contribute to the mitigation of climate change impacts
- Support ecosystem adaptation and improve resilience, including to climate change

The designation and management of HPMAs will take a whole-site approach. All marine biodiversity, the supporting environment and associated ecosystem services within the boundaries of an HPMA will be protected from damaging levels of human activities.

The Bute House Agreement stipulates the development of a policy and selection framework that provides for:

- Balanced representation of the ecology of Scotland's seas and their geographical spread from the coast to the deep sea
- Ecosystem recovery and biodiversity enhancement, including protection of blue carbon and essential fish habitats
- The recovery of Priority Marine Features (PMFs)
- Coverage of at least 10% of Scotland's seas

The HPMA selection process outlined in Section 4 provides the framework to meet these principles, with further detail provided in Annex A. The key functions and resources of significance to Scotland's seas that will underpin site identification are summarised in Annex B.

### **2.3 Taking account of economic, cultural and social factors during site selection**

During the HPMA site selection process NatureScot, JNCC and Marine Scotland will take account of socio-economic factors affecting the resilience and viability of marine industries and the coastal communities that depend on them. Stakeholder engagement will form a cornerstone to the work undertaken by NatureScot, JNCC and Marine Scotland to identify HPMA search locations: from playing a role in shaping the HPMA policy and selection framework through to stakeholders being given the opportunity to propose areas for consideration as HPMA.

NatureScot, JNCC and Marine Scotland will work with stakeholders to better understand how they use the marine space, with a view to patterns of activity informing HPMA siting and design. Where possible, this will be used to limit socio-economic impacts.

## **3 Relationship with the existing MPA network**

Further details on the relationship between HPMA and the existing MPA network are provided in the policy framework. HPMA will be selected in a way that complements the existing MPA network and is mindful of decisions that have already been made and/or are underway regarding wider marine management in Scottish waters.

It may be that HPMA overlap either fully or partially with some existing MPAs in order to maximise the conservation benefits that could be gained with stricter management approaches in a particular geographic location. It may also be the case that HPMA occur fully outwith existing MPAs.

## **4 Site selection guidelines**

This section sets out the guidelines that will be used by NatureScot and JNCC for selecting and assessing proposals for HPMA in discussion with Marine Scotland.

HPMA proposals will be developed through a scientific process, using best available evidence and involving stakeholders (see Section 5). Socio-economic factors will also be taken into account. Third parties are also able to submit proposals for assessment (see Section 5.1).

#### **4.1 General principles**

This section sets out a series of general principles that build on those used to identify the existing MPA network in Scottish waters and will inform the approach to HPMA selection. The principles apply throughout all stages of the selection process, and cover the following broad themes:

- Use of a robust evidence base
- HPMA scale and the use of functional ecosystem units
- Ensuring added value
- Delivering ecosystem recovery

##### **4.1.1 Use of a robust evidence base**

A robust evidence base will support and help inform development of HPMA at each stage of the selection process (see Section 6). This will include the use of expert opinion and knowledge exchange (e.g. between scientists and sea users). The evidence base will be shared publicly and be open to scrutiny.

##### **4.1.2 HPMA scale and the use of functional ecosystem units**

Ecologically and geomorphologically functional units (e.g. entire sea loch; whole embayment or sediment plain), and associated ecosystem processes will guide HPMA boundary setting. Away from the coast, existing broadscale mapping products are likely to play a role in defining relevant functional units.

There is no set minimum or maximum size for an HPMA and no predetermined view regarding the number of potential sites that should be identified. Size will depend on the rationale for identification, the functions and resources that the HPMA is designed to protect, and the requirements for management of activities. However, in

accordance with the aims set out in the Bute House Agreement, site selection will result in at least 10% of Scotland's seas falling within stricter protection measures.

#### **4.1.3 Ensuring added value**

HPMAs will be selected where they are the most appropriate mechanism for protection and are considered to add clear value to the conservation and wider sustainable use of Scotland's seas over and beyond existing marine conservation policies and management.

#### **4.1.4 Delivering ecosystem recovery**

Ecosystem protection and/or recovery will be the primary driver in the identification of HPMAs in Scottish waters.

Removal of existing and future pressures from HPMAs will facilitate ecosystem recovery. Previous human activity and ongoing climate change will dictate what recovery looks like in different physical settings around Scotland. Recovery will be considered at a broad, ecosystem-based level, in the context of these prevailing environmental conditions. HPMAs may also support direct intervention as part of habitat restoration projects in appropriate locations and with appropriate management in place.

Consideration of potential environmental changes, ecological spatial connectivity and existing conservation measures will inform where and how HPMAs are used to best complement the MPA network and facilitate ecosystem adaptation to a broad range of possible climate trajectories. As our understanding improves, and/or the environment changes however, there may be a need to re-assess existing HPMAs to determine whether boundaries should be amended or whether alternative locations may be more suitable, particularly in the longer term in response to climate change (see also Section 7).

## **4.2 Site selection stages**

Figure 2 sets out the approach that will be followed to identify and select potential sites for designation as HPMA's in Scottish waters.

Individual HPMA proposals will be developed through an initial five-stage process. Further information on each stage is given in Annex A. The process starts in Stage 1 with the identification of HPMA search locations supporting functions and/or resources of significance to Scotland's seas (see Annex B).

HPMA search locations are expected to evolve (e.g. changes in size, shape and scope) as they progress through the stages. Stages 2 and 5 will inform an initial prioritisation exercise and some search locations may drop out of the process as a result. Only locations that pass Stages 1 to 5 will be considered for inclusion in the subsequent network level assessment.

The different stages of HPMA selection may not necessarily follow a linear process. For example, the results of assessing individual search locations at different stages may lead to reconsideration of other proposals (e.g. locations being joined or reshaped etc.). Information on activities under Stage 4 might necessitate a reconsideration of the size and shape of an individual location, thereby revisiting Stage 3. Similarly, the network level assessment (see next section) may highlight gaps that necessitate the re-application of Stage 1 and the identification of additional search locations for specific interests.

## **4.3 Network level assessment**

As part of the package of information providing advice to Scottish Ministers on proposals, a national 'network-level' assessment will look across the individual search locations to determine those that would collectively make the greatest contribution to the overall aims of HPMA's.

This will include consideration and prioritisation between locations making similar potential contributions to the delivery of aspects such as PMF recovery, ecological representation, spatial coverage, and the balance of degraded areas vs. areas that are more natural. The assessment will also look at how HPMA's supplement and

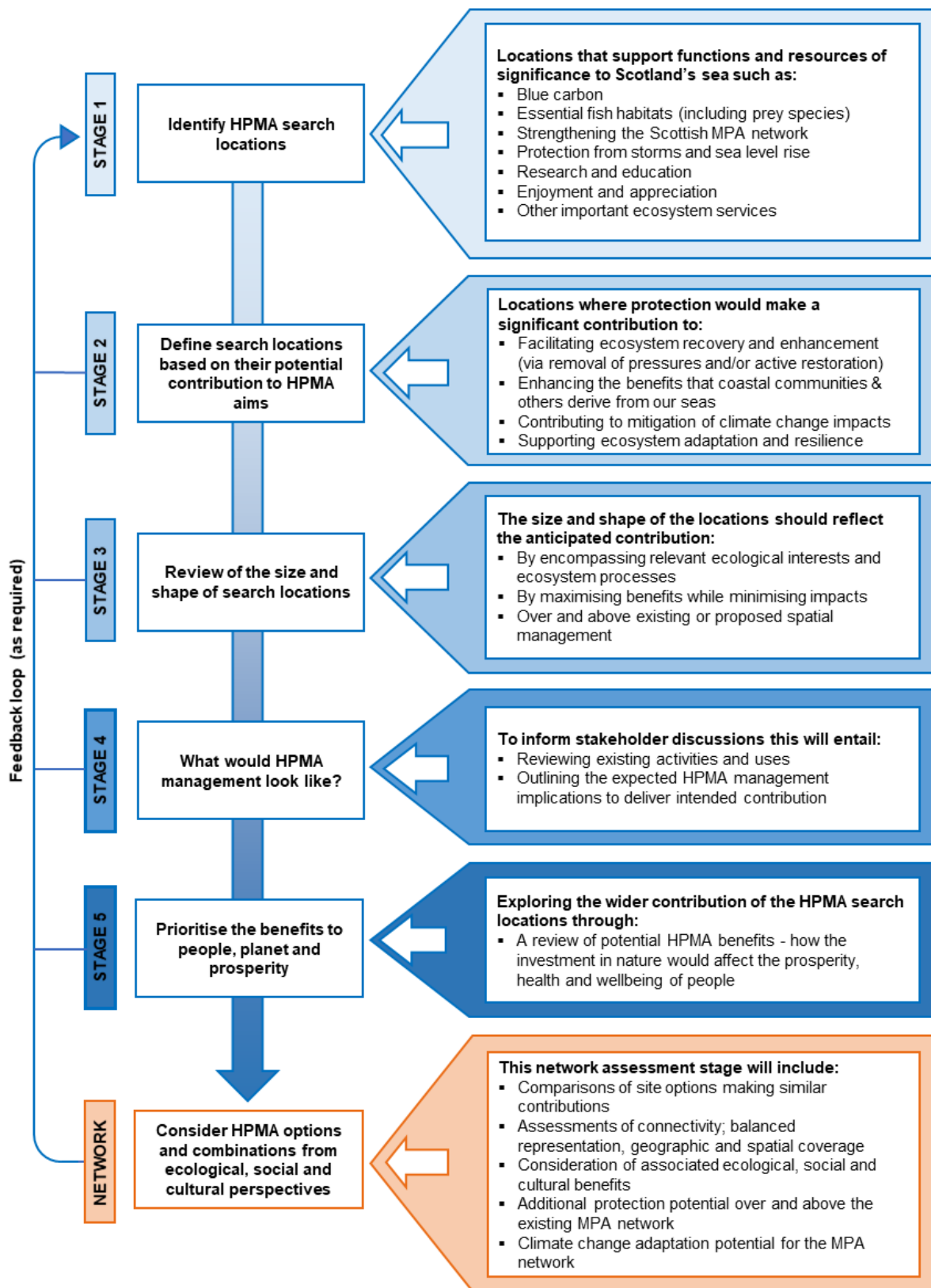


complement the existing MPA network, ensuring that HPMA provide the requisite additional environmental protections over and beyond existing mechanisms. The assessment will consider how HPMA and MPAs collectively address key ecological resilience principles (to aid adaptation to climate change); including connectivity and biogeographical differences of our seas (see Figure 1 for an overview of the biogeographic regions in Scotland's seas).

Socio-economic information will be considered throughout the process, and Stage 5 of site selection and the subsequent network level assessment will be underpinned by information that seeks to optimise ecological, social and cultural benefits whilst minimising impacts. At the network level, the assessments are expected to consider different possible combinations of HPMA search locations.

On the basis of the network level assessment, NatureScot and JNCC will provide formal advice to Scottish Ministers regarding locations that should be considered for designation (known as HPMA proposals). NatureScot will consider proposals in Scottish territorial waters (within 12 nautical miles) and JNCC will focus on proposals in offshore waters adjacent to Scotland (outside 12 nautical miles).

Ministerial decisions on HPMA proposals to go forward for public consultation will be informed by, but not limited to, the formal advice provided by NatureScot and JNCC. Only proposed HPMA sites that are publicly consulted on will be considered by Ministers for designation following completion of the consultation process.



**Figure 2** The process that will be followed in the selection of HPMA in Scotland's seas

## **5 Stakeholder engagement**

The identification of HPMA's in Scotland's seas will be undertaken in collaboration with marine stakeholders, particularly those who have an interest in or may be affected by HPMA proposals. Marine Scotland, NatureScot and JNCC are committed to engaging with, and consulting with, all stakeholders at all key stages of policy development, site selection, assessment, and designation.

### **5.1 Third party proposals**

The process outlined in these guidelines enables third parties to propose possible locations for HPMA's. Third party proposals will be considered on the basis of the contribution they could make in accordance with the selection process set out in Section 4 (see also Annexes A and B).

In relation to the requirements of the Bute House Agreement, our aim is to consider any proposals within the design process as early as possible. An opportunity for submission is expected following publication of the finalised selection guidelines in 2023. Beyond this initial submission period, the process will remain flexible and responsive to the provision of further supporting evidence but inevitably, a final deadline will need to be identified (see also Section 6 below).

A draft template setting out initial information requirements for third party proposals is provided in Annex C. The information requirements take account of the likelihood that third parties may not have access to the same level of evidence as statutory advisors to Scottish Government. On the basis of the information provided, NatureScot and / or JNCC will undertake a preliminary appraisal to determine the validity and merits of each proposal. Feedback will be provided to the third parties who submitted the proposal, and NatureScot and JNCC will work with them to feed in other relevant datasets to ensure an equitable assessment process.

Third party proposals will then be incorporated into wider processes and be subject to the same formal assessment, review and refinement stages as proposals developed by NatureScot and JNCC. All proposals, including those from third parties are therefore likely to evolve over the course of the HPMA process. NatureScot and

JNCC will describe the fate of all third party proposals in their advice to Scottish Ministers. This will include providing a rationale for any proposals not considered to meet the requirements for site selection, which will also be communicated to the original proponents.

## **6 Use of evidence**

HPMA designation will use the best available evidence. This could include information from a variety of national or local sources such as industry, conservation organisations, recreational bodies, academia, environmental interest groups and individuals. Evidence from a range of data collection methods will be considered; for example direct sampling data, remote-sensing data, modelled data, and social data.

Whilst there will be a preference for relying upon existing data wherever possible to identify potential locations for HPMA, the process will be adaptive and responsive to new datasets. Work will include the identification, collation and analyses of existing data sets where necessary to address knowledge gaps. This is expected to include the use of modelling techniques to maximise benefits and minimise socio-economic impacts. The best-available, robust and reliable evidence will be used, and decisions will take account of data collection methods, and the quality of and confidence in relevant data.

Workshops will provide opportunities for stakeholders to contribute to the evidence base and comment on how current knowledge is being utilised. Evidence used in developing HPMA proposals will be shared throughout and published in an appropriate format at the time of public consultation on proposed sites. This will allow transparency of decision-making and an opportunity for comment by a wide range of interests.

## **7 Development of HPMA proposals**

### **7.1 Objectives**

Objectives will describe what it is that individual HPMA designations have been set up to achieve. These will provide a starting point for developing management and will inform future monitoring.

Some objectives are expected to take a generic format. For example, a general statement that the HPMA will contribute to delivering ecosystem recovery and resilience. Other objectives may be tailored to the specifics of a site, to account for differences between HPMA. Objective setting will consider ecological aspects (akin to 'conservation objectives' developed for MPAs) and may also consider wider social, cultural and economic aspirations.

Separate guidance will be published on the production of objectives for HPMA.

## **7.2 Achievement of objectives**

HPMA will be subject to the existing six-yearly MPA network reporting cycle to track progress towards achieving their objectives.

Monitoring will be undertaken at a subset of sites to determine the achievement of objectives and, to assess the contribution of HPMA to the wider network (as per their 'added value'). Assessing and monitoring HPMA over long timescales will be essential to determine their role in supporting ecosystem recovery.

## **7.3 Materials to support HPMA proposals**

Proposals for HPMA will likely be a combination of those developed by NatureScot and/or JNCC, and those submitted by stakeholders through the third party proposal process. All proposals will be subject to discussions and workshops with stakeholders. During these HPMA workshops and meetings, stakeholders will include representatives from other Government departments, local authorities, industry, environmental NGOs, recreational users and others who have an interest in the Scottish marine environment.

As the HPMA process continues, the level of engagement with stakeholders will increasingly reflect direct interest in specific proposals.

During public consultation, stakeholders will be provided with sufficient information (in non-technical language) on each HPMA proposal to ensure they understand the anticipated contribution of the site, and what the implications of designation might be. Each HPMA proposal will therefore include:

- An introduction to the HPMA proposal and the area within which it is located
- The expected contribution of the proposal to the Scottish MPA network
- The HPMA proposal's objectives
- A description of the information sources used in developing the proposal, and our confidence in them
- A summary of the assessment of the HPMA proposal against the selection guidelines (Figure 2 and Annex A)
- Expected arrangements for management of the HPMA where available, including management of activities
- A map of the proposed boundary

## 8 Further information

This guidance should be read in conjunction with the [policy framework](#) for identifying HPMA's in Scottish waters developed by Marine Scotland. Further information on the wider MPA network and protected areas management is available on the Scottish Government [website](#).

Information about NatureScot's work on MPAs within Scottish inshore waters (out to 12 nautical miles) can be accessed on the NatureScot [website](#).

Information about JNCC's work on MPAs within offshore waters adjacent to Scotland (extending beyond 12 nautical miles to the UK continental shelf) can be accessed on the [MPA section](#) of the JNCC website.

Further information on individual MPAs can be accessed in the following ways:

- MPAs in inshore waters via [NatureScot SiteLink pages](#)
- MPAs in offshore waters via [JNCC Offshore MPA Site Information Centres](#)
- Scottish MPAs can be viewed through the [Marine Scotland Maps \(NMPi\) portal](#)
- MPAs in UK waters can be viewed via [JNCC's MPA mapper portal](#)
- Fully attributed GIS site boundary files for all sites in the MPA network are available from [NatureScot Natural Spaces](#)

## **Annex A - Further details on the 5-stage site selection process**

The following information provides further detail to Section 4.2 and Figure 2 on the five key stages in the selection of individual HPMA in the seas around Scotland.

### **Stage 1 - Functions and resources of significance to Scotland's seas**

The identification of HPMA search locations is based on the presence of functions and/or resources of significance to Scotland's seas. This includes blue carbon and essential fish habitats. Further details are provided in Annex B.

For an area to be identified as a HPMA search location (and pass through to consideration at Stage 2), at least one of the significant functions or resources outlined in Annex B must be present and provide for ecosystem protection and/or recovery. HPMA allow for carefully managed enjoyment and appreciation but this cannot be the primary or sole purpose of a proposal.

Greater weighting is likely to be given to locations supporting multiple interests (determined through the Stage 2 assessment). All HPMA search locations will be underpinned by a robust evidence-base.

All existing MPAs are considered to support significant resources and functions.

### **Stage 2 - Potential contribution to HPMA aims**

Stage 2 will establish the potential contribution that a search location could make towards achieving the overarching aims of HPMA. Specifically, this will entail consideration of each search location against the following:

- a. Ecosystem recovery and enhancement (via pressure removal or restoration)
- b. Enhancing the benefits that coastal communities and others derive from our seas
- c. Mitigation of climate change impacts
- d. Ecosystem adaptation and resilience, including to climate change

More weight will be given to search locations deemed to contribute to a greater number of the aims under Stage 2. However, search locations may still pass through this stage on the basis of a particularly valuable contribution to a single aim.

### **Stage 3 - Assessing the appropriate scale of the search location**

The size and shape of the location will be adapted where necessary to ensure it is suitable for maintaining the integrity of the functions and resources for which it is being considered. This stage will include a review of existing and proposed marine conservation policies and wider marine management to ensure that the use of an HPMA would 'add value'.

Application of Stages 3 and 4 is likely to be iterative. Refinements to the size and shape of the HPMA search location should seek to maximise the contribution of the location while minimising potential impacts (to known activities).

Note that this stage is different to the detailed work to refine MPA boundaries, which will be done only for those sites that pass the subsequent network-level assessment.

Locations might not pass Stage 3 if it is not possible to define a size and shape that will achieve the intended contribution to HPMA aims.

### **Stage 4 – What would management look like**

Stage 4 entails a summary review of available information on existing activities and uses of the location. The descriptive narrative will clearly articulate what the implementation of HPMA management would mean for these different existing uses within the search location.

This qualitative review would be a pre-cursor to the detailed socio-economic impact assessment work commissioned by Marine Scotland.



The purpose of this stage, in combination with Stage 3, is to present evidence-based HPMA options and provide clarity over likely management implications for consideration and discussion with stakeholders.

Locations might not pass Stage 4, for example if there are constraints to achievement of the desired management outcomes.

### **Stage 5 - People, Planet and Prosperity – recognising the wider contribution**

Stage 5 considers the full range of potential benefits that might be realised through the protection of the HPMA search location. This appraisal stage takes account of any refinements to the size and shape of the area as it has passed through the previous stages, and will be informed by anticipated changes to existing activities following introduction of HPMA management.

The location-specific conclusions of the Stage 5 assessments will allow for some prioritisation between search locations, with the identification of those making the greatest potential contributions. Locations offering similar contributions may progress as 'options' for consideration as part of the network level assessment. Comparisons will include a regional dimension to ensure that the locations collectively allow the network assessment to identify a balanced representation of the ecology of Scotland's seas and their geographical spread, from the coast to the deep sea.

## Annex B - Functions and resources of significance to Scotland's seas

Further information on the functions and resources of significance to Scotland's seas that will underpin HPMA identification in Scotland's seas.

### Blue Carbon

- Spatial management measures to support climate mitigation are best suited to blue carbon ecosystems. In Scotland, this includes carbon stored in living marine and coastal habitats (biological blue carbon - including, but not limited to, seagrasses, maerl beds and biogenic habitats that can also play an important role in trapping organic carbon that might otherwise be resuspended and remineralised) and carbon stored in seafloor and sea-loch sediments (geological blue carbon).
- The focus in relation to HPMA is likely to be on areas supporting the largest carbon stores with consideration of their vulnerability (how biodegradable or 'labile' they are) and associated sequestration rates. This will include organic carbon stores present in muddy sea-loch and seafloor sediments as well as ensuring adequate protection for biological blue carbon habitats (examples of habitats not covered by existing measures, or through the additional protection of existing MPAs where this adds value and prevents damage to important carbon-sequestering capabilities).
- The [Scottish Blue Carbon Forum](#) will provide scientific expertise to support the HPMA identification.

### Essential Fish Habitats (EFH)

- The Bute House Agreement refers to critical fish habitat which is analogous to the more regularly used Essential Fish Habitat (EFH) terminology adopted within these guidelines. EFH is often broadly defined as '*those waters and substrata necessary to fish for spawning, breeding, feeding, or growth to maturity*'. From a fisheries management perspective, EFH can include '*those habitats which are essential to the ecological and biological requirements for critical life history stages of exploited fish species*', where protection may lead to an improvement of stock status and sustainability.

- HPMA in Scotland will consider the link between critical habitats, relevant fish (and shellfish) life stages and the services that are provided (nursery, feeding, refugia, spawning etc.). Areas will be considered under this criteria on the basis of the benefits that removal of damaging activities would have towards provision of that service, and its contribution towards sustainable and healthy fish populations through improved recruitment, growth, survivorship or successful reproduction.
- HPMA identification may reflect established concepts, including affording protection to specific 'single' habitats that are well understood in relation to their role as fish habitats (e.g. reef, kelp, maerl, seagrass etc.).
- Larger scale areas encompassing a mosaic of habitats (which may include elements of topographic complexity) may also be considered where these collectively confer EFH benefits and provide suitable habitat for multiple species, life stages or functions (e.g. refuge and feeding). Fjordic sea lochs and seamounts represent examples of landscape scale EFH provision.
- The existing MPA network provides protection to many habitats which are typically considered essential fish habitat. In some cases, it may be appropriate to provide additional protection to these features, particularly where this could enhance habitat quality or extent. Otherwise, selection will contribute by providing protection to key habitats outside the existing MPA network allowing for an improvement in the services provided by a diverse range of habitats.
- Addressing seafood security concerns (provisioning services) has a dependency on the quality of the environment (supporting services), where actions for food security and marine biodiversity are intrinsically linked. HPMA will build on the existing MPA network and play an essential role in supporting the climate adaptation of fisheries and the human communities that depend on them for food or income.
- Essential habitats for marine mammals and birds are incorporated under 'Strengthening the Scottish MPA network' below.
- Engagement with industry will be important for improving understanding around the distribution of EFH.

## Strengthening the Scottish MPA network

- HPMAAs will complement existing MPAs, supporting and strengthening the network by providing the requisite additional environmental protections over and beyond existing mechanisms. This is expected to include the identification of HPMAAs outside the existing MPA network.
- Enhancing ecological connectivity, i.e., the movement of mobile species and/or the transport of some species' offspring from place to place is one way that HPMAAs will add value. Larval exchange differs markedly among different species, however the exchange of eggs, larvae and other propagules (e.g. seeds and spores) is critical for network functioning. This determines the degree to which individual protected areas can act as a source of biodiversity to Scottish waters more generally, including for recruitment to adjacent fisheries and to enhance recovery.
- HPMAAs may enhance connectivity by protecting areas known to be important for species movements and supporting functions and processes (e.g. areas of high primary productivity etc.), or through being suitably spaced within and around the existing network - serving as 'stepping stones' that help species adapt to climate-induced shifts in their home ranges. Dispersal distances and spatial movement information will influence the spacing of HPMAAs.
- Where HPMAAs can add value to existing conservation measures, consideration will be made to vulnerable life history stages of mobile species and the habitats that support them, e.g., when species aggregate for mating, spawning or at migration bottlenecks (see also *Essential Fish Habitats* above).
- To promote recovery of marine ecosystems and improve resilience, including to climate change, it is essential to consider the range of ecological diversity present in Scottish waters. Selection of HPMAAs will therefore seek to encompass all major habitat types, in the context of the existing network, to ensure that strict protection is afforded to a high proportion of overall biological diversity. Where required, proposals will be developed to ensure a balanced representation of the ecology of Scotland's seas and their geographical spread from the coast to the deep sea.
- HPMA identification will encompass degraded and non-degraded habitats to facilitate ecosystem recovery. This will include the development of proposals

specifically targeting the recovery of PMFs as stipulated in the Bute House Agreement.

- In the context of the draft HPMA selection guidelines, all existing MPAs and other effective area-based measures established for nature conservation purposes, are considered to support functions and resources of significance to Scotland's seas.

### Protection from storms and sea level rise

- Nearshore ecosystems can protect coastal communities, infrastructure, and property from storms, wave surge and the increased flooding and erosion that accompany sea level rise.
- Shallow subtidal reefs, kelp beds, sediment banks and seagrass beds, for example, can provide broad areas that stabilise sediments, attenuate wave energy and slow a rise in floodwater before it reaches built structures.
- Natural systems can be more effective than man-made alternatives where they are able to accommodate a rise in level (accreting more sediment over time), and are often more cost-effective than traditional built infrastructure solutions.
- Work with [Dynamic Coast](#), will explore the potential for HPMA's to facilitate nature-based protection of vulnerable coastal infrastructure around Scotland.

### Research and education

- HPMA's offer research and education opportunities above those associated with many existing MPAs. They allow for people to experience, observe and study marine fauna and flora that are undisturbed by human activities. HPMA's have an important role to play in helping children and students learn how fish and other marine animals find food, hide from predators, grow, reproduce, migrate or defend their territories. As people learn and share their knowledge with their families and the wider community, they play a significant role in developing community understanding and demand for sustainable management and the importance of protecting their marine environments.

This fosters stewardship, increases awareness and encourages the responsible use of resources.

- HPMAs have the potential to provide broad benefits, with sites serving as reference areas in long-term research, including informing assessments of management effectiveness. Research may involve the understanding of marine ecosystems and ecosystem services, developing and evaluating techniques for sustainable management and exploring options for new forms of use. The slow and incremental changes caused by human activities and natural events, such as the effects of a gradually changing climate, can be difficult to measure. Without such reference sites the value of comparisons is limited. HPMAs provide a crucial means for establishing points of reference to assess human and other impacts on adjacent marine environments.
- Many coastal and nearshore ecosystems are highly degraded and enabling their recovery towards more natural states is likely to take place over timescales of decades. Even after mitigation or removal of the main pressures, it can be difficult to determine how to re-establish ecosystems, be sure what they should now contain, and how they are likely to function in a recovered form. Where environmental conditions have changed, it may not be possible for ecosystems to fully recover to their former states.
- Shallow inshore and intertidal areas are the focus of attempts to restore original ecosystem services, such as flood and storm protection, by rebuilding a habitat or reintroducing an ecosystem engineering species. These restoration efforts may be supported by HPMA protection in the subtidal zone and will also need information from protected, non-degraded areas to provide guidance on approaches and priorities for restoration.

## **Enjoyment and appreciation**

- Leisure, recreation and tourism at non-damaging levels may offer economic opportunities in HPMAs. This is likely to be the most significant economic driver associated with these protected areas. There is evidence that implementing strict protection can encourage tourism enterprises to establish and expand, while ensuring activities remain at non-damaging levels. HPMAs can provide additional recreational benefits compared with other types of MPA

due to the higher level of protection of habitats and species, making them potential hotspots of biodiversity.

- Aesthetic, cultural and spiritual values are also associated with marine environments. The high level of protection afforded by HPMA's, allowing for the recovery of marine ecosystems, could increase the appreciation and enjoyment of the beauty of such environments, and could strengthen the positive emotional responses connected with sites of cultural and religious significance.
- Overall, inshore sites are generally more accessible and frequently visited than offshore sites. However, HPMA's in the offshore could offer an opportunity for the general public to gain a greater understanding of the unique range of habitats and species around the wider seas of Scotland, in the knowledge that these will be protected for future generations.

### Other important ecosystem services

- Ecosystem services are the benefits that people derive from ecosystems. Scotland's seas provide other important cultural, supporting and maintaining ecosystem services that could inform the identification of HPMA's. The list of functions and resources of significance to Scotland's seas provided above is not considered exhaustive.
- An example of an additional service which is closely linked to '*Enjoyment and appreciation*' is **Human health and wellbeing**. Studies have demonstrated that exposure to coastal environments can play a significant role in boosting well-being, mental and physical health, due to the 'therapeutic and restorative effects' marine and coastal landscapes have. These studies highlight the important role of marine conservation, with visits to areas with a protected status and those with higher levels of biodiversity associated with higher levels of calmness, relaxation and revitalisation, compared to locations without this status.

## **Annex C - Third party proposal process and submission template**

The draft submission template outlines the information third parties should provide when developing proposals for HPMA's.

Within the submission template, third parties should clearly identify who is making the proposal, the anticipated contribution to HPMA aims, and summary information on existing activities known to be taking place in the area.

An initial appraisal of third party proposals will be undertaken by (any combination of) NatureScot, JNCC, Marine Scotland or other parties as requested by Marine Scotland. This will depend on the nature of the proposals and will include consideration of socio-economic factors.

Subsequent, formal assessment of proposals will be led by NatureScot or JNCC as part of the national process. Modifications, such as to the boundary (i.e. shape and size), may be made through subsequent stakeholder review and discussion.

Further details on the timetable and submission mechanisms will be published when the third party proposals process launches in 2023.

For information on how your personal data will be handled as part of this process, please view our Privacy Notices - [NatureScot](#) and [JNCC](#).



## Submission template and guidance for third party proposals for HPMA's in Scottish waters

### General Information

#### Contact Details:

Please provide a name, postal address, email address and phone number for the lead contact person regarding your proposal.

#### Suggested name of proposed HPMA:

Insert suggested name of the proposed HPMA.

#### Summary description of the proposed HPMA:

Please provide a succinct (no more than 10 sentences) description of the proposal - 'what, where and why?' as if introducing the proposal to other marine stakeholders.

#### The presence of functions and resources of significance to Scotland's seas:

This requested information relates to Stage 1 of the HPMA site selection process. Please provide a description of the functions and resources of significance to Scotland's seas that are present within the boundary of the proposed HPMA and outline how these provide for ecosystem protection and/or recovery. Please note that whilst HPMA's allow for carefully managed enjoyment and appreciation, this cannot be the primary or sole purpose of a proposal. Refer to Annexes A and B for further information.

### **Envisaged contribution to HPMA aims:**

This requested information relates to Stage 2 of the HPMA site selection process. Please provide a description of the anticipated contribution that the proposed HPMA will provide to meet the overarching aims of HPMA. Refer to Section 2 and Annex A of the HPMA selection guidelines for further information.

### **Summary information on existing activities taking place within the area:**

This requested information relates to Stage 4 of the HPMA site selection process. Please provide a qualitative description of existing activities known to be taking place within the boundary of the proposed HPMA. Refer to Annex A for further information.

## **Supporting maps, data and references**

### **Map(s) showing boundary of proposed HPMA**

Please include an indicative map(s) showing the boundary of the proposed HPMA. Final boundaries of any shortlisted locations are likely to be refined throughout subsequent HPMA processes. If possible, please provide proposed boundary maps in a recognised Geographic Information System (GIS) format (such as a shapefile or file geodatabase). Other formats are also acceptable, including images of annotated maps. If you submit proposed boundary locations in anything other than a GIS format, you must provide an associated electronic file (such as an Excel csv file), listing coordinates of the main boundary nodes. Please use the World Geodetic System (WGS) 1984 datum using decimal degrees of latitude and longitude, or if this is not possible please specify the units and projection.

Please indicate what boundary information you have provided to support your submission using the check boxes below:

**Map(s) of proposed HPMA boundary attached?**

Yes

No

**Format of proposed HPMA boundary?**

GIS

Other

**If 'GIS' - are file(s) of proposed HPMA boundary attached?**

Yes

No

If yes, please insert file name(s)
------------------------------------

**If 'Other' - are boundary node coordinate details provided?**

Yes

No

If yes, please insert coordinate details here.  Example format - "A" = 58.104500, -5.442817 "B" = 58.115483, -5.525083 (using datum WGS 1984)
---

## **Evidence to support the basis for the proposal**

Please provide links to relevant information sources (e.g. reports, journal papers, published datasets etc.) and include map(s) representing evidence in support of the presence and distribution of the functions and resources encompassed by the area as described above. For example, regarding the distribution of blue carbon or essential fish habitats. In some cases, it may be appropriate to show multiple mapping outputs to support the rationale for a proposal. Information regarding the age, origin and ability to use / re-use underpinning datasets should also be provided. Where practicable, please provide supporting evidence in a recognised GIS format (such as a shapefile or file geodatabase) with appropriate metadata. 'Unmapped' electronic data files or annotated maps are acceptable.

Please indicate what evidence you have provided to support your submission using the check boxes below:

### **Evidence map(s) for the proposed HPMA attached?**

Yes

No

### **Format of evidence mapping?**

GIS

Other

### **If 'GIS' - are evidence mapping file(s) attached?**

Yes

No

Insert file name(s) and brief summary of materials supplied - including age, source and any re-use / copyright constraints (if known)
---

**If 'Other' - is further information / detail provided?**

Yes

No

Insert file name(s) and brief summary of materials supplied - including age, source and any re-use / copyright constraints (if known)

**References / other information sources:**

Please list all references to support the proposal. If possible, include hyperlinks to where the supporting cited literature (or datasets / mapping) is available online.

**Additional considerations for the selection of HPMA**s

**Ensuring a balanced representation of the ecology of Scotland's seas and their geographical spread**

**Which biogeographic region is the proposed HPMA in?**

Biogeographic regions can be viewed via the [JNCC MPA Mapper](#). Select 'Administrative areas' then toggle on the 'Charting Progress 2 biogeographic regions' layer.

Northern North Sea

Scottish Continental Shelf

Minches & Western Scotland

Irish Sea

Atlantic North-West Approaches, Rockall Trough and Faeroe/Shetland Channel

**Is the proposed HPMA located inshore or offshore or both?**

Inshore (<12 NM)

Offshore (>12 NM)

straddles both

**Is the proposed HPMA located within an existing MPA (part or whole site) or outside of the current MPA network?**

Maps of existing MPAs in Scottish waters can be viewed via Marine Scotland's [NMPi](#) as well as the [JNCC MPA Mapper](#).

inside MPA

outside MPA

both inside and outside of an MPA



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