

Written evidence from the Joint Nature Conservation Committee (JNCC) (PAE0021)

JNCC is the public body that advises the UK Government and Devolved Governments on UK-wide and international nature conservation. JNCC delivers the UK and international responsibilities of the Council for Nature Conservation and the Countryside, Natural Resources Wales, Natural England, and NatureScot. The functions that arise from these responsibilities are principally to:

- advise Government on the development and implementation of policies for, or affecting, nature conservation in the UK and internationally;
- provide advice and disseminate knowledge on nature conservation issues affecting the UK and internationally;
- establish common standards throughout the UK for nature conservation, including monitoring, research, and the analysis of results;
- commission or support research which it deems relevant to these functions.

We are delighted to contribute to your important and timely inquiry on protected areas. In Annex I of this letter, we provide our response to the questions you asked of us.

We note that you have collected written evidence from the Devolved Governments, Defra and Natural England and our response does not cover matters relating to specific countries of the UK which are better addressed by the relevant Country Nature Conservation Body or Government. Therefore, we have focussed our response on UK-wide issues.

Yours sincerely,



Dr Steve Wilkinson
Director of Ecosystem Evidence and Advice

Annex I – Responses to the Committee’s specific questions

1. What is the JNCC’s role regarding protected areas in (1) England, (2) the UK more widely, and (3) the overseas territories?

In the UK, environmental policy is a devolved responsibility, and each of the four countries of the UK have their own domestic strategies or plans for biodiversity and the environment.

Obligations arising from international treaties and conventions are the responsibility of the UK Government, with the Devolved Governments responsible for implementing obligations that concern devolved matters in Scotland, Wales and Northern Ireland. JNCC works closely with the governments and country nature conservation bodies (CNCBs) across the four countries to provide common approaches, shared solutions and sharing of best practice, whilst building a robust and cost-effective evidence base across the UK. We use this to assess effectiveness of policies and to inform future investment in nature recovery.

JNCC is the statutory adviser on nature conservation in the UK offshore marine environment, which begins at the edge of territorial waters (12 nautical miles) and extends to the edge of the UK Continental Shelf.

JNCC is also the UK Government’s nature conservation adviser in international fora, advising on the UK’s implementation of Multi-lateral Environmental Agreements (MEAs), and taking forward the views from the four countries of the UK to inform international policy development. This includes providing scientific and technical advice to the UK Government, Devolved Governments and the CNCBs on the interpretation, application and implementation of several MEAs which include provisions related to protected areas: the Ramsar Convention, the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Convention, the Bern Convention and the Convention on Biological Diversity (CBD).

JNCC has been working with the UK’s Overseas Territories for over 20 years, providing technical assistance to support their biodiversity and wider environmental strategies. JNCC also provides scientific advice to the UK Government, which provides support to the Overseas Territories to manage their environment and enhance economic security and disaster resilience through a variety of policy initiatives and funding programmes.

JNCC has a role in site selection and protected area designation:

- Working closely with the CNCBs, JNCC advises UK Government and the Devolved Governments on the designation of European Marine Sites under the Conservation of Offshore Marine Habitats & Species Regulations 2017 (as amended) and a national tier of Marine Protected Areas (MPAs) designated under the UK Marine & Coastal Access Act 2009.
- JNCC is the statutory body¹ giving advice in relation to the application of

¹ Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, Conservation (Natural Habitats, etc.) (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 and Conservation (Natural Habitats, &c.) (EU Exit) (Scotland)

Stage 2 selection criteria of Annex III of the Habitats Directive² in the designation of Special Areas of Conservation (SACs) (which include terrestrial and marine sites).

- JNCC also lead the production of the guidelines for Sites of Special Scientific Interest (SSSIs)³ for England, Wales and Scotland. Natural England, Natural Resources Wales and NatureScot have a duty under the Wildlife and Countryside Act 1981 (as amended) and under the Nature Conservation (Scotland) Act 2004 respectively, to notify any area of land which in their opinion is "*of special interest by reason of its flora, fauna, or geological or physiographical features*". Therefore, the Guidelines for the Selection of Biological SSSIs provide a consistent rationale for the evaluation and selection of biological SSSI throughout Great Britain.
- JNCC also undertakes periodic reviews of the implementation of aspects of the protected areas network such as the SPA review⁴.

JNCC provides protected areas data, information and advice:

- JNCC publishes the "Standard Data Forms" for all UK Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) and maintains a UK database of these sites. We provide these data to the Bern Convention for their Emerald Network Database.
- JNCC also manage the submission of data for all UK protected areas to the World Database on Protected Areas, in addition to submitting data to the OSPAR Commission and to the Ramsar Convention.
- For each offshore MPA that is designated, we produce and publish conservation advice packages that are kept up to date to inform how management of activities should be undertaken with respect to best achieving the conservation objectives of offshore MPAs. This involves close interaction and collaboration with offshore industries and regulatory authorities such as those engaged in oil and gas extraction.
- We have produced Site Information Centres for all offshore MPAs in the UK. These offer a single, consistent and up-to date point of reference for offshore MPAs. Our MPA mapper is an interactive resource that provides information on MPA boundaries and their protected features.
- JNCC has a responsibility to provide advice on offshore marine industry activities in UK waters that may impact MPAs under the legislation listed above. This includes at strategic plan level through to project level and decommissioning. Whilst we provide advice on all offshore marine industries, it is worth noting that we are the main Statutory Nature Conservation Body that provides advice in relation to the oil and gas industry, given its further offshore location. We also provide nature conservation advice in relation to marine activity in Overseas Territories when it is requested. For example, we have supported the Falkland Government with advice in relation to oil and gas exploration.
- JNCC has a statutory role to provide advice to the Appropriate Authority in certain cases which are being considered under the provisions of Regulation 64 of the Habitats Regulations 2017 (as amended), and equivalent provisions in Scotland and Northern Ireland⁵, as Imperative

(Amendment) Regulations 2019

² [Council Directive 92/43/EEC](#)

³ [Guidelines for selection of SSSIs | JNCC - Adviser to Government on Nature Conservation](#)

⁴ [The status of UK SPAs in the 2000s: the Third Network Review | JNCC Resource Hub](#)

⁵ the Conservation of Habitats and Species Regulations 2017 (as amended) in

Reasons of Overriding Public Interest (IROPI). JNCC should be consulted by the Appropriate Authority to give advice on the conservation impacts of the proposal in the context of the national (UK) importance of the site and interest features affected.

JNCC has a role in monitoring, assessment, indicators and reporting:

- JNCC in partnership with the CNCBs produces common standards for monitoring of interest features of protected sites (Common Standards Monitoring is further discussed under question 4).
- JNCC leads a suite of UK wide terrestrial biodiversity monitoring schemes for a range of taxonomic groups, in partnership with environmental NGOs and research bodies, with sample points covering protected areas and the wider environment.
- In addition, on behalf of the governments of the four countries of the UK, JNCC will provide the UK-level composite report on the progress towards the objectives *"of enabling the natural habitat types listed in Annex I to the Habitats Directive, and the species listed in Annex II to that Directive, to be maintained at or, where appropriate, restored to a favourable conservation status in their natural range"* under Regulation 9A of the Habitats Regulations (these provisions replace Article 17 and 12 of the Habitats⁶ and Birds Directives⁷, respectively).
- JNCC compiles and publishes the UK Biodiversity Indicators annually, including an indicator on protected areas (see response to question 3).
- With global partners, JNCC has recently developed a new indicator for the management effectiveness of protected areas and other effective area-based conservation measures (OECMs) (MEPCA indicator). This has been adopted as a Complementary Indicator for the Global Biodiversity Framework, requiring information on whether management plans and governance is in place for protected areas.
- JNCC also plays a leading role in the monitoring, assessment and reporting of MPAs across a range of different policy drivers; including the UK Marine & Coastal Access Act six yearly reporting cycle, the Environment Act MPA Target, the UK Marine Strategy (given that MPAs are one of the Programmes of Measures that contribute to the achievement of Good Environment Status), the OSPAR Regional Sea Convention and moving forward the Global Biodiversity Framework Target 3 ("30 by 30") reporting.

2. Please could you provide a list of the different types of protected areas in the UK (including both protected sites and landscapes), with a definition of each type of protected area, and any further information you can provide on the key protections in place for the different designations?

England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters); the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland; the Conservation (Natural Habitats &c.) (Northern Ireland) Regulations 1995 (as amended) in Northern Ireland; the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

⁶ [Council Directive 92/43/EEC](#)

⁷ [Directive 2009/147/EC](#)

There is a suite of different protected areas in the UK with different underpinning legislation. Some are established solely for nature conservation, while others serve a range of purposes including nature, landscape and amenity values. There are also several types of MPAs in the UK, which in combination are intended contribute to an ecologically coherent and well- managed network as called for under the OSPAR Convention for the conservation of the marine environment across the North-east Atlantic.

Sites of Special Scientific Interest (SSSIs) / Areas of Special Scientific Interest (ASSIs) – designated to protect any area of special interest for its flora, fauna, geological or physiographical features. These are coastal and terrestrial designations with some sites protecting marine features. These sites are designated under the Wildlife & Countryside Act 1981, repealed and superseded by the Nature Conservation (Scotland) Act 2004. ASSIs are designated in Northern Ireland under the Environment (Northern Ireland) Order 2002 and are equivalent to SSSIs in England, Scotland and Wales. Through these pieces of legislation, the relevant CNCB works closely with owners and occupiers of land within an A/SSSI to ensure appropriate management of a site’s interest features, whilst owners and occupiers must apply to the relevant CNCB for consent to carry out certain operations. Furthermore, it is an offence for anyone to damage intentionally or recklessly the protected features of an A/SSSI. The legislation places an obligation on public bodies to take reasonable steps to conserve and enhance the special features of SSSIs when carrying out their statutory duties and giving others permission for works, such as reviewing planning applications.

Special Areas of Conservation (SACs) – designated to protect habitats and species of European importance as set out under the EC Habitats Directive and transposed into domestic law where collectively with SPAs they are referred to as European Sites and European Marine Sites.⁸

Special Protection Areas (SPAs) – classified to protect bird species of European importance and regularly occurring migratory birds as set out under the EC Wild Birds Directive and transposed also into domestic law⁸.

Together, SACs and SPAs form the National Site Network and are also the UK’s sites in the Bern Convention’s pan-European Emerald Network. On land, SACs and SPAs are underpinned by A/SSSIs. In addition to the protection afforded by the A/SSSI designation, the Habitats Regulations⁸ provide for further site protection measures as well as a range of other provisions to strengthen management of sites. A Habitats Regulations Assessment is required for any plan or project which is likely to have a significant effect on a SAC or SPA. A plan or project can only be authorised once it has been shown through an appropriate assessment that it will not adversely affect the integrity of the site. In instances where damage could occur, a plan or project may proceed if there

⁸ the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters); the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland; the Conservation (Natural Habitats &c.) (Northern Ireland) Regulations 1995 (as amended) in Northern Ireland; the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

are no alternative solutions, and where it must be carried out for imperative reasons of overriding public interest. In such instances, compensation must be secured to ensure the overall integrity of the National Site Network.

Ramsar Sites – wetlands of international importance designated under the Ramsar Convention. These are coastal and terrestrial designations with some sites protecting marine features. These sites are usually underpinned by A/SSSIs designations which allows for the management of Ramsar Sites set out by the Ramsar Convention, and many are also SPAs. In England, Wales and Northern Ireland it is government policy that Ramsar sites are given the same protection as SACs and SPAs. It is Scottish Government policy that Ramsar protection requirements are achieved by co-location with European sites and/or SSSIs. The site protection afforded by the provisions of the Habitats Regulations apply only to Ramsar features which are also interest features on the co-located SAC or SPA. For other features, the protections are based on the SSSI interest.

Marine Conservation Zones (MCZs) and Nature Conservation Marine Protected Areas – designated to protect nationally important species, habitats, ecological processes and features of geological/geomorphological importance. These national sites are designated using powers contained with the Marine & Coastal Access Act 2009 for inshore Welsh and English waters and all UK offshore waters, the Marine (Scotland) Act 2010 for inshore Scottish waters and the Northern Ireland Marine Act 2013 for inshore Northern Irish waters. The Marine Management Organisation (MMO)⁹ is the lead authority regarding the implementation of, and compliance with, any measures implemented for the management of fishing activity in offshore MCZs. Licensable activities such as oil and gas exploration within MCZs have to comply with The Conservation of Offshore Marine Habitats and Species Regulations 2017. JNCC's conservation advice supports the consents process by setting out the conservation objectives for the protected feature of the MPA and advice on activities that may result in pressures to which the protected feature is considered sensitive. For inshore, the legislation in the respective countries places statutory duties on public authorities, Inshore Fisheries and Conservation Authorities (IFCAs) in England, Marine Scotland in Scotland (also for offshore), Welsh Government for Wales and DAERA for Northern Ireland to manage these protected areas to further their conservation objectives. The legislation mentioned above also set out a series of byelaws to protect MCZs and Nature Conservation Marine Protected Areas from activities that could damage any feature.

Highly Protected Marine Areas (HMPAs) – are areas of the sea designated for the protection and recovery of marine ecosystems. They prohibit extractive, destructive, and depositional uses, allowing only non-damaging levels of other activities to the extent permitted by international law. By setting aside some areas of sea with high levels of protection, HPMAs will allow nature to recover to a more natural state, allowing ecosystems to thrive. Their key purpose is biodiversity recovery. The UK Government have recently announced that they intend to designate the first three Highly Protected Marine Areas in English waters before 6 July 2023.

⁹ <https://www.gov.uk/government/collections/managing-fisheries-in-marine-protected-areas>

National Nature Reserves (NNRs) – (England, Scotland, Wales and Northern Ireland): the National Parks and Access to the Countryside Act 1949 is the primary legislation that established these protected areas in England, Scotland and Wales, defined as *"land managed solely for a conservation purpose but also for a recreational purpose, if the management of the land for the recreational purpose does not compromise its management for the conservation purpose"*. The Act clarifies that the purpose of conservation is fulfilled if the NNR is managed for the purpose of *"providing, under suitable conditions and control, special opportunities for the study of, and research into, matters relating to the fauna and flora of GB and the physical conditions in which they live, and for the study of geological and physiographical features of special interest in the area, or preserving flora, fauna or geological or physiographical features of special interest in the area"*. The Wildlife and Countryside Act 1981 confirmed the NNR designation clarifying that land to be declared a NNR includes *"any land above mean low water mark and any land covered by estuarial waters"*. In Northern Ireland, National Nature Reserves and Nature Reserves are established under the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 in which *"nature reserve"* means *any area reserved, managed and used for the purpose of (a) conserving flora, fauna or features of geological, physiographical or other scientific or special interest therein; or (b) providing, under suitable conditions and control, special opportunities for the study of, and research into, matters relating to flora and fauna and the physical conditions in which they live, or for the study of features of geological, physiographical or other scientific or special interest therein.*

Local Nature Reserves (LNRs) – (England, Scotland, Wales): These were a subcategory of the NNRs mentioned above and therefore designated by the same legislation, the National Parks and Access to the Countryside Act 1949 stating that *"the council of a county or county borough, or in Scotland a general or district planning authority shall have power to provide nature reserves on any land in their area (if not held by or managed by the appropriate conservation body).."*. The Act specifies that the local authority needs to consult with the appropriate conservation body.

National Parks – (England, Scotland, Wales and Northern Ireland): In England, Scotland and Wales these were first introduced by the National Parks and Access to the Countryside Act 1949, National Parks *"have the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of those areas and promoting opportunities for the understanding and enjoyment of the special quality of those areas by the public"*. In Scotland, the aforementioned Act was superseded by the National Parks (Scotland) Act 2000, which adds that their aim is *"to promote sustainable use of the natural resources of the area and to promote sustainable economic and social development of the area's communities"*, in addition to the ones mentioned in the previous Act. In Northern Ireland, National Parks can be established under the Nature Conservation and Amenity Lands Order 1985, for the purposes of *"conserving or enhancing the natural beauty or amenities of that area; conserving wildlife, historic objects, or natural phenomena therein; promoting the*

enjoyment by the public of the area; and providing or maintaining public access to the area”.

However, there aren't currently any National Parks in Northern Ireland.

Areas of Outstanding Natural Beauty (AONBs) – (England, Wales, and Northern Ireland): first introduced by the National Parks and Access to the Countryside Act 1949 in England and Wales, this was repealed by the Countryside and Rights of Way Act 2000 defining them as *“where an area that is not in a National Park but that it is of such outstanding natural beauty that it is desirable that the provisions of this Part relating to areas designated under this section should apply to it, for the purpose of conserving and enhancing the natural beauty of the area..”*. In Northern Ireland, AONBs were originally established under the Amenity Land Act 1965, then repealed under the Nature Conservation and Amenity Lands Order 1985, as *“an area (not being an area within a National Park) to be of such outstanding natural beauty that it is desirable that the provisions of this Article should apply to the area, the Department may make an order designating it as an area of outstanding natural beauty”*.

National Scenic Areas (NSAs) – (Scotland): these can be considered the counterparts of the AONBs for Scotland, established by the Town and Country Planning (Scotland) Act 1997 stating that *“where it appears to the Scottish Ministers that an area of outstanding scenic value in a national context...they may by direction designate the area as National Scenic Area”*. Specific conditions to take into account include that the area is of outstanding beauty, and whether the amenity of the area is of historical, cultural or environmental importance, the nature of any buildings or other structures within it, and any flora, fauna or physiographical features of the area that are to have been produced by human intervention in the landscape to any extent. The Planning etc. (Scotland) Act 2006 gave the NSAs a statutory basis for which special protection measures are required.

3. What is the JNCC's latest assessment of the current environmental state of the protected areas in both England and the UK more widely which might be included in the commitment to protect 30% of land and sea by 2030, across the different protected area designations?

We note that Natural England in their evidence the Committee¹⁰ have provided information on the state of protected areas in England and so our response is focused on the evidence at the UK-level.

JNCC's Indicator C1¹¹, part of the UK Biodiversity Indicators, shows the extent of UK protected areas on land and at sea. It also shows the condition of terrestrial and coastal features on Areas or Sites of Special Scientific Interest (A/SSSIs) of protected areas in the UK.

Indicator C1 Extent

The total extent of land and sea protected in the UK through national and international protected areas, and through wider landscape designations, has

¹⁰ <https://committees.parliament.uk/writtenevidence/120615/pdf/>

¹¹ [UKBI - C1. Protected areas | JNCC - Adviser to Government on Nature Conservation](#)

increased by 13 million hectares (MHa), from 27.6 MHa in December 2017 to 40.6 MHa as of 31 March 2022.

This increase is almost entirely down to the designation of inshore and offshore marine sites. The extent of protected areas on land has increased by 8,613 hectares since 2017.

This means protected areas cover 27.8% of land and 38.2% of seas across the UK. To note that the extent is based on the following site designations:

Areas of Special

Scientific Interest (Northern Ireland), Sites of Special Scientific Interest (England, Scotland

and Wales), National Nature Reserves, Marine Conservation Zones, Nature Conservation

Marine Protected Areas, Ramsar Sites, Special Areas of Conservation (including candidate Special Areas of Conservation and Sites of Community Importance), Special Protection Areas, Areas of Outstanding Natural Beauty, National Scenic Areas, National Parks.

10.6% of land coverage is designated specifically for biodiversity or conservation of specific features e.g. A/SSSI, SAC, SPA, Ramsar, NNR (i.e. excluding landscape scale site types such as AONBs).

Indicator C1 Condition

A/SSSIs: are notified with the aim of conserving specific biological or geological features. The indicator identifies the proportion of these features that are in a desired state (favourable) or have appropriate management but are yet to have regained their favourable status (unfavourable-recovering). The percentage of features, or area, of A/SSSIs in favourable or unfavourable-recovering condition increased from 67% in 2005, to 87% in 2016, and then decreased slightly to 76% by 2022. The data show the proportion of A/SSSIs that are in favourable condition to have changed from 54% in 2005 to 44% in 2022 over the same period the proportion of land in unfavourable-recovering condition has increased from 14% to 31%. These changes may be affected by a greater number of sites/features having been assessed over time.

SACs/SPAs: The proportion of sites in favourable or unfavourable-recovering condition increased from 58% in 2005 to 72% in 2022 for SACs. In the case of SPAs, this same measure increased from 73% in 2005 to a high of 84% from 2011 to 2014, before decreasing to 75% in 2022. The proportion in unfavourable-recovering condition has increased from 17% in 2005 to 30% in 2022 for SACs, and from 9% to 23% for SPAs. This change reflects improved management of sites but is also affected by a greater number of sites/features having been assessed over time. Significant effort has been put into targeted conservation effort, including agreement of the management required with landowners/occupiers.

MPAs: Every six years, UK Government and the Devolved Administrations must report on the extent and condition of MPAs and the MPA network in accordance with clauses set out under the Marine & Coastal Access Act 2009 and equivalent Marine Acts in Northern Ireland and Scotland. These assessments are performed at a country level. The latest assessments were undertaken in 2018, with the

next assessment period set to report to Ministers in 2024. The latest assessments can be accessed here:

- England - [Marine protected areas network report 2012 to 2018 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)
- Scotland - [Marine Protected Area Network - 2018 Report to the Scottish Parliament - gov.scot \(www.gov.scot\)](http://www.gov.scot)
- Wales - [report-on-marine-protected-areas-mpas-2019.pdf \(gov.wales\)](https://gov.wales)
- Northern Ireland - [Report on the creation of a Network of Conservation Sites in the Northern Ireland inshore region: Progress toward establishing an ecologically coherent network of well managed Marine Protected Areas | Department of Agriculture, Environment and Rural Affairs \(daera-ni.gov.uk\)](http://daera-ni.gov.uk)

Marine Act reporting only pertains to national sites (MCZs and Nature Conservation MPAs). Reporting under Regulation 9A of the Habitats Regulations (formerly under Article 17 of the Habitats Directive) covers the contribution of SACs to achieving favourable conservation status of European habitats of importance.

For England, an additional reporting requirement has come onstream requiring an assessment of the condition of all MPAs in England in line with the MPA Target under the Environment Act 2021.

There is no current driver nor policy instrument for coherent or consistent reporting on MPA extent and condition covering the full breadth of designation types in any one of the four countries of the UK, nor at a UK-level. This will be required for reporting into Target 3 of the Global Biodiversity Framework. However, statistics on how well managed and ecologically coherent the MPA network is at a North-east Atlantic scale from the UK feed into an assessment every two years undertaken by OSPAR. The latest report was undertaken in [2021](#), with the next due by November 2023.

A. How do protected sites and protected landscapes respectively compare to the wider environment in England and/or the UK regarding environmental condition and the rate of change in biodiversity (loss or otherwise)

Our response to this question considers the UK, rather than England.

JNCC has undertaken research in partnership with UKCEH and the British Trust for Ornithology on the current effectiveness of terrestrial protected sites for a wide range of species¹². This shows that across the UK or GB, protected sites tend to contain more species and have higher species abundances than in the ~~wider environment~~. However, overall trends in species abundance or occupancy

¹² A. E. Barnes, J. G. Davies, B. Martay, S.J. Harris, D.G. Noble, J.W. Pearce-Higgins & R.A. Robinson (2023) Do conservation designations provide positive benefits for bird species and communities? *Nature Ecology & Evolution* 7:92-101
R. Cooke, F. Mancini, R. Boyd, K. Evans, A. Shaw, T. J. Webb & N. J. B. Isaac (2023) Protected areas support more species than unprotected areas in Great Britain, but lose them equally rapidly *Biological Conservation* 278:109884

show no significant differences to the trends in the wider environment, suggesting that protected sites are not mitigating the pressures and management issues prevalent throughout the UK. We note that for common invertebrate species, there were steeper declines on protected sites. More positively, we were able to show that habitat specialist species and rarer species were particularly benefitting from protected sites, showing higher abundance and greater likelihood of colonisation and persistence. This may be of importance for providing stepping-stones for these more specialised species as the climate changes.

Monitoring of the marine environment is costly and budgets for monitoring have been challenging to maintain to support a model of cost-effective monitoring for locations within and outside of Marine Protected Areas.

A sub-set of MPAs across the UK are subject to monitoring at the required frequency to make statistically robust conclusions as to change over time in protected feature condition. This does however not leave sufficient budget for effective monitoring outside of MPAs.

It is therefore not currently possible to make any comparisons as to the relative health of marine biodiversity between inside and outside of MPAs.

4. What are the existing monitoring methods used to assess environmental condition in the different protected areas designations, what gaps in monitoring and data exist with regards to the '30 by 30' target, and what improvements could be made to monitoring?

Terrestrial monitoring overview

The key monitoring protocol currently used within protected sites (SAC, SPA, Ramsar, SSSI, ASSI) is 'Common Standards Monitoring', which is carried out by the CNCBs. Wider landscape scale designated areas such as AONBs and National Parks are more reliant on monitoring approaches covering the wider countryside, for example national citizen-science based biodiversity monitoring schemes, and national sample based professional surveys led by the countries (e.g. England Ecosystem Survey, Environment and Rural Affairs Monitoring and Modelling Programme in Wales). The environment agencies carry out water quality monitoring at a range of sites, including within protected area designations. Landowners such as National Trust or RSPB carry out their own monitoring of protected areas within their estates. Alongside traditional field survey there is growing use of new technologies (e.g. Earth Observation, DNA techniques) and more sophisticated analyses that can provide extensive cost-effective monitoring information. Continued review and collaboration between the CNCBs and JNCC, will be required to ensure monitoring approaches continue to adapt to new monitoring technologies and conservation approaches (e.g. rewilding) which will form part of the 30 x 30 delivery.

Common Standards Monitoring

Common Standards Monitoring (CSM) was developed by JNCC, in partnership with the CNCBs, to provide an agreed approach to the assessment of condition on protected sites (SAC, SPA, Ramsar, SSSI, ASSI). CSM aims to be a simple, quick, assessment of feature condition for protected sites, supported by limited, more detailed monitoring. 'Features' are the species, habitats and geological and

geomorphological characteristics for which sites are protected. For example, they might be:

- seals, butterflies, breeding birds;
- woodlands, lagoons, heathlands;
- fossils, landforms.

On land, responsibility for monitoring protected areas lies with the CNCBs. CSM provides a commonality in feature condition assessment which is required for comparative purposes and to facilitate aggregation of condition assessments across protected areas to provide whole country and UK-scale assessments. CSM is well understood and has been the recognised approach to monitoring protected sites since 1998.

The CNCBs have typically monitored sites on a 6-year cycle, although resource limitations have resulted in variation to this, and to work within resourcing limitations and improve efficiency some countries incorporated an element of risk-based monitoring into their approach. However, there is still an acknowledged gap in the level of monitoring that is able to be carried out on protected sites and how up to date our understanding of some sites and features are. For example, a response to a Parliamentary Question in 2021 quoted 78% of SSSIs having not been assessed by NE as to their condition in the last six years¹³, and in Northern Ireland, a report from 2020 noted that 74% of ASSIs had not been monitored in the previous 6 years¹⁴.

Since the inception of CSM there have been technological advances in environmental monitoring and changed thinking about conserving nature at different spatial scales and the dynamic nature of ecosystems. The CNCBs and JNCC have recently reviewed CSM and reaffirmed its value, but place increased emphasis on it as an interpretative framework rather than solely as a standard field methodology. This allows an assessment of condition to be based on evidence from the broader range of sources now available and used in a way consistent with the original CSM ethos on assessing condition.

Citizen-Science Monitoring Schemes

JNCC supports the four countries of the UK by leading a suite of biodiversity monitoring schemes¹⁵ for a range of species (birds, bats, butterflies, pollinators, and plants, informing us about habitats) in partnership with environmental NGOs and research bodies and reliant on many thousands of skilled citizen scientist volunteers. These schemes are UK based and have sample points both within protected areas and the wider countryside. Monitoring helps us understand the current status and trends of wildlife, the factors impacting it, and how it is responding to policies and conservation action. Many of these schemes are very long term, for example, formalised repeat recording of wetland birds started in 1947. JNCC also support ad hoc recording of many different taxonomic groups through support of the Biological Records Centre, with these data able to be of increasing usefulness as new statistical techniques are developed.

¹³ <https://www.theyworkforyou.com/wrans/?id=2021-02-09.151834.h&s=%27SSSI%27#g151834.r0>.

¹⁴ <https://www.rspb.org.uk/globalassets/downloads/pa-documents/a-lost-decade-for-nature-2020>

¹⁵ <https://jncc.gov.uk/our-work/surveillance-schemes/>

Many volunteer recorders are deeply experienced in their taxonomic area of interest, and monitoring schemes provide training and support to participants. Schemes follow carefully designed scientifically robust protocols, and the substantial sample size achieved strengthens the statistical robustness of the schemes (e.g. approximately 4000 1km squares recorded annually in the BTO/JNCC/RSPB Breeding Bird Survey), giving us greater power in using the scheme results. This has meant that the scheme data can be used in analyses such as the study referred to in the previous question (Barnes *et al.* 2003), comparing biodiversity and trends within and outside of protected areas.

Earth Observation

Earth Observation (EO) data and processing techniques have proliferated in recent years, in particular following the launch of the Sentinel satellites from the Copernicus programme.

These data are free at the point of access for all, and provide complete data coverage for the UK at very regular intervals.

Making increasing use of new technologies such as EO is likely to play an important part in cost-effective monitoring. Despite CSM having been designed to be simple and quick, it will still be challenging to use it across the whole of the A/SSSI network and this will be further the case when monitoring the full suite of sites on land which make up "30 by 30". It will be necessary to use alternative measures, many of which could be related to the condition attributes described within CSM, in order to provide sufficient monitoring at the scale of '30 by 30'.

JNCC has been developing and supporting the countries of the UK with the application of EO for operational purposes for many years. EO techniques are now well developed for mapping the extent of habitats based on machine learning methods, and EO based maps are used in all four countries of the UK ('Living England', 'Living Wales', the 'SLAM-MAP' for Scotland, and JNCC have recently been implementing 'Living map' techniques for Northern Ireland).

Although more challenging, EO can also be used to assess change in habitat condition. For example, JNCC EO experts have investigated use of EO data for large scale assessments of the condition of peatland habitats¹⁶.

JNCC have also developed a 'Land Evaluation Tool'¹⁷ which looks at changes in spectral indices to infer change on the ground across large land areas, presenting these data in meaningful ways to help specialists identify areas of concern and so target the available field resource to maximise efficiency. The challenge is to interpret these data to address complex questions about changing vegetation and so provide measures of habitat condition, and ongoing work is needed in this area.

It is important to note that EO techniques cannot replace field survey. There are limitations in what EO can detect (e.g. understanding composition of herbs in a

¹⁶ <https://jncc.gov.uk/about-jncc/jncc-blog/archive/monitoring-peatland-using-earth-observation-data/>

¹⁷ <https://data.jncc.gov.uk/data/9d119d39-111f-4fcf-966a-b8e98b0e6b6f/jncc-report-730.pdf>

grassland), which may be important to know for some protected sites with specific interest features. In addition, the models used rely on 'training' data collected in the field, and field data is also used for validation of model outputs. JNCC is also looking at other means for providing standardised protocols for measuring biodiversity that could be used alongside Earth Observation to understand the condition of habitats.

Marine monitoring overview

JNCC has the responsibility for scientific and technical planning of monitoring beyond 12 nautical miles across the UK, whilst the country agencies respectively are responsible for within their own country waters within 12 nautical miles.

JNCC undertake approximately two offshore MPA surveys per year, working closely with vessel providers (such as Cefas) to secure slots and support from their technical specialists to ensure monitoring can take place. In order to detect statistically significant change over time, sites need to be re-visited at a certain frequency; under the current funding arrangements JNCC are only able to monitor at the desired frequency to detect change 9 of our offshore MPAs from a total list of 76. These 9 can be considered 'sentinel sites' in that findings from monitoring both will tell us about what's happening/changing at that particular site as a result of management intervention, but the sites have been selected in such a way as to be able to use the findings from these sentinel sites and extrapolate them to improving our understanding of other sites across the network; e.g. where similar combination of features are protected, similar management regimes are being put in place/are in place and/or they are representative of sites within the same broad geographical location.

Marine monitoring techniques

A variety of monitoring techniques are employed in order to effectively sample marine biodiversity data within marine protected areas. The type of monitoring techniques employed very much depend on the type of biodiversity features you are looking to sample and the key questions the data will be feeding in to answer (e.g. the condition of seapen and burrowing megafauna habitat change over time as a result of the implementation of fisheries management measures).

Commonly employed techniques include:

- Side-scan sonar and multibeam sonar – designed to provide a coarse overview of the seabed topography and substrate type over a broad area using eco-sounding techniques.
- Sediment coring – designed to be analysed using Particle Size Analysis techniques to ground truth the seabed type in a given location.
- Grab sampling - designed to assess the infaunal component (fauna living within the sediment)

- Drop down video tows – designed to assess the epifauna component (fauna living on the sediment or within the water column)

Often multiple techniques are employed on any given survey designed to provide a well- rounded picture of the extent, distribution and condition of protected features in a given MPA.

Increasingly, novel technologies and more cost-effective techniques are being

trialled and implemented to build a better picture of the status of marine biodiversity in MPAs. This includes technology like Autonomous Underwater Vehicles (AUVs) and environmental DNA analysis. Technological improvements are being made all the time, but access to appropriate equipment at the right time can be challenging meaning it cannot always be implemented when needed.

5. What in the JNCC's view are the main factors affecting the environmental state of England's protected areas on land and sea, including stressors and positive management practices?

As Natural England is the statutory body for the management of protected areas in England, they would be the best suited to provide an answer to this question. Therefore, our response focusses on offshore marine where we are the statutory adviser.

Climate change – There is an increasing body of evidence suggesting that climatic change is starting to have an impact on biodiversity in the marine environment. As our seas further warm and waters become more acidic, we may expect to see distributional shifts in marine biodiversity and changes in planktonic bloom patterns that may have knock on effects on entire marine food webs. It is vitally important we maintain an understanding of the impacts of pressures associated with climate change on marine biodiversity and undertake modelling scenarios and other scientific studies to best advise on how to manage the conservation of marine biodiversity in the face of a changing climate. JNCC has been working with Cefas on this area for a number of years. [Climate Smart MPAs | JNCC - Adviser to Government on Nature Conservation](#)
[Climate change - Cefas \(Centre for Environment, Fisheries and Aquaculture Science\)](#)

Overfishing – Excessive fishing effort not only has the potential to deplete fish stocks beyond Maximum Sustainable Yield, but depending on the gears employed this can have knock on impacts to seabed habitats affecting the conservation of wider marine biodiversity.

Marine energy generation – Oil and gas exploitation, but increasingly offshore renewables, has significant impacts on the status of marine biodiversity. Offshore wind notably being developed under the Energy Security Strategy is targeting areas designated as MPAs (notably sandbank SACs). Co-location opportunities are limited between offshore wind generation and marine conservation, but further research is desperately needed into how the two can co-exist in a way that is beneficial to both achieving net zero by 2050 and fulfilling the nature recovery agenda including meeting commitments under the global biodiversity strategy.

6. In the JNCC's view, how could coordination between the UK Government and the devolved administrations be improved regarding the UK's international obligations for protected areas, and are there any lessons that could be learnt regarding the management of protected areas in Scotland, Wales and/or Northern Ireland?

Devolution allows each country to develop and tailor policies on protected areas, and biodiversity policy more broadly, in the context of their national situation and priorities. Collaboration across the UK is important for a wide range of reasons, for example, efficiency, knowledge sharing, practical reasons related to meeting UK reporting commitments, understanding and enabling the UK network to function well as a whole, and importantly, for clarity of communication, legal clarity, and relationship management with stakeholders who engage with protected sites. This is particularly important with sites that span national boundaries. A core objective of JNCC is to support the four countries of the UK in this collaboration.

The governments of the four countries of the UK work together through the Four Countries Biodiversity Group (4CBG), for which JNCC provide the secretariat. It provides a forum to take forward substantive issues and policy-related matters concerning biodiversity which are common to all four countries. A sub-group of the 4CBG, the Habitats Regulations and International Sites Management Group is led by Defra and involves the four countries' governments and SNCBs to collaborate on matters relating to the National Site Network (SACs and SPAs), Ramsar sites and Bern Convention Emerald Network. Additionally, on behalf of the 4CBG, JNCC currently organises workshops (three per year), bringing together government and the SNCBs to share progress and approaches to achieving Target 3 of the Kunming-Montreal Global Biodiversity Framework ("30 by 30"). A set of common principles for "other effective area-based conservation measures" (OECMs) was established through the workshops and countries continue to share their approaches to developing criteria for OECMs with the aim to have sufficient consistency across the UK. The workshops will also be focussing on methods for, and implementation of, monitoring an expanded network of protected areas (see our response question 4). Working with through the 4CBG, and 30x30 workshops, JNCC will agree consistency in protected areas and OECM data for submission to the World Database on Protected Areas. Furthermore, through a review of the UK Biodiversity Indicators, JNCC will be working closely with the governments and the CNCBs to develop a UK indicator for Target 3¹⁸ which will need to account for both extent

¹⁸ Target 3: Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.

and effectiveness.

At the level of the Statutory Nature Conservation Bodies, work on UK projected areas is fairly well coordinated:

- Within JNCC, we have an MPA coordination group designed to support all aspects of our work on MPAs including designation of new sites, providing management advice to competent authorities, monitoring, assessment and reporting of MPAs.
- On behalf of the Statutory Nature Conservation Bodies' Chief Scientists Group, JNCC run various inter-agency technical groups on protected areas. These are principally designed to exchange intelligence, knowledge and expertise on protected areas and find solutions to common challenges across the UK. For example, the inter-agency MPA Technical Group, Marine Industries Group and the National Site Network Group.

Through the Nature Positive 2030¹⁹ report, the SNCBs came together to identify how the UK can succeed in achieving its ambitious goals for nature recovery. The report draws together extensive examples of good practice that exists across the UK.

All four countries of the UK are conscious of the challenge facing us to improve the extent and effectiveness of the protected area network and have committed to meet the 30*30 target domestically, as well as at UK level. There are a range of areas that could be considered for improvement, from basic actions within the existing legislative framework (e.g., designate more sites, increase resourcing to improve monitoring and site management) to a more fundamental rethink of the system, considering the role and interaction of protected sites within the wider environment, taking a wider view of the effectiveness of the protected areas network, and potentially increasing protected site adaptability.

There is already much valuable relevant work ongoing across the four countries of the UK, for example in the terrestrial environment all four countries of the UK have started developing or implementing plans for nature networks as a key response to climate change adaptation. Different countries and work in the terrestrial/marine environment are at different stages, and are keen to learn from and build on each other's work, and this cross-country engagement is planned within the mechanisms outlined above.

In terms of marine, at an inter-Governmental level, JNCC's view is that work on MPAs now needs to focus on how we 'optimise' the MPA network to maximise on the quality aspects, not just quantity. We are aware of the ambition in England and Scotland to identify Highly Protected Marine Areas, but we must not forget about the importance of focussing on how we maximise conservation gains from the existing network that we have all worked hard for over 10 years to implement. This includes:

- Thinking about how we consider MPAs as Nature-based solutions in the

¹⁹ Brotherton P., Anderson, H., Galbraith, C., Isaac, D., Lawton, J., Lewis, M., Mainwaring-Evans, T., McGuckin, S., Ormerod, S., Osowska, F., Sizeland, P., Stuart, E., Walmsley, C., Waters, R. & Wilkinson, S. (2021) Nature Positive 2030 – Evidence Report. JNCC, Peterborough. ISBN: 978-1- 86107-635-9 [Nature Positive 2030 Evidence Report \(jncc.gov.uk\)](https://jncc.gov.uk)

face of a changing climate and potentially building the conservation of blue carbon into the design and management of the MPA network.

- Considering and realising the opportunities arising from strategic compensation for offshore wind as a means to achieving additionality in the desired conservation outcomes from the MPA network.
- Defining a more 'whole-sites' or ecosystem focussed approach to MPA management and moving away from a component designated feature approach to MPA management.
- A more adaptive policy and legal framework to respond readily to changes needed to the boundaries or conservation objectives of an MPA as we start to see changes in our seas and its marine biodiversity in response to climate change and other anthropogenic drivers.

The previous Joint Administrations Statement on ambition around the MPA network was published over a decade ago. The seascape and threats faced by our marine environment is very different to the picture in 2012. A refresh of this Joint Administrations Statement is needed in the context of the twin crises of biodiversity loss and climate change.