JNCC Report 812B

Technical Annex to Offshore Regulations General Implementation Report for the Reporting period 2019–2024 - UK Offshore Marine Area

Regulation 6A of the Conservation of Offshore Marine Habitats and Species Regulations 2017

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Important to note:
This Technical Annex provides detailed evidence and information on compliance to the Offshore Regulations that underpin the conclusions of the Offshore Regulations General Implementation Report for the Reporting period 2019-2024 - UK Offshore Marine Area (Mitchell *et al.* 2026). Further information on the conservation status of habitats and species under the Offshore Regulations is published separately in their respective Feature Reports.

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Summary

This is the Technical Annex to the first UK report under Regulation 6A of the Conservation of Offshore Marine Habitats and Species Regulations 2017, covering the period 2019-2024. It replaces previous reporting undertaken under the EU Habitats and Birds Directives and sets out how the UK is implementing measures to protect nationally important habitats and species in its offshore marine area. This Technical Annex provides detailed evidence and information that underpins the conclusions in the General Implementation Report (Mitchell *et al.* 2026), relating to conservation status of nationally important habitats and species, key pressures operating offshore and the measures taken to reduce those pressures during the reporting period 2019–2024.

The UK offshore marine area covers approximately 72.2 million hectares, of which, more than 36% is included within the UK Marine Protected Area (MPA) network. Marine habitats and species are protected within Special Areas of Conservation (SACs), which cover almost 11% of the offshore area, and Special Protection Areas (SPAs) designated for marine birds, which cover 0.01% UK offshore marine area. During the reporting period, three new SPAs were designated partly in offshore waters for marine bird species, while the number of SACs remains the same.

The conservation status of offshore habitats and species remains a concern. None of the three offshore marine habitats have achieved Favourable Conservation Status. The conservation status of marine mammals and reptiles is mixed; five of the 17 resident marine mammals assessed are favourable and three are unfavourable. The conservation status of the remaining marine mammal species and single resident marine turtle species are unknown due to insufficient data. In addition, evidence indicates that populations of seabird species are not being maintained, with half of the assessed populations being of greatest conservation concern and the breeding populations of most species occurring offshore are considered threatened with extinction.

Fishing, particularly the use of bottom-towed gear, represents the most widespread pressure on offshore marine habitats, with additional impacts arising from offshore wind development, cable-laying, oil and gas activity and rock dumping. Climate change is impacting all offshore habitats and species and exerts the greatest pressure on seabirds. Additional pressures come from fisheries bycatch, underwater noise, chemical pollution, marine litter, offshore industry activities and High Pathogenicity Avian Influenza.

During the reporting period 2019–2024, measures have been implemented to address some of the pressures mentioned above. These measures include:

- the introduction of fishing byelaws in offshore MPAs to restrict the use bottom-towed gear and reduce disturbance to seafloor habitats,
- a ban on sandeel fishing to support seabird prey availability,
- compensatory measures for offshore wind development agreed at consent stage to maintain network coherence, including actions for Sandbank and Reef habitats, and for Kittiwakes and Red-throated Divers,
- noise management guidance for offshore industries to minimise underwater noise impacts on cetaceans, and
- initiatives to reduce fisheries bycatch, such as the UK Marine Wildlife Bycatch Mitigation Initiative and the Clean Catch programme, alongside the development of improved monitoring frameworks.

Since 2019, several offshore wind projects have been subject to derogations due to Imperative Reasons of Overriding Public Interest (IROPI). IROPI derogations have been made and involved five Offshore Wind (OFW) projects, occurring at least partly in the UK offshore marine area. Compensatory measures have been put in place for three OFW projects in relation to their impacts on Sandbank and Reef habitats within two SACs. Compensatory measures for Kittiwakes and Red-throated Divers have been agreed for two OFW projects in English offshore waters that impact the same offshore SPA.

Many of the measures described above have been implemented only recently, and their effectiveness cannot yet be fully assessed within this reporting period. Pressures from offshore industries and climate change are likely to impede recovery of damaged habitats and depleted species. Such recovery is expected to take place over multiple reporting periods, depending on the sensitivity of the habitat or species and the intensity of the pressure.

Overall, the evidence presented in this Technical Annex has been limited by monitoring capacity and data gaps. However, ongoing pressures from climate change and offshore activities continue to hinder recovery of offshore habitats and species and the ability to assess change in condition. While the status of offshore habitats and species remain a concern, the expansion and development of measures during 2019–2024 indicates some progress is being made to address the more widespread and cross-cutting pressures. Furthermore, the evidence presented in this Technical Annex demonstrates action the UK has taken to meet obligations required by the relevant Articles and provisions transposed into the Offshore Regulations. These include:

- the designation and management of SACs and SPAs,
- appropriate assessments of plans and projects,
- monitoring and reporting conservation status and measures,
- taking steps to maintain populations of naturally occurring birds and preserving, maintaining or re-establishing sufficient diversity and area of habitats.

Key priorities for the implementation of the Offshore Regulations in the future include fully implementing existing and planned measures and closing monitoring and evidence gaps. Crucially, evidence needs to be used more effectively to inform marine planning and decision-making, in order to support the recovery of nationally important offshore habitats and species towards achieving Favourable Conservation Status.

Contents

1. Introduction

This is the Technical Annex to the first UK General Implementation Report (Mitchell *et al.* 2026) under Regulation 6A of the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended – hereafter referred to as the 'Offshore Regulations'). The Offshore Regulations provide part of the legal framework to meet the UK's conservation objectives for nationally important habitats and species within the UK offshore marine area. To support transparency and accountability, Regulation 6A requires a report every six years on the implementation of these duties within the UK's offshore marine area.

Equivalent reporting for nationally important habitats and species within terrestrial and inshore areas are legislated under the country Habitats Regulations: Regulation 9A in England and Wales, Regulation 3Z in Scotland, and Regulation 3Z in Northern Ireland (hereafter collectively referred to as the 'Habitats Regulations'), with reports published by the UK and devolved governments at the respective country scale.

Specifically, the Offshore Regulations and Habitats Regulations require reporting on the conservation status of habitats listed in Annex I and species listed in Annexes II, IV, and V of the Habitats Directive (92/43/EEC; as retained in UK law), as well as relevant bird species under the Wild Birds Directive (2009/147/EC; as retained in UK law) (hereafter, the Habitats Directive and the Birds Directive respectively), as well as the implementation of measures taken to support their protection and recovery.

These obligations originated under EU law but are transposed into domestic UK legislation via the Offshore Regulations and Habitats Regulations. While the UK no longer reports to the European Commission, duties remain in force domestically and continue to underpin the UK's commitment to biodiversity and international conservation agreements. As such, the reporting under the Offshore Regulations and Habitats Regulations supersedes the UK's previous reporting under Article 17 of the Habitats Directive and Article 12 of the Birds Directive.

The UK General Implementation Report (Mitchell *et al.* 2026) and this Technical Annex are the first report under the Offshore Regulations following the UK's withdrawal from the EU and covers the period 2019–2024 only.

This Technical Annex provides detailed evidence and information that underpins the conclusions in the General Implementation Report (Mitchell *et al.* 2026). It focuses on the implementation of measures in the UK offshore marine area to support the protection and recovery of nationally important habitats and species, as well as relevant wild bird species (detailed requirements for Offshore Regulation 6A reporting are listed in Appendix 1). Whilst this Technical Annex includes a summary of the current status of these protected features in the UK offshore marine area, detailed reporting on the conservation status of habitats listed in Annex I and species listed in Annexes II, IV, and V, as well as relevant wild bird species, is published separately in the offshore Feature Reports.

1.1 Content and structure

The reporting under Offshore Regulation 6A focuses on the UK offshore marine area, which is the area beyond 12 nautical miles encompassing the UK's Exclusive Economic Zone and the UK Continental Shelf. The reporting outlines the extent to which the UK has maintained or restored, at Favourable Conservation Status (FCS), the Annex I habitats and Annex II, IV, and V species features listed in Table 1 (all species and habitat types included are listed in Sections 1.4 to 1.6).

Table 1: Description of the Annex I-V features and their corresponding offshore features.

Annex	Description	UK Offshore features
I	Habitat types requiring designation of SACs.	Benthic habitats: Sandbanks slightly covered by seawater at all times; Reefs; and Submarine structures made by leaking gases
II	Species requiring designation of SACs.	Bottlenose Dolphin, Harbour Porpoise, Grey Seal, and Harbour Seal [Note]
IV	Species needing strict protection	All cetaceans (see Table 2) and marine reptile (turtle) species
V	Species whose exploitation must be compatible with conservation.	Grey Seal and Harbour Seal

Note: No distinction between offshore and inshore populations of marine mammals and reptiles are possible.

Status is also assessed for all relevant species of bird listed in Annex I of the Birds Directive (at the point of EU Exit) and all other regularly occurring migratory species in UK offshore waters (hereafter referred to as 'marine birds'). However, FCS has never been assessed for birds under the Birds Directive, so alternative methods that are already used in the UK to assess conservation status in bird populations (such as those used to assess Birds of Conservation Concern and extinction risk) have been utilised.

Detailed reporting on the status of habitats and species (including birds) under the Offshore Regulations is published separately in their respective Feature Reports. Overall statuses and trends will be summarised in Chapter 3. This Technical Annex focuses on the conservation measures used to protect the Annex I habitats and Annex II species within Special Areas of Conservation (SACs), and the Annex I bird species and other regularly occurring breeding/migratory bird species protected within Special Protection Areas (SPAs). SACs and SPAs form the UK's National Site Network.

Focus is also given to the main pressures impacting all the habitats and species covered, and the measures taken to address them. Measures taken both within and outside protected areas are reviewed. The efficacy of these measures are assessed, where possible, in terms of their impacts in achieving the objectives of the Directives as implemented through the Offshore Regulations in the UK offshore marine area.

The chapters on Conservation Status and Measures Taken are divided into marine habitats, marine mammals, marine reptiles (i.e. turtles) and marine birds. The differences in ecology and behaviour of static marine habitats and highly mobile mammals, turtles and birds means that there are significant differences in how they are monitored and assessed, impacted by pressures, and protected through measures.

Throughout the General Implementation Report (Mitchell *et al.* 2026) and this Technical Annex, changes in status, pressures and measures are referenced back to the last reports that were submitted by the UK under Article 17 of the Habitats Directive and Article 12 of the Birds Directive in 2019, which covered the period 2013–2018.

1.2 The UK's offshore marine area

The offshore waters surrounding the United Kingdom are among the most extensive and ecologically diverse in Europe. Stretching across the North Sea, the English Channel, the Celtic Sea, and the Atlantic Ocean, these marine areas encompass a wide range of

habitats, from deep-sea trenches and rugged coastlines to expansive sandbanks and estuarine environments. The extent of the UK's offshore marine area is estimated at 722,128 km^2. It provides a rich tapestry of biodiversity, including a wide array of marine life and habitats which play crucial roles in the UK's environmental health and delivery of ecosystem services. The UK's offshore marine area underpins its economic prosperity and global maritime influence in supporting major economic sectors such as fisheries, shipping and energy production. The UK Governments have set out their aim to recover and protect the richness of our marine environment and wildlife through the development of a strong, ecologically coherent, and well-managed network of marine protected areas that is understood and supported by all sea users (Defra 2024a; DAERA 2024; Welsh Government 2025; Scottish Government 2024).

The UK Marine Protected Area (MPA) network (Figure 1) covers more than 38% of the UK's seas. MPAs are defined geographical areas of the marine environment established and managed to achieve long-term nature conservation and sustainable use. The development of a network of MPAs is part of the UK's commitment to protecting its seas and associated benefits to society for future generations. The UK offshore MPA network contains 78 designated MPAs (which includes SACs and SPAs among other types of MPA; see Figure 1), covering 261,726 km^2, equivalent to 36% of UK's offshore marine area.

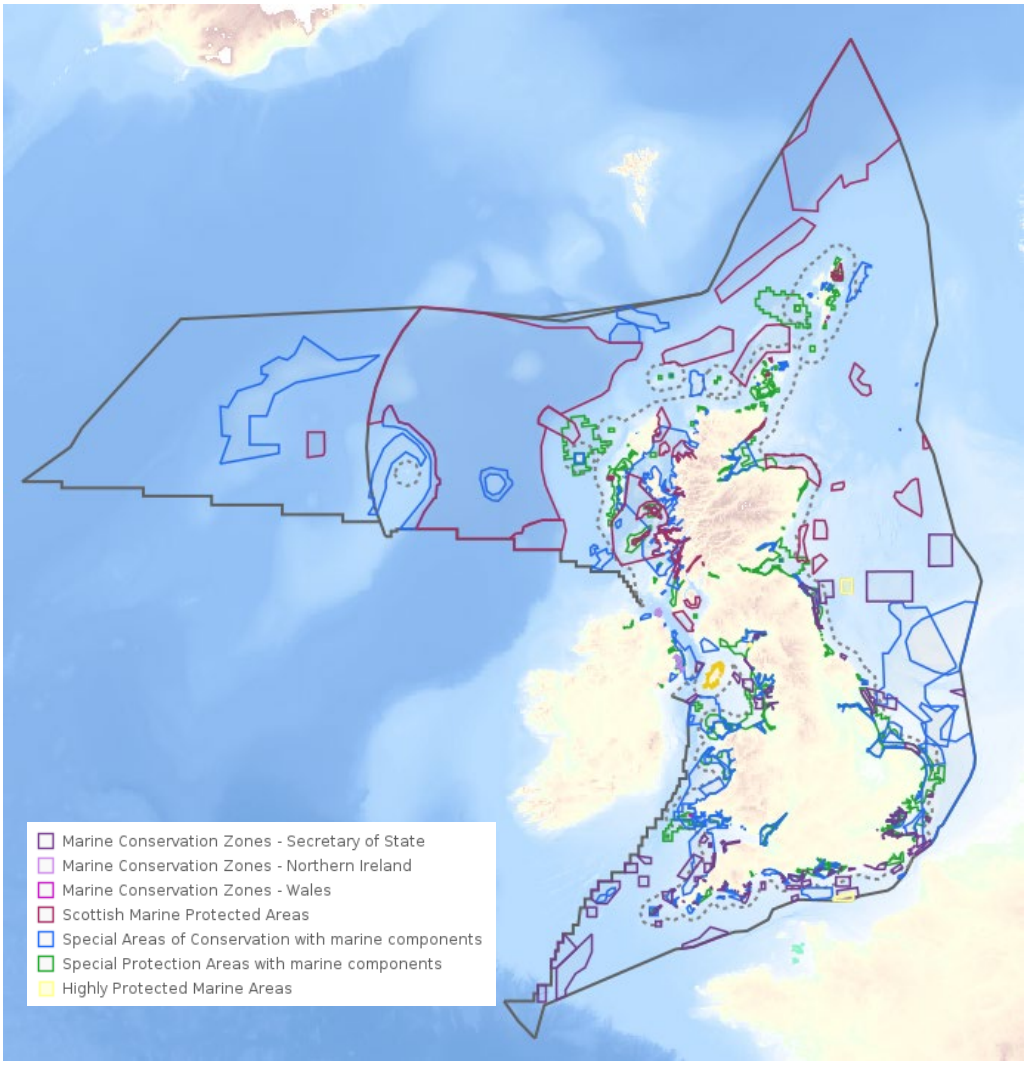

Figure 1: Map of Marine Protected Areas within the UK waters. [source: https://jncc.gov.uk/mpa-mapper/ 27/08/2025]

1.3 Offshore Marine Habitats

Offshore Regulation 6A reporting focuses on the three Annex I marine habitats which are protected within SACs in the UK offshore marine area: Sandbanks which are slightly covered by seawater at all times (hereafter referred to as 'Sandbanks'); Reefs, which combines stony and biogenic reef; and Submarine structures made by leaking gases (hereafter referred to as 'Submarine structures'). Offshore Sandbanks within the UK are located almost entirely within offshore English waters and include large areas, such as Dogger Bank. The largest area of the UK's offshore Reef extent is present in offshore Scottish waters. Areas of both stony reef and biogenic *Sabellaria spinulosa* reef are also present in the Celtic Sea, the English Channel, and Southern North Sea. The known extent of Submarine structures is limited due to difficulties identifying it remotely, with small areas of pockmark fields identified in offshore Scottish waters and a carbonate reef located in the Celtic Sea.

More details on these habitats, their distribution and FCS can be found within the habitats and species Feature Reports.

1.4 Marine Mammals

Offshore Regulation 6A reporting focuses on the UK's resident marine mammals. Overall, 25 marine mammal species and species groups are found in UK waters, consisting of 14 resident cetacean species/species groups, two resident seal species, five vagrant cetacean species, and four vagrant seal species (Table 2a; Table 2b). Bottlenose Dolphin coastal and UK-wide populations have been split for assessment purposes, and as such there are to 15 resident cetacean assessments (see Section 3.3). Both resident seal species (Grey Seal and Harbour Seal) and Harbour Porpoise and Bottlenose Dolphin are listed under Annex II (species requiring designation of SACs). All cetacean species are listed in Annex IV (species in need of strict protection). Marine mammal species referred to as 'resident' are those which are expected to regularly occur in UK waters, either all year round or seasonally, as opposed to 'vagrant' species which appear infrequently or unpredictably. Given the highly mobile nature of marine mammals and their regular widespread movement throughout waters of all UK administrations, assessments were completed at a UK scale as finer-scale country-level reporting has less relevance. This is consistent with previous Article 17 reporting.

Since the 2019 Article 17 reporting, the marine mammal species list has been updated to reflect changes in species occurrence in UK waters. Humpback Whale and Striped Dolphin are now listed as resident species due to increased sightings. The five beaked whale species previously listed as vagrants (Cuvier's Beaked Whale, True's Beaked Whale, Sowerby's Beaked Whale, Blainville's Beaked Whale and Northern Bottlenose Whale) are now aggregated into one 'regularly occurring' beaked whale group, following the approach used by the Small Cetaceans in the European Atlantic and North Sea (SCANS) survey programme (the primary source of effort-related data for many UK species). These species are data-poor individually due to their predominantly offshore distribution and deep diving, cryptic nature. Grouping enables more meaningful outputs for these species, which share similar distributions and sensitivity to pressures and threats. Northern Right Whale, Narwhal, Melon-headed Whale, and Fraser's Dolphin were removed from reporting, due to an absence of recent sightings. Fraser's Dolphin has only had one confirmed sighting since 1996, there have been no records of Melon-headed Whale in UK waters in the last 40 years, and there are no recent records for Narwhal.

Four marine mammal species are listed on Annex II: Grey Seal, Common Seal, Harbour Porpoise, and Bottlenose Dolphin. One of these Annex II marine mammal species

(Harbour Porpoise) is protected within SACs in the UK offshore marine area. The SACs were designated based on high relative density rather than absolute abundance, and individuals move through and out of the SACs regularly.

Table 2a: Listed resident marine mammal species. Bottlenose Dolphin was split into inshore and offshore populations for assessment.

Species code	Species common name	Species scientific name	Annexes
S1349	Bottlenose Dolphin	*Tursiops truncatus*	II; IV
S1350	Common Dolphin	*Delphinus delphis*	IV
S1351	Harbour Porpoise	*Phocoena phocoena*	II; IV
S1364	Grey Seal	*Halichoerus grypus*	II; V
S1365	Common Seal	*Phoca vitulina*	II; V
S2027	Killer Whale	*Orca orcinus*	IV
S2029	Long-finned Pilot Whale	*Globicephala melas*	IV
S2030	Risso's Dolphin	*Grampus griseus*	IV
S2031	Atlantic White-sided Dolphin	*Lagenorhynchus acutus*	IV
S2032	White-beaked Dolphin	*Lagenorhynchus albirostris*	IV
S2618	Minke Whale	*Balaenoptera acutorostrata*	IV
S2621	Fin Whale	*Balaenoptera physalus*	IV
S2624	Sperm Whale	*Physeter macrocephalus*	IV
S1345	Humpback Whale	*Megaptera novaeangliae*	IV
S2034	Striped Dolphin	*Stenella coeruleoalba*	IV
S2625–S2035–S5034–S2038–S2037–S5033	Beaked Whales	Ziphiidae	IV

Table 2b: Listed vagrant marine mammal species.

Species code	Species common name	Species scientific name	Annexes
S2028	False Killer Whale	*Pseudorca crassidens*	IV
S2619	Sei Whale	*Balaenoptera borealis*	IV
S2622	Pygmy Sperm Whale	*Kogia breviceps*	IV
S2637	Hooded Seal	*Cystophora cristata*	IV
S2638	Bearded Seal	*Erignathus barbatus*	IV
S6305	Ringed Seal	*Pusa hispida*	IV
S2639	Harp Seal	*Pagophilus groenlandicus*	IV
S5020	Blue Whale	*Balaenoptera musculus*	IV
S5029	Beluga	*Delphinapterus leucas*	IV

1.5 Marine Reptiles

Offshore Regulation 6A reporting focuses on the one species (Leatherback Turtle) that is considered resident; however, it is a highly migratory species which returns only seasonally to UK waters. Five Annex IV marine reptiles are found in UK waters. The other four (Loggerhead Turtle, Hawksbill Turtle, Kemp's Ridley Turtle, Green Turtle) are considered vagrant species from tropical and subtropical climates that occasionally reach UK waters, carried by ocean currents. UK waters are beyond their core habitat range, and without human intervention, these turtles rarely survive in the colder conditions. There are no SACs for marine reptiles in UK waters and there is limited monitoring of marine turtles in the UK outside of strandings reports.

1.6 Marine Birds

Offshore Regulation 6A reporting focuses on bird species that are regularly found in the UK offshore marine area. The list of species is derived from those included in the 2019 UK Article 12 report. All the species covered by Article 12 are 'regularly occurring breeding species' and/or 'regularly occurring migratory species' and are protected under the Offshore Regulations.

Included here are 15 species that are all 'regularly occurring migratory species' and considered to be 'seabirds', which include: petrels and shearwaters (Procellariiformes); gannet (Suliformes); skuas, gulls and auks (Charadriiformes) (see Table 6). They spend most of their lives at sea, feeding on prey living within the water column (i.e. plankton, fish and squid) or picking detritus from the sea surface, but they all need to return to land to breed.

All but one are 'regularly occurring breeding species' in the UK and breed in colonies, predominantly along the UK's coasts and islands. The exception is Little Auk which breeds in the high Arctic and only visits UK waters during the winter or during migration. Two species included in this report were listed in Annex I of the Birds Directive at the point of EU Exit and receive additional protection under the Offshore Regulations: European Storm-Petrel and Leach's Storm-Petrel.

2. Surveillance

This chapter describes the surveillance in place to assess:

- The conservation status of offshore habitats in Annex I (Section 2.1).
- The conservation status of marine mammals in Annex II, IV and V (Section 2.2).
- The conservation status of marine reptiles in Annex IV (Section 2.3).
- The conservation status of marine birds (Section 2.4).

In Section 2.5, surveillance of specific pressures and their impacts are described. Section 2.5.1 describes surveillance in place to monitor the impact of the incidental capture and killing of Annex IV species (i.e. marine mammals and marine reptiles) due to fisheries bycatch.

No surveillance has been put in place to monitor the taking and exploitation of Annex V species (i.e. Grey Seal and Harbour Seal), for the purpose of establishing whether it is compatible with their maintenance at FCS. That is because seals in the UK are not hunted for their meat. However, measures are in place to limit legal culling of seals and to address illegal killing (see Section 6.6.3).

2.1 Offshore Habitats

The UK Marine Strategy (UKMS) Part 2 provides high level information on monitoring programmes for marine benthic habitats, including offshore (Defra 2022). Dedicated biodiversity condition monitoring of offshore MPAs designated for benthic habitats has been taking place since 2014, and deep sea MPAs since 2016. Between 2016 and 2018, a series of workshops with scientific and policy experts underpinned advice to UK Governments on proposed marine biodiversity monitoring in UK waters (Webb *et al.* 2024). The review outcomes recommended monitoring a total of 24 offshore MPAs to ensure representation of all feature types at a UK scale.

From 2019, the programme prioritised monitoring a subset of 10 offshore MPAs from the total of 56 MPAs where JNCC is the lead SNCB with responsibility for monitoring. The MPAs in the subset were selected to provide as much representativeness of the network as possible, in terms of best (and most monitorable) examples of the different features. However, due to the small size of the MPA subset (< 20% of the total number of MPAs), only about 60% of total feature types are represented and there are very few replicate examples across the different UK biogeographic regions.

It is recommended that a shelf-sea offshore MPA is monitored once every three years, and that a deep-sea MPA is monitored once every six years due to the slower expected recovery rates of their protected features (e.g. deep-sea corals). Monitoring MPAs at these frequencies provides the opportunity for one to two datasets to feed into each six-year reporting cycle, and for change to be detected within the predicted timelines of feature recovery. The ambition is to monitor one offshore English MPA and one offshore Scottish MPA from the subset every year, subject to available funding. This results in a maximum of 6 shelf-sea UK MPAs (three English, three Scottish) being monitored twice in a six-year reporting cycle and no monitoring of deep-sea MPAs. Alternatively, a deep-sea site can be monitored in place of a shelf-sea site. However, completing two surveys per year has not always been possible and this interrupts the monitoring cycle.

The limited subset of MPAs (which lack full feature representativeness) and the above-mentioned constraints mean current offshore MPA monitoring is not fully effective in

providing a robust evidence base of the MPA network. The recommendations for 24 sites to be monitored in the six-year cycle outlined in Webb *et al*. (2024) would require seven offshore shelf sea MPA surveys taking place each year, plus an additional three deep sea sites, to provide fully effective monitoring of a representative sub-set of MPAs. In addition, as current monitoring is focused within MPAs, there is very limited data collected from outside MPAs, which restricts understanding of the environmental condition of the wider seabed and will in the future limit our ability to assess the effectiveness of management measures within MPAs.

2.2 Marine Mammals

The assessment of conservation status of marine mammals relies on separate surveillance schemes for seals (Annex II & V species) and for cetaceans (Annex II & IV species):

2.2.1 Small Cetaceans in European Atlantic waters and the North Sea (SCANS) Surveys

SCANS surveys were most recently conducted in 2022 and had been conducted previously three times at approximately decadal intervals. SCANS provides robust, snapshot estimates of absolute abundance for the most commonly observed species in north-east Atlantic waters. While these estimates have been used in status and impact assessments, the long interval between surveys and their coarse spatial scale have limited their application for other assessment needs (i.e. MPA monitoring).

2.2.2 The Special Committee on Seals (SCOS)

SCOS has a duty, on behalf of the Natural Environment Research Council (NERC), to provide scientific advice to government on matters related to the management of seal populations. Formal advice is given annually based on the latest scientific information on seal populations. Coordinated national monitoring of seals is carried out by the Sea Mammal Research Unit. Monitoring largely consists of aerial surveys at haul-out sites; telemetry tags are also used to better understand offshore movement of seals.

2.3 Marine Reptiles

There is no dedicated monitoring for marine reptiles in UK waters, though sightings of marine turtles during aerial or boat-based surveys at sea for cetaceans and marine birds are recorded. Both the Bycatch Monitoring Programme (BMP; see Section 2.5.1) and the UK strandings schemes (see Section 2.5.3) include turtles within their remits.

2.4 Marine Birds

Seabird populations in the UK are monitored primarily when they congregate on land to breed. Seabird species status assessments for 2019–2024 Offshore Regulations reporting and the Habitats Regulations country reporting were derived mainly from data collected by the Seabird Monitoring Programme (SMP) and the ‘Seabirds Count’ census.

The SMP is funded jointly by the British Trust for Ornithology and JNCC, in association with the Royal Society for the Protection of Birds and support of an advisory group, with fieldwork conducted by both non-professional and professional surveyors. Initiated in 1986, it is one of the longest running schemes of its kind. It provides annual trends in abundance and breeding success of seabirds at a sample of breeding colonies in the UK. It also contributes to SPA monitoring. ‘Seabirds Count’ is the fourth census of breeding

seabirds in Britain and Ireland (Burnell *et al*. 2023). It surveyed 25 species at over 10,000 sites between 2015 and 2021 to provide a comprehensive update on the state of these populations.

It is also possible to survey seabirds when they are out at sea, from boats or from the air. At-sea data cannot reliably estimate population size or trends, as populations disperse over thousands of square kilometres; however, it can identify significant congregations. Data from at-sea surveys have been used in the designation of SPAs, to develop an index to aid oil pollution emergency decision-making, and for many other marine spatial planning projects across Europe. The European Seabirds at Sea Partnership (ESAS) has developed standardised methods and a shared database for at-sea survey data. While most surveys are conducted by professional contractors, JNCC's Volunteer Seabirds At Sea project utilises ferries and other 'vessels of opportunity' to collect ESAS standard data using trained volunteer surveyors.

2.5 Monitoring pressures, impacts & efficacy of measures

The UK has a number of national programmes which work alongside the surveillance programmes described above to help to monitor and assess impacts of pressures (see Chapter 5), and the efficacy of measures put in place to reduce them (see Chapter 6).

2.5.1 Fisheries Bycatch

The UK Bycatch Monitoring Programme (BMP) was originally set up to monitor the impact of the incidental capture and killing of Annex IV species (i.e. marine mammals and marine reptiles) in UK marine fisheries due to bycatch. BMP also monitors seabird bycatch.

BMP places dedicated observers onboard commercial fishing vessels in fisheries where cetaceans (and more recently seabirds) are at a higher risk of being caught. Historically, it has focused on midwater trawls and static net fisheries in key ICES areas, but there are some at-sea catch sampling in Scottish fisheries. It provides observed bycatch records of most sensitive species and bycatch estimates of marine mammals - Harbour Porpoise, Common Dolphin and seals (e.g. Northridge *et al*. 2023). It has also provided data for estimates of seabird bycatch (Northridge *et al*. 2020, 2023). The BMP also monitors the effectiveness of acoustic 'pinger' devices attached to nets to deter cetaceans, which is mandatory for some vessels.

The UK Marine Wildlife Bycatch Mitigation Initiative (2022) aims to improve our understanding of bycatch and entanglement of sensitive marine species (including seals, cetaceans, elasmobranchs and sea birds) through monitoring and scientific research. It sets out policy objectives to identify 'hotspot' or high-risk areas/gear types/fisheries in which to focus monitoring and mitigation and develop and implement effective measures to minimise bycatch and entanglement. To help achieve these aims, the Clean Catch project is investigating new ways to monitor and minimise bycatch in UK fisheries. This has included the development of a bycatch self-reporting mobile app, trials of technologies to reduce bycatch, and the development of an online bycatch mitigation hub.

2.5.2 Underwater Noise Registry

Marine mammals are sensitive to underwater noise from anthropogenic activities (see Section 5.7). The Marine Noise Registry (MNR) was developed by Defra and JNCC to record impulsive noise arising from human activities in UK seas. It aims to quantify the pressure on the environment of relevant impulsive sound sources throughout the year. This in turn aids the definition of baseline levels for impulsive noise in UK waters.

Information from the MNR is fed into the OSPAR and UKMS indicator on impulsive noise from offshore industry (Merchant *et al*. 2022a, 2022b).

There is also an OSPAR and UKMS indicator on ambient noise (OSPAR 2023c), which assesses the impacts of increased noise in the marine environment. Increased ambient underwater noise, created by shipping and increasingly frequent storms due to climate change, can inhibit species' abilities to communicate and hunt.

Assessments of these noise indicators are completed annually by the Centre of Environment, Fisheries and Aquaculture Science (Cefas) on behalf of the UK. Trends are published every six years through the UKMS and OSPAR (OSPAR 2023c; UKMS 2024c).

2.5.3 The Cetacean Strandings Investigation Programme (CSIP) and the Scottish Marine Animal Stranding Scheme (SMASS)

Both Cetacean Strandings Investigation Programme (CSIP) and Scottish Marine Animal Stranding Scheme (SMASS) schemes collect data on dead-stranded marine animals around the UK. They investigate and identify the cause of death, monitor disease in stranded animals, and collect key health information. Together these facilitate the monitoring of pressures, investigation of spatiotemporal trends in disease, exposure to pollutants, and causes of mortality. Post-mortem analysis provides insights into age structure, sex, body condition, reproductive patterns, and diet. While primarily focussed on cetaceans, both now include seals and marine turtles in their remit.

3. Extent to which Favourable Conservation Status (FCS) has been achieved

3.1 Summary of Conservation Status

Of the three marine habitats assessed, the overall conservation status of two of these features were considered ‘Unfavourable’ and one ‘Unknown’. No offshore habitats are therefore considered to have achieved FCS in the latest assessment (Figure 2). Trends were unknown for two marine habitats and stable for the third.

The conservation status of the majority of marine mammal species (Annex II and IV) was Unknown. Three were considered Unfavourable and five Favourable (Figure 2). Trends were either stable or unknown, and no species are considered to be declining (Figure 2). The conservation status of the single resident marine reptile species (Leatherback Turtle, Annex IV) was Unknown.

Conservation status of birds had not been explicitly assessed previously under the Birds Directive. But for this offshore report, methods already established in the UK were used to assess conservation status of the breeding, wintering and/or passage populations of each species where relevant. The Birds of Conservation Concern (BoCC) assessment (Stanbury *et al*. 2021, 2024) was applied to 16 populations of marine birds (includes 15 species): eight were assessed as Red (i.e. of greatest concern), seven Amber, and one Green (least concern). The IUCN Red List of extinction risk of birds in Britain provided a more concerning assessment, with 12 species assessed as ‘threatened’, with only four considered Least Concern (Figure 2). Clearly the majority of UK populations of offshore seabird species assessed are not being ‘maintained’ as required under the Offshore Regulations.

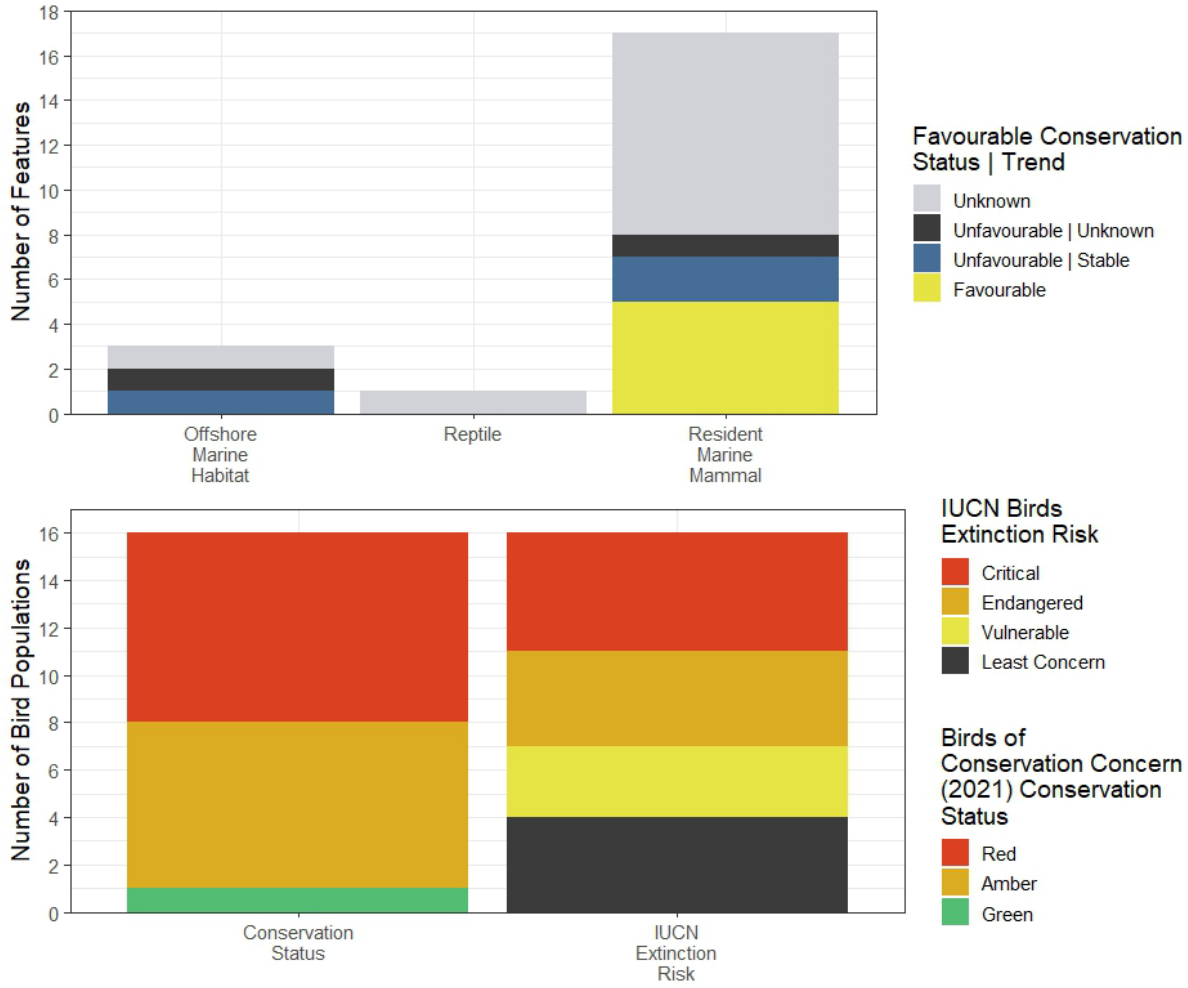

Figure 1: Current status of offshore UK marine features summarising: for habitats, reptiles and resident mammals features (top graph) the number of features within each Conservation Status and Trend category (Unfavourable-Inadequate and Unfavourable-Bad have been combined); for birds (bottom graph), the Conservation Status (Red, Amber, Green) and Extinction Risk for each assessed bird population (see Stanbury *et al*. 2021, 2024). Vagrant marine mammals and bird populations without an assessment or that are data deficient are not included.

More details on these assessment results are provided in the sections below and can also be found within the habitats and species Feature Reports.

An overview of FCS and trends taken from the latest assessment are compared with the previous reporting round (published in 2019 using data collected between 2012 and 2018) for all offshore marine habitats, marine mammals, and marine reptiles is shown in Tables 3–5.

3.2 Offshore Marine Habitats

The 2019–2024 conservation status of both Sandbanks and Reefs is assessed as Unfavourable-bad, while Submarine structures is Unknown (Figure 2; Table 3). While the condition of features within some MPAs are considered to be favourable (e.g. Reef in Pisces Reef Complex SAC or Submarine Structures in Croker Carbonate Slabs SAC), the overall conservation status overall of features as a whole were not considered to be favourable. Since 2019, there have been very limited or no repeat surveys of offshore SACs, meaning there is a lack of long-term monitoring evidence to draw updated

conclusions from feature condition within sites. The overall trend for Sandbanks is thought to be stable as the feature is defined by topography and substrate type which are determined by geological and/or hydrodynamic processes, meaning the range and area is unlikely to have changed; assessments of structure and function show little change. The trend for Reefs is unknown due to a lack of data and changes to methodology. There was no requirement to assess FCS for offshore habitats in 2019 as these were only assessed at the UK scale.

The four parameters that are used to assess FCS include Area, Range, Structure and Function (condition), and Future Prospects. Changes in Area and Range have mostly resulted from improved mapping methods as opposed to a genuine change. As comparable methods were used for assessments across reporting rounds, it is unlikely that the conservation status assessment of these parameters would have changed since 2019. Although there have been minor changes since 2019 to the Structure and Function of Sandbanks and Reefs (based on the UKMS 'Extent of Physical Disturbance to Benthic Habitats' indicator; Matear *et al*. 2023; UKMS 2024a), updates to the indicator's methodology, limited new data, and resulting low confidence in the findings mean that trends are uncertain. Future Prospects assesses direction of change over the next two reporting cycles. For Sandbanks and Reefs, the results for this parameter are thought to be Unfavourable-bad as Sandbanks and biogenic reef will likely be negatively impacted by continued industrial development, fisheries activity and ongoing climate change (see Chapter 5).

The conservation status of Submarine structures could not be assessed in 2019 due to insufficient data on the extent of the feature present in UK waters. Detecting Methane-Derived Authigenic Carbonate remotely presents practical challenges, resulting in limited evidence and uncertainty around the true area of Submarine structures. As a result, assessments of Structure and Function have been based on the known minimum extent protected within Scanner Pockmarks SAC, Braemar Pockmarks SAC and Croker Carbonate Slabs SAC. Most of the extent lies in Croker Carbonate Slabs SAC where this feature is thought to be in good condition. While this SAC was last surveyed in 2015, no changes are expected, and therefore no alterations to the Structure and Function parameters have been assumed. Due to the ongoing lack of data, it is not currently possible to assess the Future Prospects of this feature.

Table 3: Conservation Status of marine benthic habitats in the UK offshore marine area in 2026 compared to the previous assessment in 2019.

Feature	Status | Trend of Offshore Marine Habitats	
	2019 assessment	2026 assessment
Sandbanks Slightly Covered by Seawater at All Times	Not Assessed	Unfavourable-bad | Stable
Reefs	Not Assessed	Unfavourable-bad | Unknown
Submarine structures made by leaking gases	Not Assessed	Unknown | Unknown

3.2 Marine mammals

As marine mammals are highly mobile and cryptic species (e.g. deep diving), monitoring for reporting and assessments needs is challenging. Seals are regularly surveyed at coastal haul-out sites using both land and aerial surveys, but for cetaceans large-scale systematic monitoring on dedicated platforms is resource intensive and happens on an

approximately decadal interval (see Chapter 2 on surveillance). In previous reporting rounds, this has limited the ability to draw conclusions about marine mammal conservation status. However, since the previous assessment in 2019, an additional SCANS survey has provided sufficient information to better assess the conservation status of marine mammals in UK waters. This has led to fewer assessments concluding Unknown and better indication of trends over time. In 2019, only the two resident seal species, Grey Seal and Harbour Seal, concluded anything other than Unknown. For the 2026 reporting, five resident species/ecotypes were assessed as Favourable, two were Unfavourable-inadequate, one was Unfavourable-unknown, and nine were Unknown (Table 4). Assessments of all vagrant marine mammal species remains Unknown as the limited data on them in UK waters hinders assessment of their status. However, any conservation measures implemented that protect resident species should also benefit vagrants using UK waters.

For the 2026 reporting round, coastal populations of Bottlenose Dolphin were assessed separately from the broader UK-wide Bottlenose Dolphin, recognising the ecological differences between the wide-ranging offshore and the inshore coastal ecotypes of Bottlenose Dolphin. This approach aligns with other assessments such as OSPAR (Geelhoed *et al*. 2022), enabling outputs that effectively feed into wider policy decisions. However, it is important to note that the data used in the 'Bottlenose Dolphin (UK)' assessment may also include individuals of this coastal ecotype, as it is not possible to distinguish between offshore and coastal ecotypes during the large-scale surveys used to assess populations (e.g. SCANS). 'Bottlenose Dolphin (coastal UK)' were assessed using dedicated photo-identification monitoring programmes of key coastal populations.

Indicative assessments were also completed at the cetacean management unit (MU) scale for Bottlenose Dolphin and Harbour Porpoise. MUs were agreed for the seven most common cetacean species in UK waters in 2015 by the UK's Inter-Agency Marine Mammal Working Group (IAMMWG) comprising representatives of the UK Statutory Nature Conservation Bodies (SNCBs) and were updated in IAMMWG (2023). These units provide an indication of the spatial scales at which impacts of plans and projects alone, cumulatively and in combination, need to be assessed for the key cetacean species in UK waters. Thus, indicative assessments at this scale will support management and policy needs while also producing outputs at a relevant scale for other reporting obligations. Of these, five were indicated as having Favourable conservation status, two were Unfavourable with stable trends, and three were Unfavourable with Unknown trends.

Table 4: Conservation Status of resident marine mammals in the UK offshore marine area in 2026 compared to the previous assessment in 2019.

Feature	Status | Trend of Marine Mammal Species	
	2019 assessment	2026 assessment
Harbour Porpoise	Unknown	Unfavourable inadequate | Stable
Bottlenose Dolphin (UK)	Unknown	Favourable | Stable
Bottlenose Dolphin (coastal)	Not Assessed	Favourable | Unknown
Common Dolphin	Unknown	Favourable | Stable
Risso's Dolphin	Unknown	Favourable | Stable
Atlantic White-sided Dolphin	Unknown	Unknown | Unknown
White-beaked Dolphin	Unknown	Unknown | Stable
Striped Dolphin	Unknown	Unknown | Unknown

Feature	Status | Trend of Marine Mammal Species	
	2019 assessment	2026 assessment
Minke Whale	Unknown	Unfavourable inadequate | Unknown
Killer Whale	Unknown	Unknown | Unknown
Long-finned Pilot Whale	Unknown	Unknown | Unknown
Fin Whale	Unknown	Unknown | Unknown
Sperm Whale	Unknown	Unknown | Unknown
Humpback Whale	Unknown	Unknown | Unknown
Beaked Whales (grouped)	Assessed as individual species; all Unknown	Unknown | Unknown
Common Seal	Unfavourable inadequate | Unknown	Unfavourable inadequate | Stable
Grey Seal	Favourable | Improving	Favourable | stable

3.3 Marine Reptiles

Since the 2019 Article 17 report, there has been no change in the conservation status of the Leatherback Turtle – the only resident marine reptile species in UK waters (Table 5). Monitoring data for Leatherback Turtles and other marine turtle species in UK waters is very limited and as such, assessments are largely informed by reports to national stranding schemes.

Table 5: Conservation Status of marine reptiles in the UK offshore marine area in 2026 compared to the previous assessment in 2019.

Feature	Status | Trend of Marine Reptile Species	
	2019 assessment	2026 assessment
Leatherback Turtle	Unknown	Unknown

3.4 Marine Birds

The Offshore Regulations place a duty on the competent authority to secure compliance with the Birds Directive, which requires the maintenance of populations of all species of naturally occurring birds in the wild at a level which corresponds to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements. In the UK offshore marine area, it is impossible to accurately estimate the number of seabirds at sea at any one time, let alone determine levels at which they should be present as specified above. Therefore, the status of populations of marine bird species using the UK offshore marine area has been taken from data collected mostly at breeding colonies (see surveillance programmes in Section 2.4).

Under previous Birds Directive Article 12 reporting, there was no requirement to assess the conservation status of the species. Instead, trends in abundance and distribution were reported as ‘increasing’, ‘stable’ or ‘decreasing’. This contrasts with the FCS assessments required under the Habitats Directive Article 17 reporting for habitats, marine mammals and marine reptiles. In the absence of any established guidance for assessing FCS for European protected bird species, the 2019–2024 Offshore Regulations reporting uses two more objective and quantitative assessments of population status of bird species in the

UK: the UK Birds of Conservation Concern (BoCC) and IUCN Red List assessment of birds in Britain (Stanbury *et al.* 2024).

The assessment of UK BoCC uses standardised criteria to allocate species to Red, Amber, or Green lists depending on their level of conservation concern. BoCC criteria include population size, abundance trends, distributional range, changes in distribution, and international importance. The IUCN Red List assessment for birds in Great Britain uses well-established, internationally recognised, and standardised criteria to assess extinction risk. The IUCN criteria include species rarity, range restriction and rate of decline.

Of the 25 species of seabird that regularly breed in the UK, 14 would be deemed to be offshore. The remaining 11 are considered either inshore and/or migratory, therefore would not utilise the UK offshore environment either during the breeding season or winter months. Little Auk are not present during the breeding season but utilise the UK offshore environment during the winter. Therefore, for this assessment, a total of 15 species were included. Breeding and wintering populations were assessed separately; wintering populations were only assessed for Great Black-backed Gull, Herring Gull, Lesser Black-backed Gull, and Little Auk (Table 6a, Table 6b).

A comparison of UK BoCC 4 (Eaton *et al.* 2015) and a combination of BoCC 5 (Stanbury *et al.* 2021) for the wintering population and BoCC 5a (Stanbury *et al.* 2024) for the breeding population and GB IUCN 1 (Stanbury *et al*. 2017) and GB IUCN 2 (Stanbury *et al.* 2024) assessments were undertaken to determine the change in conservation status and extinction risk respectively for each species (Tables 6a and 6b). All species were assessed against a baseline (Burnell *et al.* 2023) from before the outbreak of High Pathogenicity Avian Influenza (HPAI) since 2021. The assessments were then updated for several species to account for known HPAI impacts (Tremlett *et al.* 2024).

Declines in BoCC status from Amber to Red during 2015 and 2024 were seen in three species: Great Black-back Gull, Great Skua and Annex I species Leach's Storm-Petrel. Great Skua was severely affected by outbreaks of HPAI in 2021 and 2022. Apart from declines in these three species, the BoCC status of offshore seabirds did not change between assessments. Eight of the sixteen populations (50%) for which BoCC assessments could be made were assessed as Red, with seven (44%) now assessed as Amber. Only one species - Little Auk, which occurs in UK waters only during winter and on migration – was assessed as Green.

As regards extinction risk, as assessed by IUCN Red List, there were more declines in status between the two assessments than there were in BoCC status, with seven populations (44%) declining. Most notably, Atlantic Puffin, Fulmar, Great Black-backed Gull (breeding population), and Leach's Storm-Petrel each declined by a dramatic four categories (from Least Concern to Critically Endangered). As regards Fulmar, it is of note that BoCC status remained at Amber, in contrast to the dramatically declining status under the UK's regional IUCN Red List. This is largely due to the BoCC assessment being retrospective, whereas the IUCN Red List projects current trends into the future (by three generations) and hence assessed the species as Critically Endangered. Three species – Common Guillemot, Great Skua and Razorbill – declined by two categories (from Least Concern to Vulnerable). Six populations' statuses did not change, one of which (Arctic Skua) remained as Critically Endangered and two (Herring Gull winter population and Great Black-backed Gull winter population) as Endangered and three (European Storm-Petrel, Manx Shearwater and Northern Gannet) as Least Concern. Twelve of the sixteen populations (75%) for which Red List assessments could be made were assessed as Red (i.e. Threatened), and four species were assessed as Least Concern.

To conclude, with the exception of Annex I species – European Storm-Petrel, Manx Shearwater, Northern Gannet and Little Auk (wintering population only) – all other species using the UK offshore marine area are not being maintained at the required levels and 12 populations (10 species) are threatened with extinction from the UK.

Table 6a: Conservation status of breeding marine birds as assessed by Birds of Conservation Concern (BoCC) and IUCN GB Red List. For Red list Threatened categories (Vulnerable, Endangered, Critically Endangered) are shaded red, with Least Concern shaded in green. Change in status and extinction risk between successive assessments is given as the number of categories, where 0 = no change, positive values denote improvement and negative values denote a decline in BoCC status or an increase in extinction risk.

Common name of Breeding Birds	BoCC 5a UK status	BoCC Status Change since BoCC4 UK	IUCN GB2 Extinction Risk	Extinction Risk Change since GB1
Atlantic Puffin	R	0	CR	-4
Black-legged Kittiwake	R	0	EN	1
Common Guillemot	A	0	VU	-2
European Storm-Petrel [Note 1]	A	0	LC	0
Fulmar	A	0	CR	-4
Great Black-backed Gull	R	-1	CR	-4
Great Skua	R	-1	VU	-2
Herring Gull	R	0	EN	NA [Note 2]
Leach's Storm-Petrel [Note 1]	R	-1	CR	-4
Lesser Black-backed Gull	A	0	LC	NA [Note 2]
Manx Shearwater	A	0	LC	0
Northern Gannet	A	0	LC	0
Arctic Skua	R	0	CR	0
Razorbill	A	0	VU	-2

Note 1: Species was listed in Annex I of the Birds Directive at the point of EU Exit.

Note 2: No assessment possible (was Data Deficient in first assessment).

Table 6b: Conservation status of wintering marine birds as assessed by Birds of Conservation Concern (BoCC) and IUCN GB Red List. For Red list Threatened categories (Vulnerable, Endangered, Critically Endangered) are shaded red, with Least Concern shaded in green. Change in status and extinction risk between successive assessments is given as the number of categories, where 0 = no change, positive values denote improvement and negative values denote a decline in BoCC status or an increase in extinction risk.

Common name of Wintering Birds	BoCC5 UK status	BoCC Status Change since BoCC4 UK	IUCN GB2 Extinction Risk	Extinction Risk Change since GB1
Great Black-backed Gull	NA	NA	EN	0
Herring Gull	R	0	EN	0
Lesser Black-backed Gull	NA	NA	NA	NA
Little Auk	G	0	Data Deficient	NA

4. Offshore marine protected areas network

An MPA is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. In combination, MPAs are intended to form an 'ecologically coherent and well-managed network' as a contribution to the effective conservation and sustainable use of the UK's marine environment.

Offshore MPAs in the UK include SACs designated for Annex II marine species and Annex I habitats, and SPAs designated for birds and their habitats. These form the UK's National Site Network together with inshore and terrestrial SACs and SPAs. In the marine environment, SACs and SPAs, alongside Marine Conservation Zones (MCZs), Nature Conservation Marine Protected Areas in Scotland, Sites / Areas of Special Scientific Interest and Ramsar Sites form the UK's MPA network. Since 2019, there have been three new HPMAs designated in England (formally designated in 2023), two of which are located offshore. Offshore, the UK's MPA network makes up 36% of the UK's offshore marine area (including MPAs designated for both species and habitats). Table 7 provides an overview of the SACs and SPAs in offshore waters, including the areas of jointly managed sites which fall offshore.

Table 7: Area and percentage cover of SACs and SPAs in the UK offshore marine area for marine habitats, marine species, and offshore UK waters. There is overlap between marine habitat and species SACs, therefore the combined UK offshore total is not equivalent to the summation of marine habitats and species SACs.

Designation	Number of SACs / SPAs	SAC / SPA area in UK offshore marine area (km²)	Percentage of the UK offshore marine area covered by SACs / SPAs
Marine habitats SACs	20	49,521	6.86%
Marine mammal SACs	5	37,939	5.25%
UK Offshore SAC Total	25	77,646	10.75%
Marine Bird SPAs	8	6,406	0.01%

4.1 Special Areas of Conservation (SACs)

Each SAC was identified and designated to protect important conservation sites that would make a significant contribution to conserving the habitats and species identified in Annexes I and II of the of the Habitats Directive. SACs with 'marine components' protect the Annex I habitats and Annex II species associated with the marine environment. Offshore, SACs are identified and designated under UK law through the Offshore Regulations 7–11.

There are currently 116 SACs with marine components covering a total of 14% of the inshore and offshore UK marine area. The SACs that cross the 12 nautical mile border, denoting the transition to offshore waters, are jointly advised upon by JNCC and the respective inshore SNCB. The full list of MPAs within UK waters can be explored using the JNCC MPA Mapper with site-specific detail provided on the relevant Site Information Centres (SICs). All MPAs designated for offshore Annex I habitats are now formally recognised as SACs.

4.2 Special Protection Areas (SPAs)

In the UK, SPAs were first identified and classified on land in the early to mid-1980s. SPAs with marine components have been more recently established. While there are already many SPAs in inshore waters, including, for example, some seabird colony SPAs with seaward extensions, only a few stretch into the UK offshore marine area beyond the territorial sea limit (see the list of SPAs with marine components).

The SPAs have been selected using a two-stage process (see SPA selection guidelines in JNCC 2001). Stage 1 identifies areas that hold substantial aggregations of a species or multiple species (e.g. for seabirds), with greater significance given to species listed in Annex I of the EC Birds Directive. SPA selection Stage 1 identifies an area that is used regularly by: 1% or more of the Great Britain (or in Northern Ireland, the all-Ireland) population of a species listed in Annex I of the Birds Directive (79/409/EEC as amended) in any season; and/or 1% or more of the biogeographical population of a regularly occurring migratory species (other than those listed in Annex I) in any season; and/or over 20,000 waterfowl (waterfowl as defined by the Ramsar Convention) or 20,000 seabirds in any season. Stage 2 allows further consideration of sites where a species' population status, ecology or movement patterns may mean that an adequate number of areas cannot be identified during Stage 1. Furthermore, priority is given to those areas which contribute significantly to the species population viability locally and as a whole. The protection of the populations in SPAs is considered alongside, and is complemented by, other non-site-based special measures designed to maintain populations.

In the UK, there are currently 125 SPAs with marine components in the inshore and offshore UK marine areas, compared to 112 in 2019 (see the list of SPAs with marine components). The 13 new marine SPAs include three with an offshore component that were designated in 2021 in Scottish inshore/offshore waters (Outer Firth of Forth and St Andrews Bay Complex, Seas off Foula, Seas off St Kilda). These three SPAs, along with an existing inshore/offshore SPA in Wales are situated in waters close to large breeding colonies of seabirds and are designated for mainly offshore species of seabird listed in Table . Two of the new Scottish inshore/offshore SPAs include the Annex I species European Storm-Petrel as a designated feature. There are no offshore SPAs designated for the other offshore Annex I species – Leach's Storm-Petrel. However, Leach's Storm-Petrels, when breeding at colonies in the UK, feed over deep water at or beyond the edge of the continental shelf (Bolton & Deakin 2023) and can cover more than 1000 kilometres in a single trip (Pollet *et al.* 2021). Therefore, identifying important and distinct areas offshore for this species has proved challenging. However, the majority of the colonies of both Storm-Petrel species in the UK are designated as SPAs, including over 95% of the UK breeding populations (Bolton & Deakin 2023; Hughes & Perkins 2023).

There is only one SPA – Irish Sea Front SPA – which is entirely offshore (completely beyond 12 nautical miles) and managed solely by JNCC. The Irish Sea Front SPA is an area between the coast of Wales and Ireland, designated in 2017 to protect aggregations of Manx Shearwater that feed there.

There are three other SPAs that have an inshore and offshore element (see Appendix 2). The remaining three inshore/offshore SPAs cover mostly shallower inshore waters around large estuaries and are designated mainly for inshore-feeding seabirds (e.g. terns) and waterbirds (e.g. seaduck, grebes and divers).

Together, the eight SPAs, described above, cover 0.01% of the UK's offshore marine area. There has not yet been a review of the sufficiency of marine SPAs. However, during the next reporting period, SPAs are included in the Defra English MPA Review. This will aim to identify hot spots of activity for marine birds across English seas, review the

protection measures and compare this with the extent of English SPAs and the protection they confer.

5. Pressures affecting the offshore marine environment

This chapter summarises information contained in the Feature Reports on the main pressures in the UK offshore marine area that are impacting marine habitats, mammals, reptiles and birds. In the Feature Reports, pressure impacts on each feature were ranked as Low, Medium or High. For offshore marine habitats, this was based on their degree of spatial overlap with the mapped extent and sensitivity of each habitat and drawing on expert knowledge where required. For marine mammals, reptiles and birds, pressures were scored based on expert judgement of the evidence for pressure impacts presented in the sections below.

The main pressures impacting on each offshore feature (i.e. those scoring high or medium on at least one feature) are listed in Tables 8–10. The evidence for impacts of these main pressures is provided in the sections below. Not all these pressures affect all features due to their distinct ecological characteristics. For example, benthic habitats are static and primarily affected by physical disturbances such as bottom-contact fishing and infrastructure development, whereas marine mammals are highly mobile and more vulnerable to pressures like underwater noise, fisheries bycatch, and chemical pollutants. Marine mammals (particularly cetaceans) are highly migratory, as are marine turtles and marine birds. These migratory species face threats both within and beyond UK waters, including fisheries bycatch, marine litter, and climate change.

The birds occurring in the UK offshore marine area are also impacted by pressures operating on or near their colonies on land and in inshore feeding areas. At colonies, breeding birds are under pressure from invasive non-indigenous mammalian predators (e.g. brown rats), disturbance from recreation and from habitat loss due to land reclamation. Evidence of these pressures at seabird colonies and inshore are addressed in the country reports on birds.

Seals occurring in the UK offshore marine area, particularly Grey Seal, also breed and haul-out on land and feed in inshore areas. On land and inshore, seals face pressure from disturbance (e.g. tourism or coastal development) and habitat loss due to land reclamation. Evidence of these pressures at seal colonies, haul-out sites and inshore are addressed in the country reports on seals.

5.1 Fisheries disturbance to the seabed

Bottom-contact fishing gear can cause damage to the seabed through abrasion. This results in the disturbance of the surface of the sea floor and the upper layers of sediment, where many species are present. Subsequently, there may be disturbance or loss of species from interactions of the sea floor with this gear type. This physical pressure can result in potentially reversible change or cause permanent damage depending on the nature, regularity and duration of the pressure and the sensitivity of the feature. Whether a feature recovers quickly or takes years is also influenced by the severity and frequency of the pressure. Sessile species especially, such as those present on Reefs, cannot move and therefore suffer damage or mortality (OSPAR 2023a). Marine fish and shellfish harvesting can have an additional impact on reef habitats by removing and reducing the abundance of key structural and influential species that make up biogenic reef. Key species may also be removed from Sandbanks and Submarine structures, but these are not well defined, and it is currently unclear how their removal would impact the functioning of the physical habitat itself. The OSPAR common indicator Extent of Physical Disturbance to Benthic Habitats, which assesses levels of fishing pressure and is used as a proxy for condition, suggests that large areas of all offshore marine habitats are highly

disturbed resulting from widespread use of mobile bottom-contact fishing gear (Matear *et al*. 2023; UKMS 2025). Therefore, this remains a highly ranked pressure on all offshore habitats.

Physical disturbance and degradation to seabed habitats will also have knock-on impacts on the prey of marine mammals and seabirds feeding in the water column above. The reduction or removal of benthic fauna (including demersal fish) that serve as prey has been shown to have direct consequences for feeding and reproduction of seabirds (Cook & Burton 2010; Christensen-Dalsgaard *et al.* 2020).

5.2 Fisheries bycatch

Marine mammals, marine turtles, and seabirds are accidentally caught, entangled and killed in fishing gear. This bycatch occurs in commercial, recreational and artisan fisheries and is a threat to populations of these marine animals around the globe (Diaz *et al*. 2019; Avila *et al.* 2018; Taylor *et al.* 2022). In the UK, bycatch of marine mammal species has been noted in several gear types, including midwater trawl nets, pelagic trawl fisheries, bottom set net fisheries, creels, and pots, with annual removals of species exceeding safe limits for several species (e.g. Ross 2003; Northridge *et al.* 2016; Kingston *et al.* 2021; Stylos *et al.* 2022; Taylor *et al.* 2022; Leaper *et al.* 2022). From an offshore perspective, trawling fisheries are likely the most significant threat in deeper water, with bottom set nets also a threat in some shallower areas. Secondary bycatch caused by entanglement in fishing gear and floating offshore wind developments may pose an additional risk.

Seabird bycatch occurs in UK waters (Northridge *et al.* 2020) and elsewhere in the northeast Atlantic (Oliveira *et al.* 2015; Christensen-Dalsgaard *et al.* 2019; Dierschke 2022). This can happen when birds are foraging for fish caught in trawls or purse seines or used for bait on longline hooks, or if they enter fixed nets when diving below the sea surface. Gillnets and/or hook gears (hand- and longlines) are reported to be the deadliest fishing gears for marine birds (Pott & Wiedenfeld 2017; ICES 2013). Most recorded gillnet bycatch relates to species that undertake plunge or pursuit diving, such as auks and shearwaters (Žydelis *et al.* 2013; Pott & Wiedenfeld 2017). Mortality due to incidental bycatch in longlines mainly occurs in birds that are feeding at the surface - species such as shearwaters, Northern Fulmar, Northern Gannet and gulls (Anderson *et al.* 2011; Dunn & Steel 2001).

5.3 Other fisheries impacts

The extraction of fish can reduce the prey available to marine birds and marine mammals through competition for the same species (e.g. Lesser Sandeel, Sprat, and small Herring) (Cury *et al.* 2011).

In seabirds, a reduction in available prey can lead to immediate reductions in fitness, which can affect survival and reduce the numbers attempting to breed. If food is scarce during the chick-rearing period, breeding success can also be reduced or whole colonies may fail to produce any young (Camphuysen *et al.* 2002; Frederiksen *et al.* 2008, 2013; Cury *et al.* 2011; Cook *et al.* 2014; Mitchell *et al.* 2020; Carroll *et al.* 2017; Fayet *et al.* 2021).

5.4 Aggregate extraction

The majority of commercial aggregate extraction in the UK offshore marine area is related to the extraction of sand and gravel. This is largely restricted to English waters such as in the Eastern English Channel and notably the North Sea. While overall disturbance to

benthic habitats is very limited in extent, high-intensity pressure is localised to discrete licenced areas making it a medium pressure for offshore Sandbanks. Aggregate extraction may lead to morphological changes to the seabed. While this may not result in permanent loss of the habitat, certain species and biogenic structures such as *Sabellaria* reef are susceptible to damage (OSPAR 2023b).

5.5 Renewable energy development

There has been an increase in the development of offshore windfarms in UK waters since 2010. Areas have been leased for development in the Southern North Sea, Northern North Sea, English Channel and Irish Sea. Some projects that were in the planning stage in 2019 have now been constructed. The UK Government is committed to delivering clean power by 2030, and OFW development is a key part of this as outlined in the Clean Power 2030 Action Plan.

Physical disturbance and loss of benthic habitats can occur during construction and installation of infrastructure including wind turbines, substations and cable laying. The scale of impacts from the operation, maintenance and decommissioning of OFW projects is currently unknown, though it is expected similar pressures will be exerted on the sea floor.

While OFW development has largely avoided Reefs and Submarine structures, much of the development has occurred over Sandbanks and it is currently ranked as a medium pressure in Table 8. It is expected that there will likely be further interactions between OFW and Sandbanks, as well as Reefs in the future. Pressure from OFW and associated infrastructure such as export cables on Sandbanks is predicted to increase as further areas have been leased for development, including a large area of Dogger Bank SAC (Crown Estate 2025).

For marine mammals, noise from pile driving and vessel traffic during the development of renewable energy infrastructure is a known cause of disturbance (Graham *et al.* 2017, 2023; Brandt *et al.* 2018; Benhemma-Le Gall *et al.* 2021; Fernandez-Betelu *et al.* 2021; Skeate *et al.* 2012; Whyte *et al.* 2020). More information on the impacts of underwater anthropogenic sound on marine mammals can be found in Section 5.7. However, there is also potential for collision risk with submerged installations such as tidal turbines or exclusion from habitat due to physical or perceived barriers (Malinka *et al.* 2018; Band *et al.* 2016; Hastie *et al.* 2018).

OFW can also have impacts on marine birds. Collisions with offshore wind farm turbines and vessels can cause mortality (Busch & Garthe 2018; García-Barón *et al.* 2019; Kelsey *et al.* 2018; King 2019; Potiek *et al.* 2019; Searle *et al.* 2019). The risk of collision is a function of birds' flight height in relation to an obstacle and their ability to avoid it. Offshore wind turbines are now the most significant obstacles in UK waters. The flight height of some seabirds, particularly large gulls, kittiwake, gannet, cormorant and shag, is such that they could potentially collide with turbines (Furness *et al.* 2013; Johnston *et al.* 2014; Mendel *et al.* 2014; Johnston & Cook 2016).

Offshore wind farms, and their associated vessel traffic, can displace birds from foraging areas or other important areas, leading to (temporary) habitat loss, higher energy expenditure (flights for food, migration distances), with consequences for survival and reproduction, including carry-over effects from the non-breeding season into the breeding season (Mendel *et al.* 2019; Peschko *et al.* 2020).

5.6 Offshore industries including rock dumping

Continued development of oil and gas fields, carbon dioxide transport and storage infrastructure, and cabling activities in the UK offshore marine area is impacting benthic habitats, including those in MPAs. One of the main impacts comes from the introduction of hard substrata to the seabed via protective materials such as 'rock dump'. For Annex I Sandbanks, rock dump results in a permanent physical change from one seabed type to another (JNCC 2022). While introduced hard substrata has potential to act as artificial reef, its introduction may damage existing biogenic reefs and in the long-term result in localised changes to the communities associated with Annex I Sandbanks (Pidduck *et al.* 2017; JNCC 2022). Repeated rock dumping over many years can therefore have a significant cumulative impact, despite only affecting a small area each time it happens (Pidduck *et al.* 2017).

Offshore industry projects can have a large impact locally, especially as new projects are developed. These activities may affect the extent, distribution and structure and function of the benthic features of offshore MPAs, including Annex I habitats, and move these sites further away from achieving their conservation objectives. Impacts from other offshore industries on Annex I habitats are considered low in Table 8 because of the limited spatial overlap between the offshore activities and the full known extent of Annex I habitats. However, this assessment does not take into account the full cumulative impacts on structure and function or the temporal impact.

Offshore industries can cause disturbance to marine birds through visual stimuli and above-water noise. Disorientation caused by the introduction of artificial light can increase the likelihood of collision with vessels and offshore structures such as oil and gas platforms (Merkel & Johansen 2011).

Disturbance to marine birds in the UK offshore marine area is mainly caused by shipping, in addition to OFW (see above). Shipping can displace birds from foraging areas or other important areas, leading to (temporary) habitat loss and higher energy expenditure (Burger *et al.* 2019; Fliessbach *et al.* 2019).

5.7 Anthropogenic sound

Marine mammals rely on sound for navigation, foraging, and communication and thus, continuous (e.g. vessel noise) and impulsive (e.g. pile driving, seismic surveys, UXO clearances) anthropogenic noise in the marine environment is another primary concern, with potential to cause disturbance, masking, injury or fatality (e.g. Stone *et al.* 2017; Trigg *et al.* 2020; David *et al.* 2021; Hin *et al.* 2021, 2023; Boisseau *et al.* 2021; Reverberi 2023; Freyer *et al.* 2024). While individual events may cause short-term displacement with animals returning to the area relatively quickly (e.g. Thompson *et al.* 2013; Graham *et al.* 2019; Vallejo *et al.* 2017), habitat loss due to repeated disturbance can induce stress and impact upon foraging and breeding success. Thus, with appropriate mitigation measures, the pressures of individual activities may be low, but the cumulative impacts may pose a significant risk.

5.8 Marine pollution and litter

The impact of chemical contaminants in marine mammals is well documented; exposure can impair reproductive and immune system function, cause organ failure, and contribute to population declines (e.g. Jepson *et al.* 2016; Megson *et al.* 2022; Minoia *et al.* 2023; Williams *et al.* 2023). The impact of chemical pollutants is often long-term and intergenerational.

Oil spilled from oil and gas activities and from ships can contaminate and adhere to the plumage of marine birds, causing its insulating effect to be lost. This, and the ingestion of oil during grooming, can lead to the death of affected birds (Jenssen 1994). The impacts of oil depend upon the timing and location of spills. Severe impacts are more likely when spills occur around breeding colonies, when birds are highly concentrated. The risk from oil spills to marine birds in the UK offshore marine area is considered low (Table 10).

Litter introduced from land and via rivers (e.g. industrial sources, tourism) and directly into the marine environment (e.g. from shipping, fishing, aquaculture) can potentially impact all marine species, causing health problems or killing them.

Surface-feeding seabirds such as Northern Fulmars ingest plastics that they mistake for food, and these accumulate in their stomachs (Kühn *et al.* 2022). Plastic ingestion can lead to the accumulation of endocrine-disrupting compounds in body tissues (Wang *et al.* 2021) and reduce the space for food in the digestive tract of seabirds, but little is known about the effects on populations.

Marine turtles can also accidentally ingest floating plastics including larger items, such as plastic bags, which they mistake for large jellyfish. If ingested, these plastics may cause ulcers and blockages of the digestive tract, which may be fatal (e.g. Baudouin & Claro 2020; Reyes-Lopez *et al.* 2021).

Marine Mammals, turtles and Marine birds can become entangled in litter (e.g. discarded fishing gear), often leading to injury or death. Entanglement in litter is the only known cause of human-induced mortality of turtles stranded on the coast of Scotland, though records are rare (Penrose & Westfield 2023). Some seabirds, such as Northern Gannets, may collect litter at sea and use it as nest material. Litter in nests can ensnare adults and young and lead to reduced reproductive rates (O'Hanlon *et al.* 2019).

5.9 Climate Change

Direct impacts of climate change on offshore marine habitats are difficult to quantify, but impacts will be widespread across the UK. Climate change pressures were therefore given a medium ranking for marine habitats (Table 8, OSPAR 2023a). Some impacts of climate change are evident, causing changes in the distribution of some benthic invertebrates (Moore & Smale 2020). For example, Hiddink *et al*. (2015) provides evidence that increases in temperature coincided with a north-westerly range shift of benthic invertebrates into deeper waters in the North Sea as the warmer water changes the area within the range of temperatures in which they can survive. In addition, increases in the distribution of warm-water affinity species and decreases in the distribution of cold-water affinity species have been observed in the UK (Moore & Smale 2020).

Models suggest further northward or southward range shifts in the future are possible, depending on the species and location (More & Smale 2020). Large knowledge gaps on how climate change will impact habitat quality remain. Some climatic models suggest there may be alterations to ecosystem functioning and trophodynamics of the North Sea. Other models suggest ecosystem-level responses could remain stable over long periods of time (Moore & Smale 2020). Ocean acidification is continuing and changes to benthic communities in the next three decades are expected, posing a more serious threat to marine species with calcium carbonate shells and skeletons such as those that make up biogenic reefs (OSPAR 2023a; Hoppit & Schmidt 2022).

For marine mammals, the evidence suggests that climate change may result in geographic range shifts, reduction in suitable habitats (particularly for seal species), food

web alterations and increased prevalence of disease (e.g. Thorne & Nye 2021; Williamson *et al.* 2021; Plint *et al.* 2023; Martin *et al.* 2023; Snell *et al.* 2023).

Evidence for the effects of climate change on marine turtles point to the following impacts:

- Changes in distribution as the availability and distribution of prey also shift with climate change (e.g. Botterell *et al*. 2020).
- Shifts in migration and movement patterns with changing ocean currents (e.g. Mashkour *et al.* 2020).
- Impacts to reproduction, including influences on sex ratio, changing timing of nesting and nesting habitat loss, due to increasing temperatures, sea level rise, heavier precipitation and increased storms (e.g. Mashkour *et al.* 2020; Reyes-Lopez *et al.* 2021; Laloe & Hays 2023).
- Increased risk of exposure to harmful algal blooms due to changes in ocean currents, heavier precipitation and rising sea surface temperatures (e.g. Reyes-Lopez *et al.* 2021).

Dias *et al*. (2019), in a major global review of threats to seabirds, identified climate change in the top three most important threats. In UK waters and the wider northeastern Atlantic climate change has been identified as the main driver of change in marine birds, (e.g. Pearce-Higgins *et al.* 2021; Mitchell *et al.* 2020; OSPAR 2023d).

The main mechanism for climate-change impacts on seabirds is change to their food supply and/or availability. There is also growing evidence that severe weather events can play an important role, washing away nests, reducing breeding success, and lowering survival rates of adults by impeding foraging at sea (Clairbaux *et al.* 2021; Reiertsen *et al.* 2021). Some of the best evidence of climate-induced changes to demographic rates of seabirds comes from the Black-legged Kittiwake. Studies show temperature-related deleterious impacts on over-winter survival and breeding success (Frederiksen *et al.* 2004, 2005, 2007; Frederiksen 2014). These patterns are likely to be mediated by the abundance and quality of sandeels, a key prey item of Kittiwakes and other seabirds (Daunt *et al.* 2008; Eerkes-Medrano *et al.* 2017), which is in turn influenced by climate-induced changes in plankton abundance, distribution and timing (Wanless *et al.* 2018). More recent evidence suggests that other seabird species' food supply is also affected by climate-change impacts (Howells *et al.* 2018; Wanless *et al.* 2018; Harris *et al.* 2022). As well as climate-mediated changes in the abundance of seabird prey, there have also been mismatches between the timing of the occurrence of seabird prey and periods of peak energy demand (e.g. chick-rearing) (Burthe *et al.* 2012).

Modelling by Russel *et al.* (2015) indicates that 65% of seabird species will show a decline in their European range by the end of the century as a response to changing environmental conditions. Under the best-case scenario, by the end of this century, Leach's Storm-Petrel, Great Skua and Arctic Skua are all predicted to be either extinct or close to extinction in the British Isles. In addition, the size range of Black-legged Kittiwake, Arctic tern and auks are expected to be considerably restricted (Russell *et al.* 2015).

5.10 High Pathogenicity Avian Influenza (HPAI)

The pressures on marine birds outlined above should also be viewed in the context of recent large-scale mortality in some species caused by HPAI. Transmission of HPAI is more likely to occur while seabirds are at their breeding colonies than while they are at sea. Between 2021–2023 seabirds in the UK – along with those in many other countries – were impacted by the H5N1 strain of the virus; this represented a significant change in the

development of the virus, because before this time seabirds had been largely unaffected. To date, 21 of the 25 regularly breeding seabird species in the UK have tested positive for the virus (APHA 2024). Highest mortalities occurred in Northern Gannets, of which at least 16,000 birds died in the UK. But the greatest impact on population size was of Great Skua, which mostly breed in Scotland, where 2,500 deaths were reported in 2022 (Harris *et al.* 2024). Tremlett *et al.* (2024) estimated that by 2023, the UK breeding population of Great Skua had fallen by 73% compared to immediately before the HPAI outbreak. The UK population of Great Skuas was censused during 2015–2021 (Burnell *et al*. (2023). Large numbers of gulls, terns and auks also died during the HPAI outbreak.

Table 8: Summary of the main High (H), Medium (M) and Low (L) ranked ongoing or future pressures impacting benthic habitats. These pressures are derived from the Feature Reports based on categories used within Habitats Regulations reporting. Pressure rankings were ascertained based on sensitivity of feature and area affected (see Feature Reports for more information). N/A denotes that a pressure was not applicable to the feature.

Category	Pressure	Marine Habitat		
		Sandbanks	Reefs	Submarine structures
Fisheries	PG01: Marine fish and shellfish harvesting causing reduction of species/prey populations and disturbance of species (professional)	N/A	H	N/A
	PG03: Marine fish and shellfish harvesting activities causing physical loss and disturbance of seafloor habitats	H	H	H
Aggregate Extraction	PC01: Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell)	M	L	N/A
Renewable Energy Development	PD01: Wind, wave and tidal power (including infrastructure)	M	L	N/A
Climate Change (Ongoing)	PJ01: Temperature changes and extremes due to climate change	M	M	M
	PJ13: Change of species distribution (natural newcomers) due to climate	M	M	M
Climate Change (In future only)	PJ10: Change of habitat location, size, and/or quality due to climate change	M	M	M
	PJ11: Desynchronisation of biological / ecological processes due to climate change	M	M	M
	PJ12: Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change	M	M	M
Rock Dumping	PC06: Dumping/depositing of inert and dredged materials from terrestrial and marine extraction	H	M	N/A

Category	Pressure	Marine Habitat		
		Sandbanks	Reefs	Submarine structures
Additional offshore industries	Various pressures related to oil and gas, offshore carbon dioxide storage and cabling activities [Note]	L	L	N/A

Note: These activities and associated pressures are occurring within Annex I habitats, however due to the localised impact and limitations in the method as an assessment based on overlap of spatial area, these pressures have been ranked low.

Table 9: Summary of the main High (H), Medium (M) and Low (L) ranked pressures identified for resident marine mammal species in UK waters (see Feature Reports for more information) * denotes that the pressure is likely regional. M or H pressure rankings are derived from the Feature Reports and are based on the results of a literature review and expert judgement. L rankings were not included in Feature Reports but have been added for the Implementation Report, informed by the outcomes of the literature review and expert opinion of potential impacts on species from these pressures despite them not currently or predicted to have a significant direct or indirect impact on the species.

Category	Pressure	Species															
		Harbour Porpoise	Bottlenose Dolphin	Common Dolphin	Atlantic White-sided Dolphin	White-beaked Dolphin	Risso's Dolphin	Striped Dolphin	Minke Whale	Killer Whale	Humpback Whale	Sperm Whale	Long-finned Pilot Whale	Fin Whale	Beaked Whales spp.	Grey Seal	Common Seal
Bycatch	PG13: Bycatch and incidental killing (due to fishing and hunting activities)	H	M	H	M	M	M	M	M	M	M	M	L	L	M	M	L
Marine noise	PF12: Residential, commercial and industrial activities and structures generating noise, light, heat or other forms of pollution	M	M	M	M	M	M	M	M	M	L	L	M	L	M	L	M
	PC07 Geotechnical surveying	H*	M*	M	M	M	M	L	M	M	M	M	M	M	M	L	L
	PE02 Shipping lanes and ferry lanes transport operations.	L	M	L	L	L	L	L	M	L	M	L	L	M	M	L	L
	PE08 Land, water and air transport activities generating noise pollution	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	PH02 Military, paramilitary or police exercises and operations in the marine environment.	M*	M*	L	L	L	L	L	L	L	L	M	L	L	H	L	L

Category	Pressure	Species															
		Harbour Porpoise	Bottlenose Dolphin	Common Dolphin	Atlantic White-sided Dolphin	White-beaked Dolphin	Risso's Dolphin	Striped Dolphin	Minke Whale	Killer Whale	Humpback Whale	Sperm Whale	Long-finned Pilot Whale	Fin Whale	Beaked Whales spp.	Grey Seal	Common Seal
Chemical pollutants	PK02: Mixed source marine water pollution (marine and coastal)	H	M	M	M	M	M	M	L	H	L	L	M	L	M	L	L
Climate change	PJ12: Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change	M	M	M	L	M	H	M	M	M	M	M	H	L	L	M	M
	PJ13: Change of species distribution (natural newcomers) due to climate change	L	L	L	M	M	L	L	L	L	L	L	M	M	L	L	L
	PJ04: Sea-level rise due to climate change	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	M
	PJ07: Cyclones, storms or tornados due to climate change	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	M

Table 10: Summary of the main High (H), Medium (M) and Low (L) ranked pressures identified for marine bird species in the UK offshore marine area. (B) denotes breeding season occurrence; (W) denotes winter occurrence; (P) denotes passage occurrence. (see Feature Reports for more information). Marine birds experience pressures both at sea and on land, this table only lists those pertaining to the offshore environment.

Category	Pressure	Atlantic Puffin	Black-legged Kittiwake	Common Guillemot	European Storm-Petrel	Fulmar	Great Black-backed Gull	Great Skua	Herring Gull	Leach' s Storm-Petrel	Lesser Black-backed Gull	Little Auk	Manx Shearwater	Northern Gannet	Parasitic Jaeger (=Arctic Skua)	Razorbill
Energy production	PD01: Wind, wave and tidal power (including infrastructure)	M (B+W)	M (B) H (W)	M (B)	L	L	M (B+W)	M (P)	M (B)	L	M (B+W)	L (W)	L	H (B) M (W)	L	M (B+W)
	PD05: Development and operation of energy production plants (including infrastructure)	L	L	L	M (B)	L	L	L	L	L	L	L (W)	L	L	L	L
Litter	PF10: Residential, commercial and industrial activities and structures generating marine pollution	L	L	L	L	L	L	L	L	L	L	L (W)	M (W)	L	L	L
Fisheries	PG01: Marine fish and shellfish harvesting causing reduction of species/prey populations and disturbance of species (professional)	H (B) M (W)	H (B)	M (W)	L	M (B)	L	L	L	L	L	L (W)	L	L	L	M (B+W)
	PG13: Bycatch and incidental killing (due to fishing and hunting activities)	M (W)	L	M (B)	L	H (B+W)	M (B+W)	M (P)	L	L	M (B+W)	L (W)	L	M (B+W)	L	M (W)

Category	Pressure	Atlantic Puffin	Black-legged Kittiwake	Common Guillemot	European Storm-Petrel	Fulmar	Great Black-backed Gull	Great Skua	Herring Gull	Leach' s Storm-Petrel	Lesser Black-backed Gull	Little Auk	Manx Shearwater	Northern Gannet	Parasitic Jaeger (=Arctic Skua)	Razorbill
Disturbance	PH08: Other human intrusions and disturbance not mentioned above	L	L	L	L	L	L	L	M (B)	L	M (B)	L (W)	L	L	L	L
Climate change	PJ01: Temperature changes and extremes due to climate change	M (B)	H (B+ W)	M (B)	L	M (B)	H (B)	L	H (B)	M (B)	H (B)	L (W)	L	L	H (B)	L
	PJ11: Desynchronisation of biological / ecological processes due to climate change	L	L	M (B)	L	L	L	L	L	L	L	L (W)	L	L	L	L
	PJ12: Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change	L	L	M (B)	L	L	L	L	L	L	L	L (W)	L	L	H (B)	L
Geological events, natural processes and catastrophes	PM07: Natural processes without direct or indirect influence from human activities or climate change	M (W)	L	M (W)	H (B)	L	L	L	M (B)	H (B)	L	L (W)	H (B)	L	H (B)	M (W)

6. Measures taken

Regulation 6A of the Offshore Regulations requires reporting to include a description of measures taken and an evaluation of their efficacy during the reporting period 2019–2024; specifically:

- "The implementation of the measures for the conservation of" Annex I habitats and Annex II species.

In particular, the report must include:

- “Conservation measures taken under Article 6(1) of the Habitats Directive” (i.e. on listed habitats and species within SACs).
- “Provisions mentioned in Article 12 of the new Wild Birds Directive” - measures taken to ‘maintain bird populations’ and to preserve, maintain or reestablish’ their habitats.
- “An evaluation of the impact of those conservation measures on the conservation status of “Annex I habitats and Annex II species.

Noting the specific requirements of reporting under regulation 6A, this chapter has been broadened to describe all measures implemented under the Offshore Regulations and through other instruments, which are intended to reduce pressures in the UK offshore marine area (as described in Chapter 5) and maintain or improve the status of offshore marine species (mammals, reptiles and birds) and habitats.

Since 2019, new measures have been implemented. Details of these and other notable achievements in the implementation of Offshore Regulations in the UK offshore marine area are summarised below.

Section 6.1 introduces the legal/policy drivers that provide the framework for the measures being implemented. These measures are described in detail in subsequent sections. It starts with a description of regional management plans and SICs (Section 6.2), which contain site-specific information on management for all the UK’s Offshore MPAs described in Chapter 4 above. The management effectiveness of MPAs is assessed using the Management Effectiveness of Protected and Conserved Areas (MEPCA) indicator (Section 6.3). Over-arching measures are then described in Section 6.4, which focuses on regulation of offshore industries, including fisheries, and contribute to the conservation of all offshore habitats, marine mammals, marine reptiles and marine birds. Compensatory measures and derogations are also discussed here. Measures specifically aimed at habitats and each of these species’ groups are then detailed in subsequent sections (6.5 to 6.8).

6.1 Legislative and policy instruments for offshore marine protection

In addition to these Offshore Regulations, there are a number of commitments, legislative frameworks and policies that help to protect the marine environment. Key instruments for the protection of the UK offshore marine area include:

6.1.1 Oslo and Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)

Through the OSPAR Convention, the UK has agreed to establish and contribute to a well-managed ecologically coherent network of MPAs in the North-East Atlantic. The North-East Atlantic Environment Strategy (NEAES) 2030 is the means by which OSPAR's 16

Contracting Parties implement the OSPAR Convention until 2030. Under this strategy, OSPAR aims to ensure that, by 2030, at least 30% of its maritime area is covered by an ecologically coherent and effectively managed network of MPAs and Other Effective area-based Conservation Measures (OECMs). Through the NEAES 2030, OSPAR also aims to implement all agreed measures to enable the recovery of the 54 species and habitats OSPAR has identified as threatened and/or declining and, therefore, in need of priority protection.

6.1.2 Marine Strategy Regulations (2010)

The Marine Strategy Regulations 2010 requires the Secretary of State, devolved policy authorities and certain other Northern Ireland public bodies to take the necessary measures to achieve or maintain Good Environmental Status (GES) within the marine strategy area. The Secretary of State must develop and implement a UKMS in collaboration with the devolved policy authorities. The UKMS showcases progress with regards to benthic habitats through publications related to assessment, monitoring and measures. MPAs are key tools for delivering GES. As the UKMS promotes targeted management within MPAs to reduce human impacts on benthic ecosystems, it supports the ecological coherence and effectiveness of the UK's MPA network.

6.1.3 The Environment Act (2021)

Section 1 of the Environment Act 2021 led to the formulation of the Environmental Targets (Marine Protected Areas) Regulations (2023). Defra established a statutory target under the Regulations, requiring at least 70% of protected features in listed MPAs to be in a favourable condition by December 2042. The remaining features must be in recovering condition meaning that all necessary measures to manage or eliminate relevant impacts have been implemented.

6.1.4 Environment Improvement Plan (2023)

The Environment Improvement Plan (EIP), first published in 2023 and revised in 2025, is an update to England's 25 Year Environment Plan 2018 (25YEP). The 25YEP is the Government's long-term strategy to improve the natural environment within a generation. It covers England and the UK's Overseas Territories and sets out ten key goals, including enhancing biodiversity and reducing pollution. It also includes commitments to securing clean, healthy, productive, and biologically diverse seas and oceans, and commits to completing an ecologically coherent network of well-managed MPAs.

The EIP sets out how the government intends to achieve the environmental goals set out in the 25YEP.

6.1.5 Energy Act (2023)

Chapter 1 of Part 13 of the Energy Act 2023 provides powers to, by regulations, make provision (1) for the establishment, operation and management of a marine recovery fund, and (2) about the taking or securing of environmental compensatory measures, and the assessment of environmental effects. These powers are available in relation to relevant offshore wind activity only.

As one mechanism to enable strategic compensatory measures to be delivered, Defra has committed to strategically designating new MPAs or extending existing ones in English waters, ensuring that compensation for seabed damage from offshore wind is ecologically meaningful and delivered strategically. The potential MPAs will be identified by SNCBs based on ecological principles. Defra will then apply policy, social and economic principles

(where appropriate) to facilitate a transparent, participatory and evidence-led approach throughout the site selection process, as per the principles for identifying and selecting compensatory MPAs. MPAs will then be designated under relevant legislation.

6.1.6 Marine and Coastal Access Act (2009)

Section 123(2) of the Marine and Coastal Access Act sets out the objective that MCZs, together with other MPAs, form a network that contributes to the conservation or improvement of the marine environment, represents the diversity of marine features present in the UK, and reflects the need for multiple sites to protect features effectively.

6.2 Management Plans and Site Information Centres

The Habitats Directive requires conservation measures that enable the ecological requirements of Annex I habitats and Annex II species to be met at SACs. Management plans are examples of conservation measures that can be used to protect sites. There are nine national marine plans in the UK's inshore and offshore marine areas: the Welsh National Marine Plan, Scotland National Marine Plan, East England Marine Plans, South England Marine Plans, North East England Marine Plans, Northwest England Marine Plans, South East England Marine Plans, South West England Marine Plans and the Marine Plan for Northern Ireland. These plans focus on sustainable management and mitigation of marine industries and activities. These plans are not specific to Annex I habitats and Annex II species but are expected to provide benefit to these protected features, along with marine birds.

Site-specific information on management is contained within the MPA conservation advice packages and are available on the site information centres (SICs) on the JNCC website for all the UK's Offshore MPAs. JNCC's MPA conservation advice provides developers, regulators and other stakeholders with an understanding of each sites' conservation objectives and an overview of the conservation measures that are considered required to achieve/maintain protected features to/in favourable condition.

6.3 Measuring Management Effectiveness of Protected and Conserved Areas (MEPCA)

This Technical Annex uses the MEPCA Indicator to assess management effectiveness of protected areas. The MEPCA indicator metrics are derived from four key questions:

- Is information on the protected or conserved area (PCA) for management available?
- Are management measures being implemented for the PCA to achieve its outcomes for conservation?
- Does monitoring take place which helps to assess progress towards achieving conservation outcomes?
- Is the PCA achieving its conservation outcomes?

A confidence score associated with the final question on the level of confidence in the data is used to assess progression towards the achievement of conservation outcomes.

The MEPCA Indicator metrics have been adapted from the OSPAR MPA management status reporting, where similar questions are asked of Contracting Parties. The following information presented was gathered during the biennial reporting process for OSPAR in 2025 by JNCC and is presented using the MEPCA indicator metrics. The best available evidence was used at the time of reporting, noting that it is subject to change in future

assessments based on available data. Results reflect the situation during the 2019–2024 reporting period and do not include new measures implemented in Scotland in 2025.

Further information on how the OSPAR management status reporting is transferred into the MEPCA Indicator is found in the OSPAR Coordinated Environmental Monitoring and Assessment Programme (CEMP) guidelines on the MEPCA Indicator (OSPAR Commission 2025).

In the sections below on the measures taken to protect offshore habitats, marine mammals, marine turtles and marine birds, the effectiveness of protected area management is assessed using the MEPCA indicator. This information was gathered through the UK's reporting to OSPAR on MPA management status. The MEPCA indicator was not applied to marine turtles because no protected areas have been designated for turtles.

6.4 Overarching measures

The overarching measures described in Sections 6.4.1 to 6.4.4 are designed to contribute to the protection of marine habitats, marine mammals, marine turtles and marine birds. Sections 6.5 to 6.8 describe the implementation and impact of these overarching measures on these habitats and species. These measures will also help to ensure coherence of the national site network is protected.

6.4.1 Marine licensing and consenting

Regulation 28 of the Offshore Regulations provides that where a plan or project is likely to have a significant effect on an SAC or SPA and is not directly connected with or necessary to the management of the site, a competent authority must make an appropriate assessment, also known as a Habitats Regulations Assessment (HRA). The HRA will assess the implications for the site in view of its conservation objectives before undertaking or consenting, authorising, etc. the plan or project. The HRA tests whether a plan or project proposal could have an adverse effect on the integrity of a relevant SAC or SPA (see Section 6.4.2). A Competent Authority may only undertake or authorise the plan or project where it will not adversely affect the integrity of the site, unless there are no alternative solutions and the plan or project must proceed for Imperative Reasons of Overriding Public Interest (IROPI). In such cases, compensatory measures must be secured. In the case of offshore oil and gas activities (including gas and carbon dioxide unloading and storage activities), the obligations for the HRA is provisioned for under the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001.

Under the Marine and Coastal Access Act 2009 a marine licence is required for certain activities carried out within the UK marine area Licensable marine activities must submit an application to the MMO which may include an impact assessment of potential impacts of the proposed development if it has the potential to significantly affect the environment (under the Marine Works (EIA) Regulations 2007) and identify mitigation measures where needed. The licensing authority can attach conditions to any marine licence which it grants; this may include relevant mitigation measures. Spatial overlap of activities exploiting energy resources is currently low in offshore SACs. However, it is important that any cumulative impacts (from offshore energy activities occurring concurrently or in the same geographic region) are fully considered for their potential impact on offshore marine habitats and species.

As part of the 33rd Offshore Licensing Round, between 2022 and 2024, 83 new petroleum Production Licences were awarded under the Tranche 1, Tranche 2 and Tranche 3 awards for areas West of Shetland, the Northern, Central and Southern North Sea, and the East Irish Sea. Some of these overlap with three SACs. These are Dogger Bank and North

Norfolk Sandbanks and Saturn Reef SACs, designated for Annex I habitats, as well as the Southern North Sea SAC designated for Harbour Porpoise. Although awarding a Petroleum Production licence does not guarantee that a project will progress to the exploration and then production phase, there is still potential that a proportion will progress. In addition, 21 licences for offshore carbon dioxide storage have been awarded in depleted oil and gas reservoirs and saline aquifers. Some of these licences include areas covered by SACs which in addition to the three sites mentioned previously, also include Inner Dowsing, Race Bank, and North Ridge SAC, and Haisborough, Hammond, and Winterton SAC (both joint inshore/offshore sites). Further applications for Development Consent Orders (DCOs) for offshore renewable wind development are in progress, including large areas of Dogger Bank SAC (Crown Estate 2023). Impacts from such developments are not limited to the windfarm itself and include areas associated with cabling. For example, there are proposed OFW sites outside of SACs but have potential export cable routes through SACs (e.g. Pobie Bank Reef). These applications for DCOs are not consented and are still in the early stages but have the potential for future impacts to the SACs. These activities are likely to impact progress towards achieving FCS once work has begun.

6.4.2 Compensatory measures and derogations

Compensatory measures refer to those taken in connection with plans and projects authorised pursuant to the Imperative Reasons of Overriding Public Interest (IROPI) derogation, as set out in regulation 29 of the Offshore Regulations to ensure the overall coherence of the National Site Network is protected.

The competent authority will undertake a three stage HRA process based on Offshore Regulations 28 and 29 the information for which is provided by the Developer. The outcome of each stage predicts the next. This process is recognised across the UK and devolved governments.

Where it is concluded at Stage 1 ‘Screening’ that a plan or project will have a Likely Significant Effect (LSE) on the features of an SAC alone or in combination with other plans or projects the process proceeds to Stage 2: Appropriate Assessment. If, at Stage 2, it cannot be determined that the plan or project will not have an Adverse Effect on Site Integrity (AEoSI), the integrity test, the plan or project proceeds to Stage 3, ‘Derogation’. At Stage 3, three legal tests are applied to decide whether a proposal qualifies for a derogation. A derogation allows a project to progress even if an AEoSI has been established in Stage 2 where the Competent Authority is satisfied that, there being no alternative solutions, the plan or project must proceed for IROPI that there are no alternative solutions. Should alternative solutions not be viable, it has to be considered whether the plan or project should proceed for IROPI. Regulation 36 of the Offshore Regulations provides that where a plan or project is agreed to for IROPI the appropriate authority must secure that any necessary compensatory measures are taken to ensure coherence of the national site network is protected.

6.4.3 Protections for Species

Part 3 of the Offshore Regulations (regulations 39 to 49) outline the protections for species listed in Annex I of the Birds Directive (subject to special conservation measures) and Annex IVa (species that require strict protection) of the Habitats Directives in the offshore marine area.

Regulations 40 to 43 specifically refer to the protection of birds, prohibiting the deliberate killing, injuring or capturing of listed species, and protects the nests of wild birds and their eggs. Regulations 45 to 48 refer to the protection for wild animals (Annex IVa) and prohibit the deliberate killing, injuring or disturbance of listed species. Regulation 49 establishes

offences relating to plant species listed in Annex IV(b) of the Habitats Directive, prohibiting the keep, transport and selling of listed species.

Additional protection is provided in Part 4 regarding the *controlled* exploitation of Annex V species (species of national interest whose taking and exploitation may be subject to management measures) while ensuring that they are maintained at FCS.

Part 5 (regulations 55 to 57) provides licensing authorities powers to grant licences to enable activities to occur that may cause an offence under Part 3 (regulations 39–49) in certain circumstances and for limited purposes. The licensing authority must be satisfied the activity passes certain tests before granting a licence, including the authorised action will not be detrimental to the maintenance of the population of the species concerned at an FCS in their natural range.

6.4.4 Fisheries Management Plans

The Fisheries Act came into force in 2020, and under this framework the Joint Fisheries Statement (JFS) was produced in 2022. Further to the JFS, Fisheries Management Plans are being developed for a number of commercial stocks to ensure their sustainable management. Wider ecosystem benefits and protected species can be considered as part of these plans. They may bring added benefits to the protection of marine habitats and marine mammals and other protected species outside of MPAs.

6.5 Implementation of Offshore Marine Habitats measures

This section describes the implementation and impact of the overarching measures described in Section 6.4 for offshore marine habitats, including the statutory, administrative or contractual measures for SACs to meet the ecological requirements of Annex I habitats present within these sites.

6.5.1 Measures in SACs

During the reporting period 2019–2024, management measures to protect Annex I habitats were implemented within 80% of sites, although in 70% there was only partial implementation as suggested by the MEPCA indicator (Table 11). The MEPCA indicator assessment of SACs include two sites that are jointly managed by JNCC and Natural England, but as a portion of the site boundaries lie within the UK marine offshore area, they have been included in this assessment.

Every SAC currently has management documented within the conservation advice packages in SICs, where actions and measures to address known threats and pressures, and conservation objectives have been identified. For all offshore SACs, including where management measures have not yet been implemented, plans and projects including the impacts of licensable marine activities are regulated through the marine licensing process. Fisheries management measures are under consideration or in place for the majority of SACs (see Section 6.5.3).

Compliance monitoring of condition for licensable activities by the responsible authority is in place for all SACs. For 80% of these, there has been at least one baseline condition monitoring survey completed since 2011. Only three sites (15%) are thought to be achieving their conservation outcomes, while the remaining offshore SACs (85%) are unlikely to be moving towards their conservation objectives (Table 11). This is largely due to the significant lack of long-term condition monitoring data available and the subsequent reliance on proxies, which is reflected in the low confidence in assessment of data used to answer whether the PCA is moving towards conservation outcomes for these SACs (Table 12).

However, this does indicate that measures are not yet effective for the majority of offshore SACs designated for marine habitats (see 6.5.4).

Further measures are discussed within the UKMS Part 3 UK Programme of Measures (Defra 2024b), which also considers the legislative approach and future regarding offshore wind and climate change. This document describes the approach the UK is taking to achieve GES for benthic habitats.

Table 11: Summary of the MEPCA indicator for offshore marine habitats outlining the number and percentage of SACs meeting the criteria outlined in the four key MEPCA indicator metrics.

Responses	Is management information available?		Are management measures implemented to achieve its conservation outcomes?		Does monitoring take place which helps to assess progress towards achieving conservation outcomes?		Is the PCA achieving its conservation outcomes?	
	Percent	Sum	Percent	Sum	Percent	Sum	Percent	Sum
Yes	100%	20	10% [Note]	2	10%	2	15%	3
Partially	0%	0	70%	14	70%	14	0%	0
No	0%	0	20%	4	20%	4	85%	17

Note: These results do not include in new measures implemented in Scotland in 2025 as this is outside of the reporting period.

Table 12: Confidence assessment of the data used to assess progress towards the achievement of conservation outcomes for SACs designated for offshore marine habitats for the MEPCA indicator.

Level of confidence	Number of SACs	Percentage of SACs
High	2	10%
Moderate	0	0%
Low	18	90%

6.5.2 IROPI derogations & compensatory measures

IROPI derogations resulting in compensatory measures must ensure the coherence of the National Site Network is protected. The process is outlined in Section 6.4.2. Between 2019 and 2024, three OFW projects were consented where compensatory measures for Annex I habitats have been put in place (Table 13).

Of the three OFW projects, only one (Hornsea Project 3) is wholly offshore. The Hornsea Project 3 offshore wind farm required compensation for Reef and Sandbank habitats. The initial compensation measures comprised of marine litter removal. While the undertaker fulfilled the requirements of their Development Consent Order to reasonably remove marine litter from an area of search of no less than 2.77 ha in the WNNC SAC and 41.80 ha within the NNSSR SAC, the amount of marine litter identified and subsequently removed in practice was less than initially anticipated.

The other two OFW projects are located within Haisborough, Hammond and Winterton SAC, which crosses the 12 nm boundary and is jointly managed by JNCC and Natural England with advice provided to projects/regulators via the JNCC/Natural England delegation (Table 13). These projects require compensation for Sandbanks and biogenic reef. The consented compensation measures for this reporting period are marine debris removal within the SAC, together with an awareness campaign, but discussions on compensation are ongoing.

Following additional leasing rounds by The Crown Estate, further applications for DCOs for offshore renewable wind development are in progress, including over large areas of Dogger Bank SAC. Compensation measures are being developed for these projects on a 'without prejudice' basis. Defra has been working with the devolved governments, SNCBs, offshore wind industry and NGOs through the Collaboration on Offshore Wind Strategic Compensation (COWSC) since 2019 to develop strategic compensation measures which would be delivered through the Marine Recovery Fund (MRF). Whilst measures are still being developed, to date MPA designation is the only benthic compensation measure listed in the Library of Strategic Compensatory Measures (LoSCM). Although the currently consented compensation measures for Norfolk Boreas and Norfolk Vanguard are marine debris removal within the SAC, together with an awareness campaign, the intention is for these OFW projects to now deliver compensation through the Marine Recovery Fund.

Table 13: List of Plans and Projects that Resulted in Compensation or a Derogation on a Special Area of Conservation (SAC) site within the Reporting Period.

Plan or Project Name	Appropriate Authority	Year Appropriate Authority was informed of project	SAC impacted	Annex I Habitats impacted
Norfolk Boreas Offshore Windfarm	DESNZ	2020	Haisborough, Hammond and Winterton SAC (UK0030369)	Sandbanks and Reef
Norfolk Vanguard Offshore Windfarm	DESNZ	2021	Haisborough, Hammond and Winterton SAC (UK0030369)	Sandbanks and Reef
Hornsea Project 3 Offshore Windfarm	DESNZ	2022	North Norfolk Sandbanks and Saturn Reef SAC (UK0030358)	Sandbanks and Reef

Compensatory measures under IROPI are required to maintain or restore the coherence of the national site network. At the point of consent, the appropriate authority will have reviewed and accepted that the proposed measures are supported by evidence that they will achieve this objective. Assessing the efficacy of these measures in practice requires data on whether they have been delivered as planned and whether they have achieved the expected outcomes. Such data is currently unavailable across the lifetime of the measures and coherence is assessed at the point of approval based on predicted outcomes.

6.5.3 Fisheries measures

Fisheries management measures are required to manage and reduce the pressures exerted from fisheries activities which can result in damage or disturbance to the seafloor. Measures are also required to manage and reduce the removal and disturbance of target species that is occurring across all offshore marine habitats. In the offshore, a bottom-contact fishing gear is a primary disturbance type related to fisheries activities (OSPAR 2023a) which can result in physical changes to other seabed types as well as significant surface and subsurface abrasion, impacting and damaging communities. These pressures can take a long time (more than 25 years) for Annex I habitats to recover from (Tillin *et al.* 2010; Tyler-Walters 2025a, 2025b).

Fisheries management measures are expected to help SACs achieve their conservation objectives and are now either in place, in progress or under consideration for the majority of offshore SACs. There has been an increase in protections since 2019. In 2021 the UK started development of MMO byelaws in offshore MPAs in England, resulting in the restriction of fishing activities in several SACs and MCZs (e.g. Dogger Bank SAC, Inner Dowsing, Race Bank and North Ridge SAC, South Dorset MCZ, Canyons MCZ) that came into effect in 2022. These measures will protect Annex I habitats through the limitation of bottom-towed gear. Furthermore, as of 2024, the MMO implemented further byelaws relating to new fisheries management measures in 13 MPAs to protect against bottom trawling. These are now in force offshore for Haig Fras SAC, North Norfolk Sandbanks and Saturn Reef SAC, and Wight-Barfleur Reef SAC. The MMO and the Scottish Government's Marine Directorate will periodically review any measures implemented. SNCBs will conduct assessments on the effectiveness of those measures in support of any reviews. Consultations on new measures to exclude certain fishing gears from MPAs to protect benthic habitats in Scotland took place in 2024 and have since been implemented outside of this reporting period. Further consultations for new measures in England have taken place since 2024.

Further examples of measures offering wider protections include those enacted during previous reporting periods. These include: the Hatton Bank and Hatton Rockall Basin North East Atlantic Fisheries Commission fisheries closures for the protection of vulnerable marine ecosystems (Recommendation 19:2014 (as amended by Recommendations 09:2015, 10:2018, 10:2021, 06:2023, 07:2023, 12:2024, and 13:2024); byelaws prohibiting the use of bottom-towed fishing gear in specified areas of the Inner Dowsing, Race Bank and North Ridge SAC and Haisborough, Hammond and Winterton SAC to protect biogenic *Sabellaria* reefs and Sandbanks; closures in Darwin Mounds and North West Rockall SACs under Regulation (EC) No 850/98 and Regulation (EU) No 227/2013 respectively; and regulations on fishing deep-sea stocks and restrictions on bottom trawling in waters deeper than 800 m (Regulation (EU) 2016/2336 (as amended by S.I. 2019/753).

Regarding the fisheries measures enacted during this reporting period, it is too soon to assess whether the fisheries management measures introduced in Dogger Bank SAC in 2022 and several MPAs in 2024 have been effective at managing the impacts of bottom-towed gear. Closures and fisheries management areas that restrict gear types can remove or significantly reduce the pressure deriving from this type of activity, however given marine habitats may take several years to recover, it is therefore difficult to determine recovery. In the latest assessments of the extent of physical disturbance to benthic habitats from fisheries with mobile bottom contacting gears, GES has not been met, particularly in offshore habitats (UKMS 2024a).

6.5.4 Efficacy of measures

Offshore benthic habitats are assessed as being in poor or unfavourable condition/status in the UK. While there are some positives, poor condition/status is evidenced through the Annex I feature assessments, MPA assessments (see the SICs for individual MPAs) and through assessments undertaken for the UKMS (2024b) and OSPAR (OSPAR 2023a). Poor condition/status is indicative of the number and intensity of pressures acting on offshore habitats, including Annex I features. The actions the UK is taking to manage and protect against these pressures have been discussed in this section and more details are included within UKMS Part 3 (Defra 2024b), which outlines the actions required to achieve GES. The recovery rate of Annex I habitats and their associated biological communities once management measures are in place depend on their sensitivity and resilience to the intensity of fishing activities that occurred (Defra 2024a; Rijnsdorp *et al.* 2020). Where resilience is high this may occur within two years, or where resilience is very low take over 25 years (Tillin *et al.* 2010; Tyler-Walters *et al.* 2018). As such, it is currently too soon to assess whether measures have been effective. For example, in this assessment, fishing pressure over Annex I habitats from fishing activities is still regarded as a high pressure, and features were classed as Unfavourable despite measures being in place. Recovery may not be certain where pressures have been acting on features for a prolonged period of time.

However, progress has been made since the last Article 17 report in 2019. For example, aforementioned restrictions to fishing will limit damage to the seabed and vulnerable habitats, helping to facilitate their recovery. Continued consents for offshore wind development, oil and gas activities, and offshore carbon dioxide storage within MPAs would be likely to increased activities that could negatively impact progress towards achieving FCS without necessarily increasing the overlap with the marine habitat feature for this to be considered a higher pressure within Feature Reports. It should be noted, however, that there are significant evidence gaps which means confidence in assessment outcomes is generally low. Published in 2025, a Natural England commissioned report details some clear recommendations to address key evidence gaps which is also relevant to offshore SAC benthic features (Natural England 2025).

Stronger links between assessment results and decision-making underpinning marine management and planning are required to ensure effectiveness of measures in achieving FCS. While there are positives, overall, the current level of failures may indicate that the existing measures are either not effective at reducing continued deterioration of habitats or are a reflection of the lag between measures being implemented and recovery taking place.

6.6 Implementation of Measures for Marine Mammals

This section describes statutory, administrative or contractual measures for SACs to meet the ecological requirements of Annex II species of marine mammals at those sites. The five offshore SACs featuring marine mammals are designated for Harbour Porpoise, but other species will occur within them and benefit from protection they provide. Harbour Seal and Grey Seal also benefit from SAC protection of their breeding and haul-out sites along the UK coast. Inshore Bottlenose Dolphins are also protected by inshore SACs. Details of seal and inshore Bottlenose Dolphin SACs are provided in the country reports. However, these three species move beyond protected areas and all other marine mammal species in UK waters are wide-ranging, and venture outside its waters.

Therefore, the most effective measures to protect marine mammals in the UK offshore marine area and adjacent waters is to mitigate the impact of pressures. This chapter describes the measures in place to protect Annex IV(a) marine mammals in their natural range; and the research and conservation measures taken to ensure that incidental capture and killing of Annex IV(a) marine mammals does not have a significant negative impact on

them. Details are also provided of monitoring in place to monitor the effectiveness of measures in reducing pressures and protecting marine mammals offshore.

6.6.1 Measures in SACs

Site-specific management measures are not in place for offshore Harbour Porpoise SACs, but the MEPCA indicator suggests management is partially implemented in all SACs through the regulation of plans and projects including licensable marine activities, and publicly available noise guidance (see 6.6.4.1) that is periodically reviewed (Table 14). The SACs include sites that are jointly managed by JNCC alongside Natural England, DAERA and NRW, but as a portion of the site boundaries lie within offshore waters, they have been included in this assessment.

Since 2019, there has been development of MMO byelaws in English offshore MPAs resulting in the restriction of fishing activities in several SACs and MCZs (e.g. Dogger Bank SAC, Inner Dowsing, Race Bank and North Ridge SAC, South Dorset MCZ, Canyons MCZ) (See MMO MPA Stage 3 Consultation). These restrictions apply to the areas where a site overlaps any of these MPAs, such as in the Southern North Sea SAC. Work is also ongoing to assess English MPAs designated for highly mobile species, including Harbour Porpoise, to determine the impact of fishing on the protected species with aims of introducing proportionate management measures, if required.

Every SAC currently has management documented within conservation advice packages in SICs. These list the Conservation Objectives for each SAC and provide 'Advice on Operations' assess the risk to Harbour Porpoise from ongoing activities occurring within or close to the SAC. This information is also used to assess the likely cumulative impacts of multiple activities operating within or close to an SAC. While every attempt has been made to ensure this risk assessment advice is accurate and kept up to date, the list of activities included is not considered to be exhaustive or definitive. The list does not, for example, include activities occurring off-site, which may also be capable of affecting the protected features.

Monitoring is partially implemented in all SACs designated for Harbour Porpoise as part of the broader SCANS surveys that monitor populations at a UK and European level in a six-year cycle. However, it is currently unknown whether any site is moving towards achieving its conservation objectives of maintaining FCS as monitoring is only through SCANS surveys and lacks other data, meaning there is low confidence in the results for 60% of sites (Table 15).

Table 14: Summary of the MEPCA indicator for offshore marine mammals outlining the number and percentage of SACs meeting the criteria outlined in the four key MEPCA indicator metrics.

Responses	Is management information available?		Are management measures implemented to achieve its conservation outcomes?		Does monitoring take place which helps to assess progress towards achieving conservation outcomes?		Is the PCA achieving its conservation outcomes?	
	Percent	Sum	Percent	Sum	Percent	Sum	Percent	Sum
Yes	100% [Note]	5	0%	0	0%	0	0%	0
Partially	0%	0	100%	5	100%	5	0%	0
No	0%	0	0%	0	0%	0	0%	0
Unknown	0%	0	0%	0	0%	0	100%	5

Note: This is based on the assessment criteria and data gathered through the OSPAR reporting (see Section 6.3), however, there are no site-specific management plans and documents available on the SICs, such as the Advice on Operations, these have not been updated since designation.

Table 15: Confidence assessment of the data used to assess progress towards the achievement of conservation outcomes for SACs designated for offshore marine mammals for the MEPCA indicator.

Level of confidence	Number of SACs	Percentage of SACs
High	0	0%
Moderate	0	0%
Low	3	60%
Not Applicable	2	40%

6.6.2 IROPI derogations and compensation

There have been no derogations for marine mammal SACs. Therefore, no compensatory measures have been taken to ensure the coherence of the National Site Network.

6.6.3 Measures to minimise incidental capture and killing

As Annex II & IV species, it is an offence to kill, injure, or disturb marine mammals throughout UK waters.

Seals are protected through a mix of legislation throughout all UK waters. These include the Wildlife and Countryside Act 1981, Fisheries Act 2020, Conservation of Seals Act 1970, the Wildlife (Northern Ireland) Order 1985, Marine (Scotland) Act 2010, Marine Act (Northern Ireland) 2013, the Conservation (Natural Habitats &c.) Regulations 1994 (as amended), The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), the

Habitats Regulations and the Offshore Regulations. However, a licence can be granted under the Conservation of Seals Act 1970, supplemented by the Marine (Scotland) Act 2010 in Scotland, for the take or killing of seals.

In March 2021, amendments were made to the Conservation of Seals Act 1970 by Schedule 9 of the Fisheries Act 2020 which meant the taking or killing of seals under the 'netsman's defence' is no longer allowed. Similar changes were also made to the Marine (Scotland) Act 2010 and the Marine Act (Northern Ireland) 2013. This change to the legislation has decreased the number of licences granted. For example, only one licence has been issued in Scotland since 2021 with no seals shot under that licence, and in Northern Ireland there are four licences for disturbance and one more for catching, killing, injuring or disturbing which expires in January 2026. Reporting on the number of licences granted and the number of seals taken or killed under these licences varies across all administrations and further details are provided in the country reports.

All cetacean species are protected from incidental capture in UK waters through the Wildlife and Countryside Act 1981 and the Offshore Regulations. The Wildlife and Countryside Act makes it an offense to "intentionally or recklessly disturb any dolphin, whale or porpoise" or "sell, offer or expose for sale any cetacean" while the Offshore Regulations make it an offence to deliberately capture, injure, kill or disturb marine mammals throughout UK waters

The main cause of anthropogenic mortality in cetaceans (and some seals) is accidental capture in fishing gear – 'marine mammal bycatch'. The UK Bycatch Monitoring Programme (BMP) has long provided data on bycatch rates of marine mammals in UK fisheries. All fishing vessels over 12 metres using gill nets or entanglement nets are required to use pingers, a small acoustic deterrent device attached to nets that produce sounds to alert marine mammals to fishing gear, under the criteria laid out in Regulation (EU) 2019/1241.

Since 2019, progress has been made in better understanding the impact of bycatch and how to best reduce marine mammal bycatch in UK waters. The 2022 UK Marine Wildlife Bycatch Mitigation Initiative outlines how the UK will achieve its ambitions to minimise and, where possible, eliminate the bycatch of sensitive marine species. It sets out policy objectives to identify 'hotspot' or high-risk areas/gear types/fisheries in which to focus monitoring and mitigation and develop and implement effective measures to minimise bycatch and entanglement. Currently work is progressing towards development of Regional Bycatch Risk Prioritisation Frameworks, with the aim to deliver a more coordinated approach to monitoring and minimising bycatch of sensitive marine species by helping prioritise where efforts in bycatch reduction need to take place. They will provide quantitative and spatial information on bycatch risk per region, and a review of mitigation technology, including effectiveness and a matrix to identify any bycatch reduction technologies that could be effective for multiple species.

6.6.4. Wider measures to mitigate pressures

6.6.4.1 Anthropogenic sound

As part of the consenting process (see Section 6.4.1), developers and operators are required to utilise JNCC guidelines to minimise the risk of injury to cetaceans when undertaking such activities. The guidelines advise on conducting marine mammal observations prior to and during the activity and, where suitable, utilising procedures such as soft start (gradual introduction of the sound) to reduce and avoid direct harm to animals. The UK Ministry of Defence (MOD) also has a Statement of Intent with UK SNCBs concerning conduct in relation to marine disturbance. The MOD has developed a real-time alert procedure for naval training operations. This enables localised information on cetacean

sightings to be incorporated into the training schedule and for operations to be relocated if necessary.

In 2020 joint advice from JNCC, Natural England and DAERA was published on assessing the significance of noise disturbance against Conservation Objectives of Harbour Porpoise SACs. The guidance describes how the area of SAC disturbed might be determined through use of Effective Deterrent Radii. It suggests that noise disturbance within an SAC is considered significant if it excludes Harbour Porpoises from more than 20% of the site in any given day, or an average of 10% over a season. These thresholds are used by developers and the SNCBs in the HRA SIP processes.

A number of programmes are also aimed at increasing knowledge and understanding of offshore industries and its potential impact on marine mammal species such as underwater noise (e.g. OWEER, OWEAP, POSEIDON, MNR, OESEA, OWEC).

6.6.4.2 Chemical pollutants

The NERC-funded project ChemPOP is assessing the impacts of legacy and emerging pollutants on cetacean populations, ecosystems and ecosystem services and their relation to other pressures in the environment. Pollutants in marine mammals are monitored through both stranding schemes (CSIP, SMASS) and by Cefas (see below).

6.6.4.3 Climate change

Measures relating specifically to climate change are still limited and more information on the impacts of climate change for marine mammals in UK waters is still required. However, programmes such as the Marine Climate Change Impacts Partnership and their rolling evidence review is helping to provide ongoing updates on the impacts of climate change in UK waters. The marine mammal review was last updated in 2022 (Martin *et al.* 2023).

6.6.5 International Co-operation

The UK supports a range of international agreements and conventions on the conservation of marine mammals and the marine environment. These include the Convention on Migratory Species (CMS) and its subsidiary Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS). The UK supports the ASCOBANS Species Action Plan for North-east Atlantic Common Dolphin, which sets out objectives for addressing the pressure faced by Common Dolphins and recommends research, mitigation and monitoring to help improve their conservation status. The UK has collaborated with neighbouring countries through the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) to develop international indicators of marine mammal status and impacts (bycatch and PCB contamination) at are large geographic scale that is appropriate for these wide-ranging animals (OSPAR 2023e).

6.6.6 Efficacy of measures

Data availability limits confidence in assessing status of marine mammals and understanding the efficacy of measures in place. However, refined assessment methodologies for indicators will improve the identification of trends in future assessments. Though good evidence exists for bycatch, contaminants, and underwater noise, the UK picture is mixed in terms of progress being made to reduce these pressures and their impacts on marine mammals (see below).

6.6.6.1 Bycatch

The UKMS and OSPAR assessment of marine mammal bycatch concluded bycatch rates of Harbour Porpoise and Common Dolphin exceeded internationally agreed thresholds in UK and adjacent waters of the northeast Atlantic (Taylor *et al.* 2022). Grey Seal bycatch rates were below these thresholds but remain high. In waters around the UK and beyond, bycatch of marine mammals is occurring at levels that do not meet the aims of the bycatch measures described above: minimising, and where possible eliminating, incidental bycatch.

6.6.6.2 Anthropogenic sound

The status for underwater noise in UK seas is uncertain. However, both underwater noise indicators (impulsive and continuous) show an increasing trend across the assessment period, suggesting our seas are becoming noisier. Analysis of impulsive noise data between 2015 and 2021 showed that after initial high reported noise levels due to exceptionally high levels of seismic survey activity in 2015, impulsive noise decreased between 2016 and 2017 but then increased again between 2017 and 2021. This increase is driven by activities in the Greater North Sea, while the Celtic Seas trend remains stable. Continuous noise monitoring only began in 2018 and so data on trends prior to this are not available. However, between 2018 and 2022, reported levels of continuous noise has also increased in UK waters. This is likely driven by increased noise from shipping traffic.

6.6.6.3 Chemical pollutants

All criteria for contaminant concentrations in UK seas have met or partially met targets in the latest UKMS assessment, excepting contaminant concentrations for four heavy metals (lead, mercury, copper, zinc) and two other persistent pollutants (CB118 and BDE209) which are above environmental thresholds in sediments and/or biota, in at least one assessed region. 89% of contaminant concentration indicators and 96% of biological effects indicators met agreed target thresholds in 2019. Trends in sediment concentrations and biological impacts for most contaminants remain stable. Results from ChemPop also found that the impacts of chemical pollutants on the wildlife populations has decreased over time.

The OSPAR Pilot Assessment of Status and Trends of Persistent Chemicals in Marine Mammals highlighted that polychlorinated biphenyls (PCBs) are present in the blubber of marine mammals across the north-east Atlantic Ocean at levels which may impact on the reproductive function of individuals. However, while more data are needed, PCB levels now appear to be lower than in the 1970s and 1980s (Pinzone *et al.* 2022).

6.7 Implementation of Measures for Marine Reptiles

Leatherback Turtle is the only resident marine reptile species in UK waters. As they are very sparsely distributed in UK waters, it has not been possible or appropriate to include them as a designated feature of a marine SAC. As such, there are no SAC-specific management plans for Leatherback Turtle. However, the nine national marine plans highlighted in Section 6.2 will consider marine reptiles; marine reptiles are not explicitly mentioned in the plans, but provisions may benefit Leatherback Turtle and other marine turtles in UK waters.

Marine turtles are highly migratory and wide-ranging, originating from breeding areas outside of UK waters. Therefore, the most effective measures to protect marine turtles in the UK and adjacent waters is to minimise the incidental capture and killing.

6.7.1 Measures to minimise incidental capture and killing

As Annex IV species, it is an offence to kill, injure or disturb marine turtles throughout UK waters. All marine reptile species are protected from incidental capture in UK waters through the Wildlife and Countryside Act 1981. The Act prohibits intentional killing, injuring or disturbing of these species as well as the selling or possession of live or dead turtles.

6.8 Implementation of measures for Marine birds

This section describes the measures taken for the conservation of bird species and their habitats in the UK offshore marine area and the effectiveness of these measures. Offshore Regulation 6A requires reporting to include “provisions mentioned in Article 12 of the new Wild Birds Directive”, which requires information on the measures taken to:

- Maintain populations of naturally occurring birds in the wild (Article 2, Birds Directive).
- Preserve, maintain, or re-establish a sufficient of diversity and area of habitats for all species of naturally occurring birds in the wild (Article 3, Birds Directive).

In the UK offshore marine area, seabirds feed on prey at the sea-surface or dive to reach prey below the surface. Some distinct areas of importance have been identified and designated as SPAs, but the majority of marine SPAs are inshore and associated with certain seabed habitats on which birds can dive and feed. But in deeper offshore areas, prey on the seabed is usually out of reach. Therefore, the UK offshore marine area for seabirds effectively represents a single large habitat. Measures in the offshore need to focus on ensuring there are sufficient prey available for seabirds and to reduce and mitigate other impacts on seabirds from pressures operating offshore.

In recognition of pressures affecting seabird populations, and diseases such as HPAI, Defra commissioned Natural England to investigate the most likely causes of decline in seabirds and identify potential actions to support their recovery. The technical report produced (2020–2022), was published as the English Seabird Conservation and Recovery Pathway (ESCaRP, Banks *et al*. 2024). ESCaRP provides the core evidence base and framework for further measures.

The measures described in this section will complement other measures included in this report, such as those being implemented to protect species when breeding at colonies on land or using inshore areas. Details of those measures can be found in the country reports.

6.8.1 Measures in SPAs

Tables 16 and 17 show the MEPCA indicator assessment of the eight SPAs with an offshore component and the confidence in the assessment. Conservation Objectives and Advice on operations have been published for these SPAs. For most SPAs, measures have been partially implemented, in as much as projects or plans that may have an impact on the conservation objectives of a site are subject to HRA, but not all unregulated activities have been assessed and/or addressed. Three SPAs are jointly managed by JNCC alongside Natural England, NatureScot and NRW, but as a portion of the site boundaries lie within offshore waters, they have been included in this assessment.

Monitoring of the fully offshore SPA, Irish Sea Front, has not yet been implemented. Monitoring of Manx Shearwaters feeding in the Irish Sea Front SPA is much more challenging than monitoring the associated breeding colonies. Monitoring the numbers and breeding success at the associated breeding colonies will provide an accurate indication of the conditions for birds feeding in the offshore SPAs. Currently, numbers of Manx

Shearwaters are increasing in nearby colonies, which suggests favourable feeding conditions within the Irish Sea Front SPA.

Monitoring at the other seven sites is only partially implemented. At the three Scottish SPAs and the Welsh SPA, monitoring of breeding numbers at the colonies directly adjacent to the SPAs show a mixed picture, with only some species meeting favourable condition. There are no plans to monitor the seabirds at sea at these sites, as a more accurate indication of conditions at sea can be provided by existing monitoring at the colonies.

At the three English SPAs, which contain mainly inshore species, monitoring at sea abundance is in place, but monitoring of other attributes does not yet feed into the process. Compliance monitoring of conditions for licensable activities and management measures is in place by responsible authorities. Condition assessments for species at these sites are only available at national level.

Table 16: Summary of the MEPCA indicator for marine birds outlining the number and percentage of offshore SPAs meeting the criteria outlined in the four key MEPCA indicator metrics.

Responses	Is management information available?		Are management measures implemented to achieve its conservation outcomes?		Does monitoring take place which helps to assess progress towards achieving conservation outcomes?		Is the PCA achieving its conservation outcomes?	
	Percent	Sum	Percent	Sum	Percent	Sum	Percent	Sum
Yes	50%	4	12%	1	0%	0	12.5%	1
Partially	50%	4	88%	7	88%	7	75%	6
No	0%	0	0%	0	12%	1	0%	0
Unknown	0%	0	0%	0	0%	0	12.5%	1

Table 17: Confidence assessment of the data used to assess progress towards the achievement of conservation outcomes for offshore SPAs designated for marine birds for the MEPCA indicator.

Level of confidence	Number of SPAs	Percentage of SPAs
High	0	0%
Moderate	4	50%
Low	2	25%
Not Applicable	2	25%

6.8.2 Wider measures to mitigate pressures

6.8.2.1 Prevention of deliberate killing

Under regulations 40–44 and 45–48 of the Offshore Regulations there is a requirement to take measures to establish a general system of protection for all species of naturally occurring birds and wild animals respectively, prohibiting in particular:

- Deliberate injuring, killing or capture by any method.
- Deliberate destruction of, or damage to, their nests and eggs or removal of their nests.
- Taking their eggs in the wild and keeping these eggs even if empty.

All of the above are illegal under the Offshore Regulations and under the Wildlife and Countryside Act 1981 and equivalent legislation in Scotland and Northern Ireland. Due to concerns around the significant and serious declines in all five gull species that breed in Scotland, all gull species were removed from the gull general licence in 2019 and the gull licensing guidance has been updated.

6.8.2.2 Climate change mitigation and adaptation

As described in Section 5.9, climate change is recognised as the greatest threat to seabirds in the UK waters and other parts of the north-east Atlantic. The newly published Scottish Seabird Conservation Action Plan (Scottish Government 2025) recognises climate change as major contributing factor to declines in global seabird populations. Its recommended actions aim to build resilience of seabird species and their populations by addressing other pressures on them. In England, ESCaRP (Banks *et al*. 2024) also recognises the vulnerability of seabirds to the impacts of climate change and methods for mitigating these impacts were incorporated into recommendations.

While it will be impossible to reverse the direct impacts of climate change over this century, the measures described below should be viewed as attempting to build resilience of seabird species and their populations by addressing other pressures on them. However, improvements in the state of seabird populations may take decades to be realised because seabird species are mostly long-lived and slow to reproduce. Moreover, the uncertainties around the impacts of climate change and impacts on seabirds when they are outside UK waters make recovery equally uncertain. The Scottish Seabird Conservation Action Plan acknowledges these uncertainties and recognises "*that we need to be realistic about what can be considered improvements, seabird populations are unlikely to bounce-back in the short-term and, recovery will take time*." Therefore, the success of the Scottish Seabird Conservation Action Plan will be measured against the conservation status of Scottish seabirds in 2045.

6.8.2.3 Bycatch measures

Through the Marine Wildlife Bycatch Mitigation Initiative, fisheries policy authorities have set out policy objectives and potential actions to meet part of the Fisheries Act 2020 ecosystem objective that 'incidental catches of sensitive marine species, including birds, are minimised and, where possible, eliminated'. Each fisheries policy authority is responsible for setting out how it will take action on bycatch, for example, through implementation plans.

From 2020 to 2024, Defra commissioned JNCC to develop an evidence base for seabird bycatch. This included a preliminary assessment of seabird population response to potential bycatch mitigation in the UK-registered fishing fleet (Miles *et al.* 2020), which was informed by preliminary estimates of seabird bycatch by UK vessels in UK and adjacent waters

(Northridge *et al.* 2020). This led to a study of methods for seabird bycatch mitigation that have or might be applied to UK fisheries (Anderson *et al.* 2022). A project on bycatch 'hotspots' and possible reasons for them was published in Northridge *et al*. (2023), followed by a study identifying potential improvements to seabird bycatch monitoring (Kober *et al.* 2024). Using all this evidence and by working with experts and stakeholders, Defra is developing action plans to mitigate bycatch of seabirds and other sensitive marine species in English waters. An action plan to reduce seabird bycatch is expected in 2026. These action plans will build upon and be coordinated with existing Defra bycatch monitoring and mitigation projects.

Clean Catch (see 2.5.1) is producing specific outputs for seabirds, including bycatch 'seabird safe toolkits', practical guides for the fishing industry and regulators to further understand and reduce seabird bycatch in UK fisheries. These toolkits will be disseminated to relevant fisheries in 2026. The Clean Catch programme is also being expanded to deliver a second monitoring and mitigation trial, which will be focused on addressing seabird bycatch in the North Sea mixed whitefish fishery.

A study (Kingston *et al.* 2023) funded by the Scottish Government improved understanding of seabird bycatch in Scottish longline fisheries, compared with the earlier estimates of Northridge *et al*. (2020), and offered potential solutions.

6.8.2.4 Other fisheries measures

A key indirect impact of climate change has been the decline in food availability for seabirds, driven by warming seas disrupting the marine food chain. Sandeels, the preferred prey of many seabird species, have been less available over the last 2–3 decades.

In March 2024, the UK took the decision to close English waters of the North Sea and all Scottish waters to all sandeel fishing to protect seabirds and the wider marine environment. This was imposed through fishing vessel licence condition changes under the Fisheries Act 2020 in English waters, and via the Sandeel (Prohibition of Fishing) (Scotland) Order 2024 in Scottish waters. The closures will help protect and improve the wider marine environment by removing a pressure on sandeels, which are an essential food source for seabirds and other predatory species including commercially valuable fish, such as whiting and haddock, and for baleen whales and other marine mammals. The closures are expected to increase seabird biomass and are an important step for increasing the resilience of seabird populations, which face a range of threats including those from climate change and HPAI (Natural England, Cefas & JNCC 2023 - see Chapter 5).

Seabirds and their prey will also benefit from measures aimed at reducing other impacts from fisheries, including damage to seabed habitats (Section 6.4.4).

6.8.2.5 IROPI derogations and compensation

The UK and devolved governments are committed to accelerating to net zero and to delivering clean power by 2030. As described above, offshore wind developments present a threat to seabirds in terms of collision, displacement and barrier effects. Under the Offshore Regulations, measures must be secured in connection with plans and projects where a derogation under IROPI is invoked, to compensate for AEoSI concerning SPAs (in the case of seabirds). The duty to secure compensatory measures under regulation 36 is described at section 6.4.2 above.

Since 2019, two projects have been consented in English offshore waters which impact SPAs that fall either wholly or partly in UK offshore waters. The HRAs concluded AEoSI from both projects on red-throated divers in a single offshore SPA – the Outer Thames Estuary

SPA (see Table 18) and compensation measures for both projects have since been approved.

Defra has been working with the devolved governments, SNCBs, offshore wind industry and NGOs through the COWSC since 2019. Strategic compensatory measures aim to provide join-up across projects and organisations. This join-up will allow unavoidable impacts to MPAs to be compensated for at a strategic level across multiple offshore wind projects or plans. The COWSC programme has helped Defra develop the LoSCM. Two strategic compensation measures for seabirds have been included in LoSCM:

- Offshore Artificial Nesting Structures (offANS) for kittiwake.
- Predator Reduction via eradication, control and exclusion.

Appropriate next steps for further developing strategic compensation are under consideration.

It is not possible currently to provide a view on whether the marine part of the National Site Network remains coherent. An assessment of the coherence of the marine National Site Network would need to consider all marine habitats and species and at the full UK network scale. As discussed in section 6.4.2, whilst coherence is assessed at the point of approval of a plan or project, assessing the efficacy of compensatory measures to ensure that network coherence is protected requires data on whether the measures have been delivered as planned and achieved their expected outcomes. This requires data across the lifetime of the measures, which is not yet available.

Table 18: List of offshore Plans and Projects that have been consented with an IROPI Derogation for Adverse Effects on Site Integrity (AEoSI) concerning seabirds and SPAs during 2019-2024. Not all species are affected at SPA – see Project Appropriate Assessments for details.

Plan or Project Name	Appropriate Authority	Year of Consent	SPAs impacted	Species impacted
East Anglia One North offshore windfarm	DESNZ	2022	Outer Thames Estuary SPA	Red-throated diver
East Anglia Two offshore windfarm	DESNZ	2022	Outer Thames Estuary SPA	Red-throated diver

6.8.2.6 Marine Litter

The UKMS Part 3 (Defra 2024b) details the measures being taken by the UK government and devolved governments to reduce litter entering the marine environment. These include a UK-wide ban on microbeads; various incentives for producers to use alternatives to plastic packaging; and working with the fishing industry to develop solutions for the collection and recycling of end-of-life fishing gear.

Internationally, the UK has supported the development and implementation of OSPAR's second Regional Action Plan on Marine Litter. The UK is also a founding member of an international coalition to develop a legally binding UN treaty that will end plastic pollution by 2040. As of 18 December 2025, consensus on the treaty is yet to be reached by UN Member States; discussions will resume at a future date.

6.8.2.7 High Pathogenicity Avian Influenza (HPAI)

In 2022, a mitigation strategy for HPAI in wild birds in England and Wales was published outlining the policies and approach that Statutory Nature Conservation Bodies and their delivery agencies can take, as well as providing guidance to the general public and non-governmental organisations on HPAI issues that may impact them. In 2023, the Scottish Wild Bird HPAI Response Plan was published which sets out the approach that the Scottish Government and its agencies will take to response to an outbreak in wild birds, including seabirds in Scotland. The plan draws on information from the 2021–2022 outbreak. It is a live document and will be subject to review, considering lessons learnt, policy developments, the latest scientific advice and comments from operational partners and stakeholders.

6.8.3 International co-operation

The UK is a Contracting Party to various multilateral environmental agreements (MEAs). These include the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic and the CMS.

The (African-Eurasian Migratory Waterbirds Agreement (AEWA) is a 'subsidiary' agreement of CMS, which coordinates international effort for the conservation and management of migratory waterbirds and their habitats, including seabirds. The agreement provides for a range of conservation measures to be undertaken by parties including actions to address the impact of bycatch on seabird populations. AEWA's Action Plan urges parties to take appropriate actions to minimise the impact of fisheries on migratory waterbirds, especially to address incidental killing and bycatch in fishing gear.

OSPAR's Regional Action Plan for marine birds was developed during 2021–2023 and published in 2024, with significant involvement from the UK. The JNCC, on behalf of the UK, is leading or co-leading tasks on enhanced measures for marine birds, flyways scale conservation, offshore wind mitigation and compensation measures, and reducing the impact of mammalian predators. The UK also led the development and recent adoption of OSPAR Recommendation 2024/02 on reducing bycatch of marine birds in the northeast Atlantic.

JNCC contributes, on behalf of the UK, as an Observer to the Arctic Council's working group on Conservation of Arctic Flora and Fauna, particularly in relation to the Circumpolar Seabird Expert Group (CBird). CBird has developed strategies to facilitate circumpolar efforts to conserve, protect and restore populations of circumpolar importance. This includes action plans for Black-legged Kittiwake and guillemot species, which the UK contributes to because, though it is not an Arctic country, it shares seabird populations via international flyways.

6.8.4 Efficacy of measures

Seabirds in the UK and wider north-east Atlantic region are 'in trouble', as asserted by two successive assessments by OSPAR in 2017 and 2023. Chapter 3 of this Technical Annex shows that 12 out of the 16 offshore seabird species included in the reporting are threatened with the risk of extinction from the UK. Five species are considered 'critically endangered'. Seabird populations offshore have clearly not been maintained as required under the Offshore Regulations. But this not necessarily an indication that measures are not working. All the evidence provided on pressures in Section 5 points to climate change as the primary cause of most seabird declines. However, while reversing climate change remains a global challenge, the measures described to address other pressures may well increase the resilience of seabird populations.

The Scottish Seabird Conservation Action Plan acknowledges that '*there will be difficult decisions to be made in terms of how we balance our offshore wind ambitions and safeguard our seabird population*'. However, compensatory measures for OFW projects (see Section 6.8.2.5) have the potential to bring greater benefits in terms of enhancing seabird resilience to climate change. For example, the creation of new nesting habitat by removing rats from offshore islands off the north coast of Scotland may create welcome havens, as seabird are inevitably forced northwards by rising temperatures. These new or expanded colonies may also be better positioned to exploit new foraging grounds, as prey species also move and respond to climate change.

It is too early to assess the benefits of compensatory measures, or other new measures, such as the UK ban on sandeel fishing and the new fishing restrictions in MPAs (Section 6.8.2.4). However, in the case of seabird bycatch mitigation and marine litter reduction, some data are available with which to assess progress (see below).

6.8.4.1 Bycatch mitigation

For seabirds, preliminary estimates from the BMP report that bycatch from UK vessels in longline, gillnet and midwater trawl fisheries may account annual mortalities in the order of a few thousand birds of several species (Northridge *et al.* 2020, 2023), with Fulmar and cormorant being the most likely affected species in terms of possible population impacts (Miles *et al.* 2020). However, the estimates have high uncertainty in part because sample sizes are low and are possibly unrepresentative of the fleet. While annual bycatch of guillemot was estimated by Northridge *et al*. (2020) to be between 1,800 to 3,300 individuals, mainly in static net fisheries, this is thought to impact guillemots relatively little in population terms. Updated and improved estimates from the Scottish longline fishery (Northridge *et al.* 2023) indicated between 1,000-2,000 Fulmars were by-caught annually over the past two decades, lower than previous estimates of Northridge *et al*. (2020) of around 4,500 annually, which were based on a smaller, less representative dataset. The population impact of this updated estimate has not been investigated, because the analysis of Miles *et al*. (2020) was undertaken before the updated estimates of mortality were available.

6.8.4.2 Marine litter reduction

The UKMS Part 1 updated assessment (Defra 2025) concluded that marine litter levels remain high, although there are indications of reduction. There have been statistically significant decreases in beach litter and plastic abundance observed in the Greater North Sea and in the Celtic Seas, which include UK coasts. However, litter hauled up the seafloor in fishing nets had increased slightly in the Greater North Sea.

Small floating pieces of plastic, that are most likely to be accidentally ingested by seabirds and potentially cause harm, have decreased significantly in the North Sea (Defra 2025). Defra (2025) used OSPAR's indicator on plastic particles in Fulmar stomachs (Kühn *et al*, 2023). Currently 51% of beached North Sea Fulmars have more than 0.1 grams of plastics in their stomachs, exceeding the required OSPAR threshold of 10%. However, the amounts of ingested plastics have decreased significantly in the period 2009 to 2018.

7. Conclusions

This chapter summarises the results reported above and evaluates the impact of conservation measures on Annex I habitats and Annex II species of the Habitats Directive, as well as well as relevant bird species under the Wild Birds Directive. Therefore, these conclusions link to the Articles mentioned in the Habitats and Wild Birds Directives, as well the relevant provisions of the Offshore Regulations. Detailed requirements for reporting are listed in Appendix 1, but they can be summarised as follows:

- Protecting species and habitats listed in the Annexes of both the Habitats Directive and Birds Directive.
- Designating Special Areas of Conservation (SACs) for habitats and non-bird species, and Special Protection Areas (SPAs) for bird species.
- Conducting appropriate assessments for plans or projects affecting protected sites or species.
- Monitoring and reporting on the conservation status of habitats and species listed in the annexes of the Habitats Directive, and the implementation of measures taken.
- Taking measures to maintain populations of all species of naturally occurring birds in the wild state.
- Preserving, maintaining, or re-establishing a sufficient diversity and area of habitats for all species of naturally occurring birds in the wild.

7.1 Protecting species and habitats

This section concludes on the protection of offshore species and habitats listed in the Annexes of both Directives.

There are three habitats in Annex I of the Habitats Directive in the UK offshore marine area – Sandbanks, Reefs, and Submarine structures. They are all offered protection under the provisions described below (i.e. are designated features in SACs), subject to appropriate assessments and other measures (see below).

Annex II of the Habitats Directive contains four species of marine mammal that regularly occur in the UK: Bottlenose Dolphin, Harbour Porpoise, Grey Seal, and Harbour Seal. SACs are designated for all four species within the UK, but only for Harbour Porpoise in the UK offshore marine area (details below). Terrestrial and intertidal SACs protect seal breeding colonies and haul-out sites for both species. Two inshore SACs are designated to protect distinct population of inshore Bottlenose Dolphin. All SACs were designated before this reporting period.

Annex IV of the Habitats Directive includes all cetacean and marine turtle species. There are fourteen resident cetacean species and nine vagrant species in the UK offshore marine area. All cetacean and marine turtle species are protected from incidental capture in UK waters through the Wildlife and Countryside Act 1981. The Act prohibits intentional killing, injuring or disturbing of these species as well as the selling or possession of live or dead specimens, meeting requirements of Article 12(1) Habitats Directive (transposed to Offshore Regulation 45(1)).

Regulation 6A of the Offshore Regulations requires surveillance and reporting on Annex V species whose exploitation must be compatible with maintain FCS, as required under Article 14(1) of Habitats Directive (transposed to Offshore Regulation 51). Annex V includes the two seal species in UK waters. Seals are not hunted for their meat in the UK and are protected

through a mix of legislation throughout all UK waters. Until 2021, licences could also be granted for the take or killing of seals thought to be having an impact on fisheries or aquaculture however, changes to the legislation removed these grounds for which licences could be granted. This has significantly decreased the number of licences granted and very few seals have been killed with no impact on FCS.

7.2 Designating Special Areas of Conservation (SAC) and Special Protection Areas (SPA)

Offshore, the UK MPA network consists of different types of MPA, which when combined make up 36% of the UK's offshore marine area. Of these, SACs cover approximately 11% of the UK's offshore marine area. Some of these are designated for both habitats and species. In total, Annex I habitats in SACs cover approximately 7% and SACs for Annex II species cover 5% of the UK offshore marine area. Offshore SACs include one Annex II species – Harbour Porpoise.

All MPAs designated for offshore Annex I habitats and Annex II species are formally recognised as SACs.

Three new SPAs have been designated for regularly occurring seabird species in the UK offshore marine area since 2019. All three are partly in Scottish inshore waters. There are now eight SPAs that are at least partly in offshore waters, with only one - the Irish Sea Front SPA – wholly offshore. Together, the eight SPAs cover 0.01% of the UK offshore marine area.

7.3 Conducting appropriate assessments for plans or projects affecting protected sites or species

Under the Offshore Regulations, any plan or project likely to have a significant effect on an SAC or SPA and not directly connected with or necessary to the management of the site must be assessed by the relevant Competent Authority by undertaking a HRA (see Section 6.4.2).

Since 2019, IROPI derogations have been made (under Offshore Regulation 29) involving eight offshore wind farm developments occurring at least partly in the UK offshore marine area. In line with Art 6(4) of the Habitats Directive, and following Offshore Regulation 36, compensatory measures have been put in place in respect of impacts from three OFW projects on Sandbank and Reef habitats in two SACs (Section 6.5.2). Compensatory measures have also been agreed for two projects in English offshore waters that impact red-throated divers in a single offshore SPA (see Section 6.8.2.5). There have been no IROPI derogations issued, concerning impacts on Annex II species of marine mammals from offshore projects.

7.4 Conservation status of Annex I habitats and the implementation of measures and their effectiveness

None of the three offshore Annex I habitats have achieved FCS. The status of Sandbanks and Reefs is Unfavourable-bad and Unknown for Submarine structures due to an ongoing lack of data. No assessment was conducted in 2019, so trends are unknown, but the range and extent of Sandbanks is unlikely to have changed much and is probably stable.

Since 2019, there have been few surveys of offshore SACs designated for Annex I habitats, therefore these status assessments are based on limited new evidence. Monitoring of benthic habitats in the UK offshore marine area is limited by resources available and is

constrained to surveying one MPA per year. Without a comprehensive marine monitoring programme, the UK cannot fully meet the requirements of the Offshore Regulations with respect to monitoring the condition of Annex I habitats and the impact of measures.

Regulation 6A of the Offshore Regulations requires reporting on conservation measures taken under Habitats Directive Article 6(1) where for special areas of conservation, "*Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites*".

In terms of establishing conservation measures and management plans for Annex I habitats in SACs the UK has made some progress between 2019 and 2024. Measures were at least partially implemented in 80% of offshore SACs designated for Annex I habitats – Sandbanks, Reefs and Submarine structures. Site-specific information on management is contained within the MPA conservation advice packages of JNCC's Site Information Centres (SICs) for all the UK's Offshore MPAs. There are now nine national marine plans covering the UK's marine inshore and offshore areas. The plans focus on sustainable management and mitigation of marine industries and activities. These plans are not specific to Annex I habitats and Annex II species but would be expected to provide benefit to these protected features, along with Annex IV species and marine birds.

Offshore benthic habitats face pressures from activities interacting with the sea floor: fishing, OFW, submarine cable-laying, oil and gas activities, and rock dumping. Damage from bottom-towed fishing gear is the most widespread impact on benthic habitats within and outside MPAs. However, since the previous reporting round, existing byelaws have been implemented in offshore SACs in England which restrict fishing activity by limiting the use of bottom-towed gear. Consultations on new measures to exclude certain fishing gears from MPAs to protect benthic habitats in Scotland took place in 2024 and have since been implemented outside of this reporting period. It is too soon to assess how effective recent fisheries management measures have been at reducing impacts on Annex I habitats and their influence on progressing towards FCS. However, given that benthic habitats may take several years to recover, it is difficult to determine recovery, which cannot be guaranteed for habitats that have been impacted for a long time. Use of existing indicators of the extent of physical disturbance to benthic habitats from fisheries will help to monitor the success of these measures. Stronger links between assessment results and decision-making underpinning marine management and planning are required to ensure effectiveness of measures in achieving FCS in the future.

While measures are being implemented to reduce impacts from fishing, other negative impacts from offshore industries within MPAs are likely to continue. The continued issuing of leases for offshore wind development, licences for oil and gas extraction activities, and licences for offshore carbon dioxide storage are likely to impede progress towards achieving FCS for Annex I habitats.

7.5 Conservation status of Annex II, & IV species and the implementation of measures and their effectiveness

The conservation status of Grey Seal is Favourable with stable trends; Harbour Seal is Unfavourable with stable trends. Seal populations are accurately and frequently monitored when they aggregate on land at coastal haul-out sites and at breeding colonies. Cetaceans are much more difficult to monitor and require large-scale systematic and resource intensive monitoring, which has been possible infrequently- approximately decadal. One such survey

has recently provided the necessary data to assess five populations of five species of cetaceans, which was not possible in 2019. Three Annex IV species of dolphin are Favourable with stable trends, including the offshore population of Bottlenose Dolphin. The inshore population of Bottlenose Dolphin, which is on Annex II and has two SACs designated for it, is Favourable but with an unknown trend. Harbour Porpoise - the only Annex II species to have offshore SACs designated for it, are Unfavourable-inadequate, but with stable trends.

The conservation status of the single resident marine reptile species - Leatherback Turtle (Annex IV), is Unknown, due to insufficient data.

The main pressures identified for marine mammals in the UK include fisheries bycatch, anthropogenic sound, chemical pollutants and climate change. Marine turtles face similar threats. Turtles and a majority of cetacean species are very wide-ranging and affected by pressures outside of UK waters. Therefore, the most effective measures to protect marine mammals in the UK and adjacent waters is to mitigate the impact of pressures. The UK is engaged in several MEAs that aid co-operation in protecting marine mammals and turtles when they cross national boundaries.

Since the previous reporting round, in the five offshore SACs designated for Harbour Porpoise, MMO byelaws have been developed that can be used to restrict fishing activities. Work is ongoing in these SACs and in other English MPAs to determine the impact of fishing on the protected species with aims of introducing proportionate management measures, if required.

However, an assessment conducted since 2019 across UK waters and adjacent waters of the northeast Atlantic found fisheries bycatch rates of Harbour Porpoise and Common Dolphin to exceed internationally agreed thresholds. Grey Seal bycatch is also high, but below the threshold. Some progress has been made since 2019, through publication of the UK Marine Wildlife Bycatch Mitigation Initiative, which outlines the UK how the UK will achieve its ambitions to minimise and, where possible, eliminate the bycatch of sensitive marine species. Currently, work is progressing to develop the Regional Bycatch Risk Prioritisation Frameworks which aim to deliver a more coordinated approach to monitoring and minimising bycatch of marine mammals and turtles and other sensitive marine species.

Underwater noise from offshore industries and shipping can potentially have serious impacts on the health of marine mammals, which rely on sound for navigation, foraging and communication. The waters around the UK are noisy and have been getting noisier at least in the North Sea when assessed during 2015–2021. But since 2019, multiple pieces of guidance for industry have been developed by Defra and the SNCBs to help industries reduce marine noise and manage their activities so that their impact on marine mammals is minimal.

The health of marine mammals is also threatened by presence of persistent chemicals, such as PCBs. Recent studies show PCBs are present in all marine mammals' carcasses found stranded on UK beaches. However, levels of PCBs in marine mammals are lower than in the 1970s and 1980s, but still at levels which may impact on the reproductive function of individual animals.

7.6 Maintaining populations of all species of naturally occurring birds and their habitat

Regulation 6A of the Offshore Regulations requires reporting to include 'provisions mentioned in Article 12 of the new Wild Birds Directive', which requires information on the measures taken to:

- maintain populations of naturally occurring birds in the wild (Article 2, Birds Directive), and
- preserve, maintain, or re-establish a sufficient of diversity and area of habitats for all species of naturally occurring birds in the wild (Article 3, Birds Directive).

The results of the assessments in Chapter 3 clearly show that the populations of offshore species are not being 'maintained' (under Birds Directive Article 2): half are of greatest conservation concern and 12 out of 15 species were considered 'threatened' with extinction from the UK.

With regards to preserving, maintaining, or re-establishing a sufficient diversity and area of habitats for all species (see above re. Article 3, Birds Directive), some distinct areas of importance have been identified and designated as SPAs (see above). Conservation Objectives and Advice on operations have been published. For most SPAs, measures have been partially implemented, in as much as projects or plans that may have an impact on the conservation objectives of a site are subject to HRA, but not all unregulated activities have been assessed and/or addressed. The offshore areas of the three English SPAs are to be assessed for Stage 4 MMO byelaws, considering the impacts of fishing on highly mobile species. The inshore areas of these SPAs are already covered by IFCA byelaws.

However, the majority of marine SPAs are inshore and associated with certain seabed habitats on which birds can dive and feed. But in deeper offshore areas, prey on the seabed is usually out of reach. Therefore, the UK offshore marine area, where seabirds feed on or near the surface or below within the water column, effectively represents to them a single large habitat.

Seabirds face a multitude of pressures, those that carry more risk at the colony (see Section 5.10 on HPAI impacts) and those that directly relate to the offshore environment such as incidental bycatch. However, the greatest pressure on seabirds is from climate change, which impacts seabirds across both their terrestrial and marine habitats. It has significantly affected the marine food web and reduced the amount of prey available to seabirds. Climate change will also have more direct effects on the physiology and distribution of seabirds as this century progresses. While it will be impossible to reverse the direct impacts of climate change over this century, the measures described above (Section 6.8) has the potential to build resilience of seabird species and their populations by addressing other pressures on them. This means reducing pressure from fisheries, including extraction of forage fish such as sandeels, mortality from incidental bycatch in fishing gear, and physical disturbance of the seabed (e.g. bottom-trawling fisheries), which affects the habitats of the birds' prey.

Since 2019, new fishing restrictions in MPAs should reduce disturbance to the seabed and the recent the recent UK ban on sandeel fishing will hopefully make more sandeels available to seabirds (Natural England, Cefas & JNCC 2023). There is uncertainty around numbers of seabirds caught as bycatch each year because of unrepresentative monitoring of the UK fleet. Best estimates indicate a few thousand birds caught each year, with Fulmar the most likely offshore species to be affected at the population scale. Initiatives such as Clean Catch and the seabird bycatch action plan in England are expected to help to expand monitoring and mitigation of bycatch during the next reporting period.

A strategic approach to the conservation and recovery of seabird populations has been developed since 2019, leading to the publication of a Seabird Conservation and Recovery Pathway in England, and a Seabird Conservation Action Plan in Scotland. However, Seabirds in the UK are not declining in isolation – their wider populations in the northeast Atlantic are in decline also. The UK has strong relationships with its neighbours through several MEAs and has been collaborating and sharing information and data. This includes several large-scale assessments through OSPAR, which have fed directly into the UKMS. Moving forward in the next reporting period, the UK will play a proactive role in the implementation of the OSPAR Regional Action Plan for marine birds.

References

Anderson, O.R.J., Thompson, D. & Parsons, M. 2022. Seabird bycatch mitigation: evidence base for possible UK application and research. *JNCC Report 717*. JNCC, Peterborough, ISSN 0963-8091. Available from: https://hub.jncc.gov.uk/assets/dbed3ea2-1c2a-40cf-b0f8-437372f1a036

Anderson Hansen, K., Hernandez, A., Mooney, T.A., Rasmussen, M.H., Sørensen, K. & Wahlberg, M. 2020. The common murre (*Uria aalge*), an Auk seabird, reacts to underwater sound. *The Journal of the Acoustical Society of America*, **147**(6), 4069-4074.

Avila, I.C., Kaschner, K. & Dormann, C.F. 2018. Current global risks to marine mammals: taking stock of the threats. *Biological Conservation*, **221**, 44-58.

Banks, A., Blyth-Skyme, V., Elliott, J., Hodgkiss, R., Jones, R., Kober, K., Rogerson, K., Smibert, L., Walker, P., Ziemann, J. 2024. English Seabird Conservation and Recovery Pathway. *Natural England Technical Information Note*. TIN 218.

Baudouin, M., & Claro, F. 2020. An overview of anthropogenic impacts on Loggerhead (*Caretta caretta*) and Leatherback (*Dermochelys coriacea*) turtles; measures and strategies for prevention in the OSPAR area-Scoping study. *UMS PatriNat, Muséum National d'Histoire Naturelle, Paris*, 30pp. OSPAR POSH document (2019).

Bayley, D. & Ridgeway, A. 2013. Progress towards completion of the UK network of marine Special Areas of Conservation for Annex I qualifying features. *JNCC Committee Paper JNCC 13 P03.* Joint Nature Conservation Committee, Peterborough. Available from: https://data.jncc.gov.uk/data/ab711067-5fc2-43f4-b690-4d6f277d5346/Progress-towards-SAC-network-Comm13P03-v1.1-web.pdf

Boisseau, O., McGarry, T., Stephenson, S., Compton, R., Cucknell, A.C., Ryan, C., McLanaghan, R. & Moscrop, A. 2021. Minke Whales *Balaenoptera acutorostrata* avoid a 15 kHz acoustic deterrent device (ADD). *Marine Ecology Progress Series*, **667**, 191-206.

Bolton, M. & Deakin, Z. 2023. *Leach's Storm-Petrel.* In**.** Burnell, D., Perkins, A.J., Newton, S.F., Bolton, M., Tierney, T.D. & Dunn, T.E. 2023. Seabirds Count: A census of breeding seabirds in Britain and Ireland (2015–2021). *Cerdanyola del Vallès: Lynx Nature Books*.

Botterell, Z.L., Penrose, R., Witt, M.J. & Godley, B.J. 2020. Long-term insights into marine turtle sightings, strandings and captures around the UK and Ireland (1910–2018). *Journal of the Marine Biological Association of the United Kingdom*, **100**(6), 869-877.

Burnell, D., Perkins, A.J., Newton, S.F., Bolton, M., Tierney, T.D. & Dunn, T.E. 2023. Seabirds Count: A census of breeding seabirds in Britain and Ireland (2015–2021). *Cerdanyola del Vallès: Lynx Nature Books*.

Burger, C., Schubert, A., Heinänen, S., Dorsch, M., Kleinschmidt, B., Žydelis, R., Morkunas, J., Quillfeldt, P. & Nehls, G. 2019. A novel approach for assessing effects of ship traffic on distributions and movements of seabirds. *Journal of Environmental Management,* **251**, 109511.

Burthe, S., Daunt, F., Butler, A., Elston, D.A., Frederiksen, M., Johns, D., Newell, M., Thackeray, S.J. & Wanless, S. 2012. Phenological trends and trophic mismatch across multiple levels of a North Sea pelagic food web. *Marine Ecology Progress Series,* **454,** 119–133.

Busch, M. & Garthe, S. 2018. Looking at the bigger picture: the importance of considering annual cycles in impact assessments illustrated in a migratory seabird species. *ICES Journal of Marine Science*, **75**, 690-700. https://doi.org/10.1093/icesjms/fsx170.

Camphuysen, C.J., Berrevoets, C.M., Cremers, H.J.W.M., Dekinga, A., Dekker, R., Ens, B.J., Van der Have, T.M., Kats, R.K.H., Kuiken, T., Leopold, M.F. & Van der Meer, J. 2002. Mass mortality of common eiders (*Somateria mollissima*) in the Dutch Wadden Sea, winter 1999/2000: starvation in a commercially exploited wetland of international importance. *Biological conservation*, **106**(3), 303-317.

Carroll, M.J., Bolton, M., Owen, E., Anderson, G.Q.A., Mackley, E. K., Dunn, E.K. & Furness, R.W. 2017. Kittiwake breeding success in the southern North Sea correlates with prior sandeel fishing mortality. *Aquatic Conservation: Marine Freshwater Ecosystems*, **27**(6), 1–12.

Christensen-Dalsgaard, S., Anker-Nilssen, T., Crawford, R., Bond, A., Sigurðsson, G.M., Glemarec, G., Hansen, E.S., Kadin, M., Kindt-Larsen, L., Mallory, M., Merkel, F.R., Petersen, A., Provencher, J. & Bærum, K.M. 2019. What's the catch with lumpsuckers? A North Atlantic study of seabird bycatch in lumpsucker gillnet fisheries. *Biological Conservation,* **240**, 108278.

Christensen Dalsgaard, S., Mattisson, J., Norderhaug, K.M. & Lorentsen, S.H. 2020. Sharing the neighbourhood: assessing the impact of kelp harvest on foraging behaviour of the European shag. *Marine Biology,* **167**, 136.

Clairbaux, M., Mathewson, P., Porter, W., Fort, J., Strøm, H., Moe, B., Fauchald, P., Descamps, S., Helgason, H., Bråthen, V.S., Merkel, B., Anker-Nilssen, T., Bringsvor, I.S., Chastel, O., Christensen-Dalsgaard, S., Danielsen, J., Daunt, F., Dehnhard, N., Erikstad, K.E., Ezhov, A., Gavrilo, M., Krasnov, Y., Langset, M., Lorentsen, S.-H., Newell, M., Olsen, B., Reiertsen, T.K., Systad G.H., Thórarinsson, T.L., Baran, M., 0Cury, P.M., Boyd, I.L., Bonhommeau, S., Anker-Nilssen, T., Crawford, R.J.M., Furness, R.W., Mills, J.A., Murphy, E.J., Österblom, H., Paleczny, M., Piatt, J.F., Roux, J.-P., Shannon, L. & Sydeman, W.J. (2011). Global seabird response to forage fish depletion – one third for the birds. *Science,* **334**, 1703-1706.

Cook, A.S.C.P. & Burton, N.H.K. 2010. A review of the potential impacts of marine aggregate extraction on seabirds. *Marine Environment Protection Fund (MEPF) Project 09/P130*.

Cook, A.S.C.P., Dadam, D., Mitchell, I., Ross-Smith, V.H. & Robinson, R.A. 2014. Indicators of seabird reproductive performance demonstrate the impact of commercial fisheries on seabird populations in the North Sea. *Ecological Indicators,* **38**, 1-11.

Crown Estate. 2023. Offshore Wind Project Listings [online]. Available from: https://www.datocms-assets.com/136653/1752839672-owprojectlisting-june2025.pdf [Accessed 8 September 2025]

DAERA. 2024. Report on the Northern Ireland Inshore Marine Protected Area Network 2019 – 2024: Progress towards establishing an ecologically coherent network of well managed Marine Protected Areas. Available from: https://www.daera-ni.gov.uk/sites/default/files/2024-12/Annex%20A%20-%20Report%20on%20the%20Northern%20Ireland%20Inshore%20Marine%20Protected%20Area%20Network%202019%20-%202024%20_To%20PDF_1.pdf

David, L., Arcangeli, A., Donovan, G., Holcer, D., Lanfredi, C., Airoldi, S., Dhermain, F., Fossi, C., Labach, H., Natoli, A., Pavan, G. & Rosso, M. 2021. Progress report regarding Risso dolphin conservation management plan (CMP) in ACCOBAMS area. Available from: https://accobams.org/wp-content/uploads/2021/09/SC14.Doc16_Progress-Report-CMP-Risso.pdf. [Accessed 07 Nov 2024]

Defra. 2022. Marine Strategy Part Two: UK updated monitoring programmes. Available from: https://assets.publishing.service.gov.uk/media/63a08d10d3bf7f37598edab2/uk-marine-strategy-part-two-monitoring-programmes-2021.pdf

Defra. 2024a. Marine Protected Areas Network Report 2019–2024. Presented to Parliament pursuant to Section 124 of the Marine and Coastal Access Act 2009. Available from: https://www.gov.uk/government/publications/marine-protected-areas-network-report-2019-to-2024

Defra. 2024b. Marine strategy part three: 2025 UK programme of measures. Available from: https://assets.publishing.service.gov.uk/media/67990f039a6dc0352ab341e1/Marine_strategy_part_three_-_2025_UK_programme_of_measures.pdf

Diamond, T., Fayet, A., Fitzsimmons, M., Frederiksen, M., Gilchrist, H.G., Guilford, T., Huffeldt, N.P., Jessopp, M., Johansen, K.L., Kouwenberg, A.L., Linnebjerg, J.F, Major, H.L., McFarlane Tranquilla, L., Mallory, M., Merkel, F.R., Montevecchi W.A., Mosbech, A., Petersen, A. & Grémillet, D. 2021. North Atlantic winter cyclones starve seabirds. *Current Biology,* **31**, 3964-3971

Dias, M.P., Martin, R., Pearmain, E.J., Burfield, I.J., Small, C., Phillips, R.A., Yates, O., Lascelles, B., Garcia Borboroglu, P. & Croxall, J.P. 2019. Threats to seabirds: A global assessment. *Biological Conservation***, 237**, 525–537.

Dierschke, V. 2022. Pilot Assessment of Marine bird bycatch. In: OSPAR, 2023: The 2023 Quality Status Report for the North-East Atlantic. *OSPAR Commission, London.* https://oap-cloudfront.ospar.org/media/filer_public/b3/99/b399a2af-85f5-4d72-a0a3-a64075e209d5/p00855_b5_marine_bird_bycatch_pilot_asssessment_qsr2023.pdf

Dunn, E.K. & Steel, C. 2001. The impact of long-line fishing on seabirds in the north-east Atlantic: recommendations for reducing mortality. *Royal Society for the Protection of Birds/ Joint Nature Conservation Committee, Sandy*.

Durant, J.M., Anker-Nilssen, T. & Stenseth, N.C. 2003. Trophic interactions under climate fluctuations: the Atlantic Puffin as an example. Proceedings. *Biological sciences / The Royal Society,* **270**, 1461–1466.

Eaton M.A., Aebischer N.J., Brown A.F., Hearn R.D., Lock L., Musgrove A.J., Noble D.G., Stroud D.A. & Gregory R.D. 2015. Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds*, **108**, 708-746.

Eerkes-Medrano, D., Fryer, R.J., Cook, K.B. & Wright. P.J. 2017. Are simple environmental indicators of food web dynamics reliable: Exploring the kittiwake–temperature relationship. *Ecological Indicators,* **75**, 36-47.

Fayet, A.L., Clucas, G.V., Anker-Nilssen, T., Syposz, M. & Hansen, E.S. 2021. Local prey shortages drive foraging costs and breeding success in a declining seabird, the Atlantic Puffin. *Journal of Animal Ecology*, **90**(5), 1152-1164.

Feyrer, L.J., Stanistreet, J.E. & Moors-Murphy, H.B. (2024) Navigating the unknown: assessing anthropogenic threats to Beaked Whales, family Ziphiidae. *Royal Society Open Science*, **11**(4), p.240058.

Fliessbach, K.L., Borkenhagen, K., Guse, N., Markones, N., Schwemmer, P. & Garthe, S. 2019. A ship traffic disturbance vulnerability index for Northwest European seabirds as a tool for marine spatial planning. *Frontiers in Marine Science,* **6**, 1-15.

Frederiksen, M., Wanless, S., Harris, M.P., Rothery, P. & Wilson, L.J. 2004. The role of industrial fisheries and oceanographic change in the decline of North Sea black-legged kittiwakes. *Journal of Applied Ecology,* **41**, 1129-1139.

Frederiksen, M., Wright, P.J., Heubeck, M., Harris, M.P., Mavor, R.A. & Wanless, S. 2005. Regional patterns of kittiwake Rissa tridactyla breeding success are related to variability in sandeel recruitment. *Marine Ecology Progress Series,* **300**, 201-211.

Frederiksen, M., Edwards, M., Mavor, R.A. & Wanless, S. 2007. Regional and annual variation in black-legged kittiwake breeding productivity is related to sea surface temperature. *Marine Ecology Progress Series,* **350**, 137–143.

Frederiksen, M., Jensen, H., Daunt, F., Mavor, R.A. & Wanless, S. 2008. Differential effects of a local industrial sand lance fishery on seabird breeding performance. *Ecological Applications*, **18**, 701–710.

Frederiksen, M. 2014. Environmental demography: exploring the links between vital rates and a fluctuating environment. *DSc. Dissertation, Aarhus University Hakkinen*.

Furness, R.W., Wade, H.M. & Masden, E.A. 2013. Assessing vulnerability of marine bird populations to offshore wind farms. *Journal of Environmental Management,* **119**, 56-66.

García-Barón, I., Santos, M.B., Uriarte, A., Inchausti, J.I., Escribano, J.M., Albisu, J., Fayos, M., Pis-Millán, J.A., Oleaga, Á., Alonso Mier, F.E., Hernández, O., Moreno, O. & Louzao, M. 2019. Which are the main threats affecting the marine megafauna in the Bay of Biscay? *Continental Shelf Research,* **186**, 1-12.

Garzon, F., Barrientos, C., Anvene, R.E., Mba, F.E., Fallabrino, A., Formia, A., Godley, B.J., Gonder, M.K., Prieto, C.M., Ayetebe, J.M. & Metcalfe, K. 2023. Spatial ecology and conservation of Leatherback Turtles (*Dermochelys coriacea*) nesting in Bioko, Equatorial Guinea. *Plos one*, **18**(6), p.e0286545.

Geelhoed, S.C.V., Authier, M., Pigeault, R. & Gilles, A. 2022. Abundance and Distribution of Cetaceans. In: OSPAR, 2023: The 2023 Quality Status Report for the Northeast Atlantic. *OSPAR Commission, London*. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/abundance-distribution-cetaceans/

Harris, M. P., Albon, S.D., Newell, M.A., Gunn, C., Daunt, F. & Wanless, S. 2022. Long-term within-season changes in the diet of Common Guillemot (*Uria aalge*) chicks at a North Sea colony: implications for dietary monitoring. *Ibis,* **164**, 1243-1251.

Harris, S.J., Baker, H., Balmer, D.E., Bolton, M., Burton, N.H.K., Caulfield, E., Clarke, J.A.E., Dunn, T.E., Evans, T.J., Hereward, H.R.F., Humphreys, E.M., Money, S. & O'Hanlon, N.J. 2024. Seabird Population Trends and Causes of Change: 1986–2023. *British Trust for Ornithology*, *Thetford, Norfolk.*

Hennicke, J., Blanchard, S., Chaniotis, P., Cornick, L., Hauswirth, M., Schellekens, T., Vonk, S., & Werner, T. 2022. Report and assessment of the status of the OSPAR network of Marine Protected Areas in 2021. In: OSPAR, 2023: The 2023 Quality Status Report for the North-East Atlantic. *OSPAR Commission, London*. Available from: https://oap.ospar.org/en/ospar-assessments/committee-assessments/biodiversity-committee/status-ospar-network-marine-protected-areas/assessment-reports-mpa/mpa-2021

Hiddink, J.G., Burrows, M.T. & Molinos, J.G. 2015. Temperature tracking by North Sea benthic invertebrates in response to climate change. *Global Change Biology*, **21**(1), 117–129.

Hin, V., Harwood, J. & de Roos, A.M. 2021. Density dependence can obscure nonlethal effects of disturbance on life history of medium-sized cetaceans. *PLoS One*, **16**(6), p.e0252677.

Hin, V., De Roos, A.M., Benoit-Bird, K.J., Claridge, D.E., DiMarzio, N., Durban, J.W., Falcone, E.A., Jacobson, E.K., Jones-Todd, C.M., Pirotta, E. & Schorr, G.S. 2023. Using individual-based bioenergetic models to predict the aggregate effects of disturbance on populations: A case study with Beaked Whales and Navy sonar. *PLoS one*, **18**(8), p.e0290819.

HMC. 2025. Review and Evaluation of the Marine Protected Area networks in England and Northern Ireland: A report commissioned by the Office for Environmental Protection. Available from: https://www.theoep.org.uk/sites/default/files/investigations-files/MPA%20Review%20and%20Evaluation_FINAL.pdf

Hoppit, G. & Schmidt, D. 2022. A Regional View of the Response to Climate Change: A Meta-Analysis of European Benthic Organisms' Responses. *Frontiers in Marine Science,* **9**, 896157.

Howells, R.J., Burthe, S.J., Green, J.A., Harris, M.P., Newell, M.A., Butler, A., Wanless, S. & Daunt, F. 2018. Pronounced long-term trends in year-round diet composition of the European shag *Phalacrocorax aristotelis*. *Marine Biology,* **165**, 188.

Hughes, R. & Perkins, A.J. 2023. *European Storm- Petrel. In.* Burnell, D., Perkins, A.J., Newton, S.F., Bolton, M., Tierney, T.D. & Dunn, T.E. 2023. Seabirds Count: A census of breeding seabirds in Britain and Ireland (2015–2021). *Cerdanyola del Vallès: Lynx Nature Books*.

IAMMWG. 2015. Management Units for cetaceans in UK waters (January 2015). *JNCC Report 547, JNCC Peterborough*. ISSN 0963-8091. https://jncc.gov.uk/resources/f07fe770-e9a3-418d-af2c-44002a3f2872

IAMMWG. 2023. Review of Management Unit boundaries for cetaceans in UK waters (2023). *JNCC Report 734, JNCC, Peterborough*, ISSN 0963-8091. https://jncc.gov.uk/resources/b48b8332-349f-4358-b080-b4506384f4f7

ICES. 2013. Report of the Workshop to Review and Advise on Seabird Bycatch (WKBYCS), 14–18 October 2013, Copenhagen, Denmark. *ICES CM 2013/ACOM,* **77,** 79.

Jenssen, B.M. 1994. Effects of oil pollution, chemically treated oil, and cleaning on thermal balance of birds. *Environmental Pollution,* **86**, 207-215.

Jepson, P.D., Deaville, R., Barber, J.L., Aguilar, À., Borrell, A., Murphy, S., Barry, J., Brownlow, A., Barnett, J., Berrow, S. & Cunningham, A.A. 2016. PCB pollution continues to impact populations of orcas and other dolphins in European waters. *Scientific reports*, **6**(1), 1-17.

JNCC. 2001. The UK SPA network: its scope and content Volume 1: Rationale for the selection of sites. *JNCC, Peterborough*. ISBN 1 86107 529 4. Available from: https://data.jncc.gov.uk/data/3634580a-cabc-4218-872f-8660a1760ad8/uk-spa-vol1-web.pdf

JNCC. 2022. Marine pressures-activities database (PAD) v1.5 [online]. Available from: https://jncc.gov.uk/resources/97447f16-9f38-49ff-a3af-56d437fd1951 [Accessed 8 January 2025]

Johnston, A., Cook, A.S., Wright, L.J., Humphreys, E.M. & Burton, N.H. 2014. Modelling flight heights of marine birds to more accurately assess collision risk with offshore wind turbines. *Journal of Applied Ecology,* **51**, 31–41.

Johnston, A. & Cook, A. 2016. How high do birds fly? Development of methods and analysis of digital aerial data of seabird flight heights. *BTO Research Report No. 676*.

Kelsey, E.C., Felis, J.J., Czapanskiy, M., Pereksta, D.M. & Adams, J. 2018. Collision and displacement vulnerability to offshore wind energy infrastructure among marine birds of the Pacific Outer Continental Shelf. *Ibis*, **148**, 90-109.

King, S. 2019. Seabirds: collision. In: Perrow, M.R. (ed), Wildlife and Wind Farms, Conflicts and Solutions, Vol. 3 Offshore: Potential Effects, 206-234. *Pelagic Publishing, Exeter*.

Kingston, A., Thomas, L. & Northridge, S. 2021. Annual report on the implementation of Council Regulation (EC) No 812/2004 during 2019. *Report to Defra and the European Commission.* Available from: http://randd.defra.gov.uk/Document.aspx?Document=15193_2019BMPAnnualReport.pdf

Kober, K., Clarke, E., Kingston, A., Ribeiro Santos, A., Balestri, E., Coull, K., Anderson, O. & Parsons, M. 2024. Gap analysis on the monitoring of marine bird bycatch by British vessels – Report to the Department for Environment, Food & Rural Affairs. *JNCC Report 761. JNCC, Peterborough*, ISSN 0963-8091. Available from: https://hub.jncc.gov.uk/assets/419e4128-c099-4be3-ae3e-35b313a59561

Kühn, S., Van Franeker, J.A. & Van Loon, W. 2022. Plastic Particles in Fulmar Stomachs in the North Sea. In: OSPAR, 2023: The 2023 Quality Status Report for the Northeast Atlantic. *OSPAR Commission, London*. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/plastic-in-fulmar/

Laloë, J.O. & Hays, G.C. 2023. Can a present-day thermal niche be preserved in a warming climate by a shift in phenology? A case study with sea turtles*. Royal Society Open Science*, **10**(2), 221002.

Leaper, R., MacLennan, E., Brownlow, A., Calderan, S.V., Dyke, K., Evans, P.G., Hartny-Mills, L., Jarvis, D., McWhinnie, L., Philp, A. & Read, F.L. 2022. Estimates of humpback and minke whale entanglements in the Scottish static pot (creel) fishery. *Endangered Species Research*, **49**, 217-232.

Marine Directorate. 2024. Marine Protected Area network: 2024 report to the Scottish Parliament. Available from: https://jncc.gov.uk/our-work/mpa-network-assessments/

Martin, E., Banga, R. & Taylor, N.L. 2023. Climate change impacts on marine mammals around the UK and Ireland. *MCCIP Science Review*, **22**.

Mashkour, N., Jones, K., Kophamel, S., Hipolito, T., Ahasan, S., Walker, G., Jakob-Hoff, R., Whittaker, M., Hamann, M., Bell, I. & Elliman, J. 2020. Disease risk analysis in sea turtles: A baseline study to inform conservation efforts. *PloS one*, **15**(10), p.e0230760.

Matear, L., Vina-Herbon, C., Woodcock, K.A., Duncombe-Smith, S.W., Smith, A.P., Schmitt, P., Kreutle, A., Marra, S., Curtis, E.J. & Baigent, H.N. 2023. Extent of Physical Disturbance to Benthic Habitats: Fisheries. In: OSPAR, 2023: The 2023 Quality Status Report for the Northeast Atlantic. *OSPAR Commission, London*. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/phys-dist-habs-fisheries/

Megson, D., Brown, T., Jones, G.R., Robson, M., Johnson, G.W., Tiktak, G.P., Sandau, C.D. & Reiner, E.J. 2022. Polychlorinated biphenyl (PCB) concentrations and profiles in marine mammals from the North Atlantic Ocean. *Chemosphere*, **288**, p.132639.

Mendel, B., Kotzerka, J., Sommerfeld, J., Schwemmer, H., Sonntag, N. & Garthe, S. 2014. Effects of the alpha ventus offshore test site on distribution patterns, behaviour and flight heights of seabirds, in: *Ecological Research at the Offshore Windfarm Alpha Ventus: Challenges, Results and Perspectives*. 95–110. https://doi.org/10.1007/978-3-658-02462-8_11

Mendel, B., Schwemmer, P., Peschko, V., Müller, S., Schwemmer, H., Mercker, M. & Garthe, S. 2019. Operational offshore wind farms and associated ship traffic cause profound changes in distribution patterns of Loons (*Gavia spp.*). *Journal of Environmental Management,* **231**, 429-438.

Merchant, N.D., Kinneging, N. & Liebschner, A. 2022a. Distribution of Reported Impulsive Sounds in the Sea. In: OSPAR, 2023: The 2023 Quality Status Report for the Northeast Atlantic. *OSPAR Commission, London*. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/distribution-reported-impulsive-sounds-sea/

Merchant, N.D., Kinneging, N. & Liebschner, A. 2022b. Risk of Impact from Anthropogenic Impulsive Sound. In: OSPAR, 2023: The 2023 Quality Status Report for the Northeast Atlantic. *OSPAR Commission, London*. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/risk-impact-anthropogenic-sound

Merkel, F.R. & Johansen, K.L. 2011. Light-induced bird strikes on vessels in Southwest Greenland. *Marine Pollution Bulletin,* **62**, 2330-2336.

Miles, J., Parsons, M. & O'Brien, S. 2020. Preliminary assessment of seabird population response to potential bycatch mitigation in the UK-registered fishing fleet (Report prepared for the Department of Environmental Food and Rural Affairs No. Project Code ME6024). *Joint Nature Conservation Committee*.

Minoia, L., Consales, G., Mazzariol, S., Mancusi, C., Terracciano, G., Ceciarini, I., Capanni, F., Neri, A., D'Agostino, A. & Marsili, L. 2023. Preliminary assessment of persistent organic pollutants (POPs) in tissues of Risso's Dolphin (*Grampus griseus)* specimens stranded along the Italian coasts. *Marine Pollution Bulletin*, **186**, p.114470.

Mitchell, I., Daunt, F., Frederiksen, M. & Wade, K. 2020. Impacts of climate change on seabirds, relevant to the coastal and marine environment around the UK. *MCCIP Science Review 2020*, 382–399.

Mitchell, I., Kenworthy, J., Baulch, V., Cook, H., Martin, E. & Hardy, S. (2026) Offshore Regulations General Implementation Report for the Reporting period 2019-2024 - UK Offshore Marine Area. *JNCC Report 812A*. JNCC, Peterborough, ISSN 0963-8091. https://hub.jncc.gov.uk/assets/e858173d-a762-4fbe-9e28-83a06e91fafe

Moore, P. & Smale, D. 2020. Impacts of climate change on shallow and shelf subtidal habitats relevant to the coastal and marine environment around the UK. *MCCIP Science Review 2020*, 272–292.

Natural England, Cefas & JNCC. 2023. What are the ecosystem risks and benefits of full prohibition of industrial Sandeel fishing in the UK waters of the North Sea (ICES Area IV)? Defra request for advice. Available from: https://assets.publishing.service.gov.uk/media/64070d1ae90e0740d3cd6f85/What_are_the_ecosystem_risks_and_benefits_of_full_prohibition_of_industrial_Sandeel_fishing_in_the_UK_waters_of_the_North_Sea__ICES_Area_IV_.pdf

Natural England. 2025. Seabed Infrastructure in Marine Protected Areas with Designated Subtidal Sandbanks. *Natural England Commissioned Report NECR550*. Available from: https://publications.naturalengland.org.uk/file/5861933285376000

Northridge, S.P., Kingston, A.R. & Thomas, L.J. 2016. Annual Report on the Implementation of Council Regulation (EC) No 812/2004 during 2015.

Northridge, S., Kingston, A. & Coram, A. 2020. Preliminary estimates of seabird bycatch by UK vessels in UK and adjacent waters. DEFRA Report ME6024. *Scottish Ocean Institute, University of St Andrews*

Northridge, S., Kingston, A. & Coram, A. 2023. Regional seabird bycatch hotspot analysis *JNCC Report 726*. JNCC, Peterborough, ISSN 0963-8091 https://hub.jncc.gov.uk/assets/a00403c7-6f56-4f38-8b57-b2ab1859c564

O'Hanlon, N.J., Bond, A.L., Lavers, J.L., Masden, E.A. & James, N.A. 2019. Monitoring nest incorporation of anthropogenic debris by Northern Gannets across their range. *Environmental Pollution,* **255**, 113152.

Oliveira, N., Henriques, A., Miodonski, J., Pereira, J., Marujo, D., Almeida, A., Barros, N., Andrade, J., Marçalo, A., Santos, J., Oliveira, I.B., Ferreira, M., Araújo, H., Monteiro, S., Vingada, J. & Ramírez, I. 2015. Seabird bycatch in Portuguese mainland coastal fisheries: An assessment through on-board observations and fishermen interviews. *Global Ecology and Conservation,* **3**, 51-61.

OSPAR. 2023a. Benthic Habitats Thematic Assessment. In: OSPAR, 2023: Quality Status Report 2023. *OSPAR Commission, London*. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/benthic-habitats/

OSPAR. 2023b. Human Activities Thematic Assessment. In: OSPAR, 2023: Quality Status Report 2023. OSPAR Commission, London. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/human-activities

OSPAR. 2023c. Underwater Noise Thematic Assessment. In: OSPAR, 2023: Quality Status Report 2023. OSPAR Commission, London. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/underwater-noise

OSPAR. 2023d. Marine Birds Thematic Assessment. In: OSPAR, 2023: Quality Status Report 2023. OSPAR Commission, London. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/marine-birds/

OSPAR. 2023e. Marine Mammals Thematic Assessment. In: OSPAR, 2023: Quality Status Report 2023. OSPAR Commission, London. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/marine-mammals/

OSPAR Commission. 2025. CEMP Guideline for the Management Effectiveness of Protected and Conserved Areas (MEPCA) indicator. OSPAR Agreement 2025-11. Available from: https://www.ospar.org/documents?v=63715

Pearce-Higgins, J.W., Davies, J.G. & Humphreys, E.M. 2021. Species and habitat climate change adaptation options for seabirds within the INTERREG VA area. Report to Agri-Food and Biosciences Institute and Marine Scotland Science as part of the Marine Protected Area Management and Monitoring (MarPAMM) project.

Penrose, R.S. & Westfield, M.J.B. 2023. British & Irish Marine Turtle Strandings & Sightings Annual Report 2022. Available from: https://strandings.com/wp-content/uploads/simple-file-list/2022-Turtle-Stranding-Report.pdf

Peschko, V., Mendel, B., Müller, S., Markones, N., Mercker, M. & Garthe, S. 2020. Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season. *Marine Environmental Research*, **162**, 105157.

Pidduck, E., Jones, R., Daglish, P., Farley, A., Morley, N., Page, A. & Soubies, H. 2017. Identifying the possible impacts of rock dump from oil and gas decommissioning on Annex I mobile sandbanks. *JNCC Report 603*. JNCC, Peterborough. https://jncc.gov.uk/resources/54e00371-b431-43fa-96d5-44c45af63414

Pinzone, M., Parmentier, K., Siebert, U., Gilles, A., Authier, M., Brownlow, A., Caurant, F., Das, K., Galatius, A., Geelhoed , S., Hernández Sánchez, M.T., Mendez-Fernandez, P., Murphy, S., Persson, S., Roos, A., van den HeuvelGreve, M. & Vinas, L. 2022. Pilot Assessment of Status and Trends of persistent chemicals in marine mammals. In: OSPAR, 2023: The 2023 Quality Status Report for the North-East Atlantic. OSPAR Commission, London. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/pcb-marinemammals-pilot

Plint, T., ten Doeschate, M.T., Brownlow, A.C., Davison, N.J., Hantke, G., Kitchener, A.C., Longstaffe, F.J., McGill, R.A., Simon-Nutbrown, C. & Magill, C.R. 2023. Stable isotope ecology and interspecific dietary overlap among dolphins in the Northeast Atlantic. *Frontiers in Marine Science*, **10**, 1111295.

Pollet. I.L., Ronconi, R.A., Jonsen, I.D., Leonard, M.L., Taylor, P.D. & Shutler, D. 2014. Foraging movements of Leach's Storm-Petrels *Oceanodroma leucorhoa. Journal of Avian Biology*, **45**(4), 305-314.

Potiek, A., Collier, M.P., Schekkerman H. & Fijn, R.C. 2019. Effects of turbine collision mortality on population dynamics of 13 bird species. *Bureau Waardenburg Report 18-342*. Bureau Waardenburg, Culemborg.

Pott, C. & Wiedenfeld, D.A. 2017. Information gaps limit our understanding of seabird bycatch in global fisheries. *Biological Conservation*, **210**, 192-204.

Reverberi, M. 2023. The non-silent world: acoustic responses of White-beaked Dolphins (*Lagenorhynchus albirostris*) to changes in maritime traffic: a case study during the covid-19 anthropause in Skjálfandi Bay, Iceland (Doctoral dissertation). Available from: https://skemman.is/bitstream/1946/45856/1/CMMThesis_MathieuReverberi.pdf [Accessed 07 Nov 2024]

Reyes-López, M.A., Camacho-Sánchez, F.Y., Hart, C.E., Leal-Sepúlveda, V., Zavala-Félix, K.A., Ley-Quiñónez, C.P., Aguirre, A.A. & Zavala-Norzagaray, A.A. 2021. Rediscovering kemp's ridley sea turtle (*Lepidochelys kempii*): molecular analysis and threats. In Natural history and ecology of Mexico and Central America. IntechOpen.

Reiertsen, T.K., Layton-Matthews, K., Erikstad, K.E., Hodges, K., Ballesteros, M., Anker-Nilssen, T., Barrett, R.T., Benjaminsen, S., Christensen-Dalsgaard, S., Daunt, F., Dehnhard, N., Harris, M.P., Langset, M., Lorentsen, S-H., Sandøy-Braathen, V., Støyle-Bringsvor, I., Systad, G.H. & Wanless, S. 2021. Inter-population synchrony in adult survival and effects of climate and extreme weather in non-breeding areas of Atlantic Puffins. *Marine Ecology Progress Series,* **676**, 219-231.

Rijnsdorp, A. Hiddink, J. van Denderen, P. Hintzen, N. Eigaard, O. Valanko, S. Bastardie, F. Bolam, S. Boulcott, P. Egekvist, J. Garcia, C. van Hoey, G. Jonsson, P. Laffargue, P. Nielsen, J. Piet, G. Sköld, M. & van Kooten, T. 2020. Different bottom trawl fisheries have a differential impact on the status of the North Sea seafloor habitats. *ICES Journal of Marine Science*, **77(5),** 1772–1786. https://doi.org/10.1093/icesjms/fsaa050

Ross, A. 2003. Cetacean bycatch in pelagic trawl fisheries in the Celtic Sea, Biscay, Channel area - a case for emergency action (AC10/Doc.19 O). Bonn, Germany, (unpublished); 10.

Russell, D.J., Wanless, S., Collingham, Y.C., Huntley, B. & Hamer, K.C. 2015. Predicting future European breeding distributions of British seabird species under climate change and unlimited/no dispersal scenarios. *Diversity*, **7(4),** 342-359.

Scottish Government. 2024. Marine Protected Area Network 2024 Report to the Scottish Parliament. December 2024. Available from: https://www.gov.scot/publications/marine-protected-area-network-2024-report-scottish-parliament/documents/

Scottish Government. 2025. The Scottish Seabird Conservation Action Plan: Safeguarding our Seabirds' Future. Available from: https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2025/08/scottish-seabird-conservation-action-plan-2/documents/scottish-seabird-conservation-action-plan/scottish-seabird-conservation-action-plan/govscot%3Adocument/scottish-seabird-conservation-action-plan.pdf

Searle, K.R., Mobbs, D.C., Butler, A., Furness, R.W., Trinder, M.N. & Daunt, F. 2018. Finding out the fate of displaced birds. *Scottish Marine and Freshwater Science*, **9(8),** 2043-7722.

Snell, M., Baillie, A., Berrow, S., Deaville, R., Penrose, R., Perkins, M., Williams, R. & Simmonds, M.P. 2023. An investigation into the effects of climate change on baleen whale distribution in the British Isles. *Marine Pollution Bulletin*, **187**, p.114565.

Stanbury, A., Brown, A., Eaton, M., Aebischer, N., Gillings, S., Hearn, R., Noble, D., Stroud, D. & Gregory, R. 2017. 'The risk of extinction for birds in Great Britain'. *British Birds*, **110(9)**, 502-517.

Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N. Noble, D.G. & Win, I. 2021. 'The status of our bird populations: The fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain'. *British Birds*, **114**, 723–747.

Stanbury, A., Burns, F., Aebischer, N., Burnell, D., Baker, H., Balmer, D., Brown, A., Dunn, T., Lindley, P., Murphy, M., Noble, D., Owens, R. & Quinn L. 2024. The status of UK's breeding seabirds: an addendum to the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds,* **117**, 471-487.

Stone, C., Hall, K., Mendes, S. & Tasker, M. 2017. The effects of seismic operations in UK waters: analysis of Marine Mammal Observer data. *Journal of Cetacean Research and Management*. **16**, 71-85.

Stylos, A., Akritopoulou, E., Bertulli, C.G., Lohrengel, K., McGinty, N., Moutopoulos, D.K. & Evans, P.G. 2022. Prevalence and spatio-temporal variation of epidermal conditions, deformities and injuries in common Bottlenose Dolphins (Tursiops truncatus) in Welsh waters. *Mammalian Biology*, **102(4),** 1565-1587.

Taylor, N., Authier, M., Banga, R., Genu, M. & Gilles, A. 2022. Marine mammal by-catch. OSPAR, 2023: the 2023 quality status report for the Northeast Atlantic. Available from: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-mammal-bycatch/ [Accessed 07 Nov 2024]

Tillin, H.M., Hull, S.C. & Tyler-Walters, H. 2010. Development of a Sensitivity Matrix (pressures-MCZ/MPA features). Report to the Department of Environment, Food and Rural Affairs from ABPMer, Southampton and the Marine Life Information Network (MarLIN) Plymouth: Marine Biological Association of the UK. Defra Contract No. MB0102 Task 3A, Report No. 22.

Thorne, L.H. & Nye, J.A. 2021. Trait-mediated shifts and climate velocity decouple an endothermic marine predator and its ectothermic prey. *Scientific reports*, **11(1),** p.18507.

Tremlett, C.J., Cleasby, I.R., Bolton, M. & Wilson, L.J. 2024. Declines in UK breeding populations of seabird species of conservation concern following the outbreak of high pathogenicity avian influenza (HPAI) in 2021–2022. *Bird Study*, **71(4),** 293–310. https://doi.org/10.1080/00063657.2024.2438641

Trigg, L.E., Chen, F., Shapiro, G.I., Ingram, S.N., Vincent, C., Thompson, D., Russell, D.J., Carter, M.I. & Embling, C.B. 2020. Predicting the exposure of diving grey seals to shipping noise. *The Journal of the Acoustical Society of America*, **148(2),** 1014-1029.

Tyler-Walters, H., Tillin, H.M., d'Avack, E.A.S., Perry, F., & Stamp, T. 2018. Marine Evidence-based Sensitivity Assessment (MarESA) – A Guide. *Marine Life Information Network (MarLIN). Marine Biological Association of the UK, Plymouth*, 91. Available from: https://www.marlin.ac.uk/publications

UKMS. 2024a. Extent of Physical Disturbance to Benthic Habitats: Fisheries with mobile bottom-contacting gears. UK Marine Strategy Benthic Habitats 2024 assessment. Available from: https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/benthic-habitats/extent-of-physical-disturbance-to-benthic-habitats-fishing-mobile-gears/

UKMS. 2024b. Benthic habitats. The extent to which Good Environmental Status has been achieved. Available from: https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/benthic-habitats/

UKMS. 2024c. Underwater noise. The extent to which Good Environmental Status has been achieved. Available from: https://moat.cefas.co.uk/pressures-from-human-activities/underwater-noise/

Wang, L., Nabi, G., Yin, L., Wang, Y., Li, S., Hao, Z. & Li, D. 2021. Birds and plastic pollution: recent advances. *Avian Research*, **12(1),** 1-9.

Wanless, S., Harris, M.P.,Newell, M.A., Speakman, J.R. & Daunt, F. 2018. Community-wide decline in the occurrence of lesser sandeels Ammodytes marinus in seabird chick diets at a North Sea colony. *Marine Ecology Progress Series*, **600**, 193-206.

Webb, K., Griffiths, Y. & Proudfoot, R. 2024. The U.K. Marine Biodiversity Monitoring Programme: Development of advice on future monitoring (2019). *JNCC Report 765*, JNCC, Peterborough, ISSN 0963-8091.

Welsh Government. 2019. Marine and Coastal Access Act 2009: Report to the National Assembly for Wales on Marine Protected Areas in Wales. Available from: https://www.gov.wales/sites/default/files/publications/2019-01/report-on-marine-protected-areas-mpas-2019.pdf

Welsh Government. 2025. Report To The Senedd Cymru | Welsh Parliament On The Marine Protected Areas (MPAs) In Wales. Available from: https://senedd.wales/media/dd0bvfob/gen-ld17000-e.pdf

Williams, R.S., Brownlow, A., Baillie, A., Barber, J.L., Barnett, J., Davison, N.J., Deaville, R., Ten Doeschate, M., Murphy, S., Penrose, R. & Perkins, M. 2023. Spatiotemporal trends spanning three decades show toxic levels of chemical contaminants in marine mammals. *Environmental Science & Technology*, **57(49),** 20736-20749.

Williamson, M.J., ten Doeschate, M.T.I., Deaville, R., Brownlow, A.C. & Taylor, N.L. 2021. Cetaceans as sentinels for informing climate change policy in UK waters. *Marine Policy*, **131**, 104634. https://doi.org/10.1016/j.marpol.2021.104634

Žydelis, R., Small, C. & French, G. 2013. The incidental catch of seabirds in gillnet fisheries: A global review. *Biological Conservation*, **162**, 76-88.

Glossary

Term	Definition
AEoSI	Adverse Effect on Site Integrity
Annex I bird species	Species listed in Annex I of the Birds Directive at the point of EU Exit and transposed to the Habitats Regulations and Offshore Regulations.
Annex I habitats	Habitats listed in Annex I of the Habitats Directive at the point of EU Exit and transposed to the Habitats Regulations and Offshore Regulations.
Annex II, IV, and V species	Species (not including birds) listed in Annex II and European protected species listed in IV and V of the Habitats Directive at the point of EU Exit and transposed to the Habitats Regulations and Offshore Regulations: Annex II species requiring designation of Special Areas of Conservation, Annex IV species in need of strict protection, and Annex V species in which member countries may decide for themselves how to manage the population.
ASCOBANS	Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas – a subsidiary agreement under CMS
Benthic habitats	Pertaining to the seafloor environment. Benthic habitats include communities of seaweeds, plants and animals living on or within the seabed
Biogenic reef	A reef formed of hard structures created by living animals as opposed to stone
Birds Directive	Wild Birds Directive (2009/147/EC)
Cefas	Centre for Environment, Fisheries and Aquaculture Science
Cetaceans	Whales, dolphins and porpoises
COWSC	Collaboration on Offshore Wind Strategic Compensation
CMS	Convention on Migratory Species
DESNZ	Department for Energy Security and Net Zero
EC	European Commission
ESCARP	English Seabird Conservation and Recovery Pathway
Feature	A specific species or habitat reported on in the Habitats Regulations reporting
FCS	Favourable Conservation Status. The overall conservation status based on assessment of feature parameters, trends and condition.
Habitats Directive	Habitats Directive (92/43/EEC)

Term	Definition
Habitats Regulations	Collective term for: • 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) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland.
HPAI	High Pathogenicity Avian Influenza
Inshore	The territorial sea adjacent to the UK up to 12 nautical miles out to sea.
IROPI	Imperative Reasons of Overriding Public Interest
LSE	Likely Significant Effect
LoSCM	Library of Strategic Compensatory Measures
Marine mammals	Seals and cetaceans
Marine birds	All relevant species of bird listed in Annex I of the Birds Directive at the point of EU Exit and all other regularly occurring migratory species in the UK offshore marine area.
MEAs	Multilateral Environmental Agreements
MEPCA indicator	Indicator for measuring Management Effectiveness of Protected and Conserved Areas
Methane-Derived Authigenic Carbonate	Rock-like deposits that form from microbial activity where methane is present in the seabed (often around seeps).
MMO	Marine Management Organisation
MNR	Marine Noise Registry
MPAs	Marine Protected Areas
MRF	Marine Recovery Fund
National Site Network	The UK's network of protected areas comprised of SACs and SPAs
POSEIDON	Planning Offshore Wind Strategic Environmental Impact Decisions project

Term	Definition
UK Offshore marine area	The area beyond 12 nautical miles encompassing the UK's Exclusive Economic Zone and the UK continental shelf. This includes: • any part of the seabed and subsoil situated in any area designated under section 1(7) of the Continental Shelf Act 1964 • any part of the waters within British fishery limits (except the internal waters of, and the territorial sea adjacent to, the United Kingdom, the Channel Islands and the Isle of Man)
OESEA	Offshore Energy Strategic Environmental Assessments
Offshore Regulations	The Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended)
OFW	Offshore wind
OSPAR	The Convention for the protection of the Marine Environment of the north-east Atlantic
OWEAP	Offshore Wind Enabling Actions Programme
OWEC	Offshore Wind Evidence and Change Programme
OWEER	Offshore Wind Environmental Evidence Register
Resident	Species (of marine mammal) that regularly occur in UK waters, either all year round, or seasonally
SACs	Special Areas of Conservation for Annex I habitats and Annex II species (under Habitats Regulations and Offshore Regulations)
SCANS	Small Cetaceans in European Atlantic waters and the North Sea. International survey of cetaceans in European Atlantic waters
SICs	Site Information Centres contain site-specific information on management for all the UK's Offshore MPAs
SPAs	Special Protection Areas for Annex I birds and other regularly occurring migratory species (under Habitats Regulations and Offshore Regulations)
SNCBs	Organisations with a statutory duty to advise and support the four UK Governments on nature: Joint Nature Conservation Committee, Natural England, Natural Resources Wales, NatureScot, the Department of Agriculture, Environment and Rural Affairs (DAERA) statutory advisory body - the Council for Nature Conservation and the Countryside.
UKMS	UK Marine Strategy
Vagrant	Mobile species which appears infrequently or unpredictably in UK waters

Appendix 1 – Legislative Requirements mapping

Table 19: A summary of the legislative requirements for this report, and in what sections each requirement is addressed. Specifically, this table references the articles relevant to measures taken pursuant to Habitats Directive.

Reporting requirement	Report section No.
6(1) For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.	4.1 6 (6.1, 6.2, 6.4, 6.5, 6.6)
6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.	6.4.1 6.4.2 6.5.2
12(1) Member States shall take the requisite measures to establish a system of strict protection for the animal species listed in Annex IV (a) in their natural range, prohibiting: a. all forms of deliberate capture or killing of specimens of these species in the wild; b. deliberate disturbance of these species, particularly during the period of breeding, rearing, hibernation and migration; c. deliberate destruction or taking of eggs from the wild; d. deterioration or destruction of breeding sites or resting places.	6.1 6.2 6.6.3 6.7.1
13(1) Member States shall take the requisite measures to establish a system of strict protection for the plant species listed in Annex IV (b), prohibiting: a. the deliberate picking, collecting, cutting, uprooting or destruction of such plants in their natural range in the wild; b. (b) the keeping, transport and sale or exchange and offering for sale or exchange of specimens of such species taken in the wild, except for those taken legally before this Directive is implemented.	Not applicable to UK offshore
14(1) If, in the light of the surveillance provided for in Article 11, where Member States deem it necessary, they shall take measures to ensure that the taking in the wild of specimens of species of wild fauna and flora listed in Annex V as well as their exploitation is compatible with their being maintained at a Favourable Conservation tatus.	5.1 5.6

Reporting requirement	Report section No.
16(3)e Provided that there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species concerned at a Favourable Conservation tatus in their natural range, Member States may derogate from the provisions of Articles 12, 13, 14 and 15 (a) and (b): e. to allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species listed in Annex IV in limited numbers specified by the competent national authorities.	5.6

Table 20: A summary of the legislative requirements for this report, and in what sections each requirement is addressed. Specifically, this table references the articles relevant to measures taken pursuant to Birds Directive.

Reporting requirement	Report section No.
2 Member States shall take the requisite measures to maintain the population of the species referred to in Article 1 at a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements, or to adapt the population of these species to that level.	6.8 (6.8.2)
3(1) In the light of the requirements referred to in Article 2, Member States shall take the requisite measures to preserve, maintain or reestablish a sufficient diversity and area of habitats for all the species of birds referred to in Article 1.	4.2 6.8
3(2) The preservation, maintenance and re-establishment of biotopes and habitats shall include primarily the following measures: a. creation of protected areas; b. upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones; **c.** re-establishment of destroyed biotopes; creation of biotopes.	4.2
4 (1) The species mentioned in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. In this connection, account shall be taken of: a. species in danger of extinction; b. species vulnerable to specific changes in their habitat; c. species considered rare because of small populations or restricted local distribution; d. other species requiring particular attention for reasons of the specific nature of their habitat. Trends and variations in population levels shall be taken into account as a background for evaluations. Member States shall classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species in the geographical sea and land area where this Directive applies.	4.2 6.8.1

Reporting requirement	Report section No.
4(2) Member States shall take similar measures for regularly occurring migratory species not listed in Annex I, bearing in mind their need for protection in the geographical sea and land area where this Directive applies, as regards their breeding, moulting and wintering areas and staging posts along their migration routes. To this end, Member States shall pay particular attention to the protection of wetlands and particularly to wetlands of international importance.	4.2 6.8
5 Without prejudice to Articles 7 and 9, Member States shall take the requisite measures to establish a general system of protection for all species of birds referred to in Article 1, prohibiting in particular: a. deliberate killing or capture by any method; b. deliberate destruction of, or damage to, their nests and eggs or removal of their nests; c. taking their eggs in the wild and keeping these eggs even if empty; d. deliberate disturbance of these birds particularly during the period of breeding and rearing, in so far as disturbance would be significant having regard to the objectives of this Directive; e. keeping birds of species the hunting and capture of which is prohibited.	6.8

Table 21: A summary of additional legislative requirements for this report, relating to the impacts of measures and contribution of the SPA network, and in what sections each requirement is addressed.

Reporting requirement	Report section No.
The impact of measures taken pursuant to Article 6(1) of the Habitats Directive on the conservation status of Annex I habitats and Annex II species.	6.5.4 6.6.6
The main impacts of measures taken under the Wild Birds Directive.	6.8.4
The contribution of the network of Special Protection Areas to the objectives of the Wild Birds Directive;	4.2

Table 22: A summary of the legislative requirements for this report, relating to the results of the surveillance undertaken and in what sections each requirement is addressed.

Reporting requirement	Report section No.
The main results of surveillance undertaken on the conservation status of Annex I habitats (particularly priority habitats);	3 (3.2)
The main results of surveillance undertaken on the conservation status of Annex II, IV and V species (particularly priority species);	3 (3.3,3.4)
The main results of surveillance undertaken for the purpose of establishing whether the taking and exploitation of Annex V species are compatible with their maintenance at Favourable Conservation Status;	Not required as no hunting for meat – see 2.2
The main results of surveillance of the incidental capture or killing of animals of Annex IV(a) species (including within the offshore marine area where the capture or killing of such animals is incidental to any activity that takes place in those waters).	6.6 6.7

Table 23: A summary of the legislative requirements for this report, relating to the extent to which the offshore has achieved the purposes of the Directives, specifically, and in what sections each requirement is addressed.

Reporting requirement	Report section No.
the maintenance or restoration, at Favourable Conservation status, of Annex I habitats and Annex II, IV and V species.	3 (3.1, 3.2,3.3, 3.4) 6
the maintenance of populations of naturally occurring birds in the wild.	3 (3.1,3.5) 6.8
the preservation, maintenance, or re-establishment of a sufficient diversity and area of habitats for all species of naturally occurring birds in the wild.	6.8

Appendix 2 – OSPAR Management Status Reporting used in the Management Effectiveness of Protected and Conserved Areas (MEPCA) Indicator for the UK in 2025

Table 24: OSPAR Management Status Reporting responses for UK habitats in 2025 (as reported to the OSPAR Convention on the 1 October 2025).

cSAC/SCI/SAC	Country	Feature	Designation year	a) Management documented: Response	b) Measures implemented: Response	c) Monitoring in place: Response	d) Moving towards objectives - Response	e) Moving towards objectives - Confidence score
Anton Dohrn Seamount	Scotland offshore	1170 Reefs	2012	Yes	Partial	No	No	Low
Bassurelle Sandbank	England offshore	1110 Sandbanks which are slightly covered by seawater all the time	2011	Yes	Partial	Partial	No	Low
Braemar Pockmarks	Scotland offshore	1180 Submarine structures made by leaking gases	2008	Yes	Partial	Partial	No	Low
Croker Carbonate Slabs	Wales offshore	1180 Submarine structures made by leaking gases	2012	Yes	Partial	Partial	Yes	Low
Darwin Mounds	Scotland offshore	1170 Reefs	2008	Yes	Yes	Yes	No	Low

cSAC/SCI/SAC	Country	Feature	Designation year	a) Management documented: Response	b) Measures implemented: Response	c) Monitoring in place: Response	d) Moving towards objectives - Response	e) Moving towards objectives - Confidence score
Dogger Bank	England offshore	1110 Sandbanks which are slightly covered by seawater all the time	2011	Yes	Partial	Partial	No	Low
East Rockall Bank	Scotland offshore	1170 Reefs	2012	Yes	Partial	No	No	Low
Haig Fras	England offshore	1170 Reefs	2008	Yes	Partial	Partial	No	Low
Haisborough, Hammond and Winterton	England inshore & England offshore	1110 Sandbanks which are slightly covered by seawater all the time	2011	Yes	Partial	Partial	No	High
Hatton Bank	Scotland offshore	1170 Reefs	2012	Yes	Yes	No	No	Low

cSAC/SCI/SAC	Country	Feature	Designation year	a) Management documented: Response	b) Measures implemented: Response	c) Monitoring in place: Response	d) Moving towards objectives - Response	e) Moving towards objectives - Confidence score
Inner Dowsing, Race Bank and North Ridge	England inshore & England offshore	1110 Sandbanks which are slightly covered by seawater all the time	2011	Yes	Partial	Partial	No	High
North Norfolk Sandbanks and Saturn Reef	England offshore	1110 Sandbanks which are slightly covered by seawater all the time and 1170 Reefs	2011	Yes	Partial	Partial	No	Low
North West Rockall Bank	Scotland offshore	1170 Reefs	2011	Yes	Partial	No	No	Low
Pisces Reef Complex	Northern Ireland offshore	1170 Reefs	2012	Yes	Partial	Partial	Yes	Low
Pobie Bank Reef	Scotland inshore & Scotland offshore	1170 Reefs	2012	Yes	No	Yes	No	Low

cSAC/SCI/SAC	Country	Feature	Designation year	a) Management documented: Response	b) Measures implemented: Response	c) Monitoring in place: Response	d) Moving towards objectives - Response	e) Moving towards objectives - Confidence score
Scanner Pockmark	Scotland offshore	1180 Submarine structures made by leaking gases	2008	Yes	Partial	Partial	No	Low
Solan Bank Reef	Scotland inshore & Scotland offshore	1170 Reefs	2012	Yes	No	Partial	Yes	Low
Stanton Banks	Scotland offshore	1170 Reefs	2008	Yes	No	Partial	No	Low
Wight-Barfleur Reef	England offshore	1170 Reefs	2012	Yes	Partial	Partial	No	Low
Wyville Thomson Ridge	Scotland offshore	1170 Reefs	2011	Yes	No	Partial	No	Low

Table 25: OSPAR Management Status Reporting responses for UK marine mammals in 2025 (as reported to the OSPAR Convention on the 1 October 2025).

cSAC/SCI/SAC	Country	Feature	Designation year	a) Management documented: Response	b) Measures implemented : Response	c) Monitoring in place: Response	d) Moving towards objectives - Response	e) Moving towards objectives - Confidence score
Bristol Channel Approaches / Dynesfeydd Môr Hafren		Harbour Porpoise	2017	Yes	Partial	Partial	Unknown	Low
North Anglesey Marine / Gogledd Môn Forol		Harbour Porpoise	2017	Yes	Partial	Partial	Unknown	Not applicable
North Channel	Northern Ireland inshore & Northern Ireland offshore	Harbour Porpoise	2017	Yes	Partial	Partial	Unknown	Low
Southern North Sea	England inshore & England offshore	Harbour Porpoise	2017	Yes	Partial	Partial	Unknown	Low
West Wales Marine / Gorllewin Cymru Forol	Wales inshore & Wales offshore	Harbour Porpoise	2017	Yes	Partial	Partial	Unknown	Not applicable

Table 26: OSPAR Management Status Reporting responses for UK marine birds in 2025 (as reported to the OSPAR Convention on 1 October 2025).

SPA name	Country	Features (b=breeding season, w=wintering, *inshore)	Year first classified	a) Management documented: Response	b) Measures implemented : Response	c) Monitoring in place: Response	d) Moving towards objectives - Response	e) Moving towards objectives - Confidence score
Outer Firth of Forth and St Andrews Bay Complex	Scotland inshore & Scotland offshore	Common eider (w)* Goldeneye (w)* Long-tailed Duck (w)* Velvet scoter (w)* Common scoter (w)* Red-breasted Merganser (w)* Red-throated diver (w)* Slavonian Grebe (w) Manx Shearwater (b) Northern Gannet (b) European shag (b+w) Common tern (b)* Arctic tern (b)* Black-legged kittiwake (b+w) Herring Gull (b+w) Common Gull (w)* Little Gull (w)* Black-headed Gull (w)* Razorbill (w) Common Guillemot(b+w) Atlantic Puffin (b)	2020	Partial	Partial	Partial	Partial	Low

SPA name	Country	Features (b=breeding season, w=wintering, *inshore)	Year first classified	a) Management documented: Response	b) Measures implemented : Response	c) Monitoring in place: Response	d) Moving towards objectives - Response	e) Moving towards objectives - Confidence score
Seas off Foula	Scotland inshore & Scotland offshore	Northern Fulmar (b+w) European storm-Petrel (b) Great Skua (b+w) Parasitic jaegar (b) Common Guillemot (b+w)	2020	Partial	Partial	Partial	Partial	Moderate
Seas off St Kilda	Scotland inshore & Scotland offshore	Northern Fulmar (b) Northern Gannet (b) European storm-Petrel (b) Common Guillemot (b) Atlantic Puffin (b)	2020	Partial	Partial	Partial	Partial	Moderate
Skomer, Skokholm and the Seas off Pembroke-shire / Sgomer, Sgogwm a Moroedd Penfro	Wales inshore & Wales offshore	European storm-Petrel (b) Manx Shearwater (b) Lesser black-backed Gull (b) Atlantic Puffin (b) Seabird assemblage	1982	Yes	Partial	Partial	Partial	Moderate
Greater Wash	England inshore & England offshore	Common scoter (w)* Red-throated diver (w)* Little Gull (w)* Little tern (b)* Common tern (b)* Sandwich tern (b)*	2018	Partial	Partial	Partial	Unknown	Not applicable

SPA name	Country	Features (b=breeding season, w=wintering, *inshore)	Year first classified	a) Management documented: Response	b) Measures implemented : Response	c) Monitoring in place: Response	d) Moving towards objectives - Response	e) Moving towards objectives - Confidence score
Liverpool Bay / Bae Lerpwl	England inshore & England offshore & Wales inshore	Common scoter (w)* Red-throated diver (w)* Little Gull (w)* Little tern (b)* Common tern (b)* Waterbird assemblage*	2010	Yes	Partial	Partial	Partial	Not applicable
Outer Thames Estuary	England inshore & England offshore	Red-throated diver (w) Little tern (b)* Common tern (b)*	2010	Yes	Partial	Partial	Partial	Moderate
Irish Sea Front	Wales offshore	Manx Shearwater (b)	2017	Yes	Yes	No	Yes	Low