



**JNCC Report 759**

**25 Year Environment Plan Outcome Indicator C6:  
Diverse seas: status of threatened and declining features**

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## Summary

The status of threatened and declining marine features in the UK are reported under various national legislation or international agreements. The C6 indicator, 'Diverse Seas: status of threatened and declining features', is being developed as part of the 25 Year Environment Plan Outcome Indicator Framework. This indicator is designed to quantify the status of vulnerable features flagged for protection by summarising published status assessments.

Initial C6 assessments have been undertaken using UK-relevant information published by two sources: OSPAR's Intersessional Correspondence Group on the Protection of Species and Habitats (ICG-POSH) and the OSPAR Quality Status Report (2023); alongside UK-relevant assessments of marine and coastal features published under the fourth Article 17 UK Habitats Directive Report (2019).

The C6 indicator provides a high-level summary of the status of features listed under these two datasets, focussing on marine features relevant to the UK, presenting status results in terms of the number of listed species under different categories (habitats, marine mammals, marine birds, fish, and reptiles).

In OSPAR regions relevant to the UK, the majority of assessed features listed as threatened and/or declining in the OSPAR QSR (2023) are in Poor status (23 out of 28 features in Region II, and 23 out of 28 features in Region III). Only three features were in Good status across both regions, with the remainder of assessed features having an Unknown status.

In the fourth Article 17 reporting round, for the UK, 17 out of 31 assessed features were in Unfavourable status which included most habitat features. The status for many marine mammal features and the single reptile species were Unknown. The only species in favourable condition was the grey seal.

These statistics will be used to inform biodiversity reporting and commitments under the 25 Year Environment Plan. JNCC aims to develop and improve the statistics in ways that will support this work and inform non-governmental stakeholders and the wider public.

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# 1. Introduction to the 25 Year Environment Plan Indicator C6

## 1.1. Indicator C6 – Diverse seas: status of threatened and declining features

The C6 indicator, 'Diverse Seas: status of threatened and declining features', has been developed for the Outcome Indicator Framework, which is a suite of indicators describing environmental change relating to the ten goals of the 25 Year Environment Plan (Defra 2018). The 25 Year Environment Plan and its subsequent update, the Environmental Improvement Plan (Defra 2023a), set out government action to help the environment "regain and retain good health". The 25 Year Environment Plan Outcome Indicators are voluntarily compliant with the UK's Code of Practice for Statistics, which advocates that users' interests should be at the core of indicator development.

The C6 indicator is being developed to quantify the vulnerable features flagged for protection, either listed in national legislation or international agreements. These include the features of conservation interest protected in Marine Protected Areas, Natural Environment and Rural Communities Act Section 41 habitats and species of principle importance for conservation, and features listed under the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), amongst others. The overall indicator will be derived from the status of the individual features and will present a UK marine specific summary of published datasets.

## 1.2. Development of the C6 indicator

Initial development of indicator C6 incorporates assessments derived from UK-relevant information published by OSPAR's Intersessional Correspondence Group on the Protection of Species and Habitats (ICG-POSH). The latest OSPAR Quality Status Report (QSR) was published in 2023 (OSPAR 2023a), and provides an assessment and summary of features on the OSPAR List of Threatened and/or Declining (T&D) Species and Habitats. For indicator C6, the aim is to use existing OSPAR publications, with updates to the indicator when new status assessments become available.

In addition, the fourth Article 17 UK Habitats Directive Report considered the Conservation Status of Annex I habitats and Annex II, IV and V species (JNCC 2019). These are habitats and species for which the UK had European-level conservation responsibilities. The results of these assessments are summarised in UK Biodiversity Indicators C3a, 'Status of UK habitats of European importance', and C3b, 'Status of UK species of European importance' (Defra 2023b). These summaries include both terrestrial and marine features.

The conservation status of only coastal and marine features will be used to develop the C6 indicator. As the UK has now left the EU, provision for Article 17 reporting has been included in the Statutory Instruments amending the Habitats Regulations in England and Wales, Scotland, and Northern Ireland. The Habitats Regulations stipulate that reporting must be completed within six years of EU Exit Day and every six years thereafter. Country-level reporting must be followed by a UK composite report within two years of the last country-level report. Therefore, the aim will be to continue drawing on this dataset when new status assessments become available.

While there is some crossover between features listed under OSPAR and Article 17, the dates of assessment, and, in some cases, the methodologies used for status assessment may be different. No integration will therefore be made between the two datasets, and the

assessments should be interpreted separately to formulate a combined C6 assessment. The C6 indicator will be flexible, with intended scope for integration with wider datasets, where relevant data are publicly available.

### 1.3. Datasets used for the C6 indicator

The datasets used for the C6 indicator are derived from published sources. The indicator will present a UK marine narrative of these datasets. The methodologies used to determine overall status is not described here. A description of the datasets and summarisation process for the C6 indicator is provided below.

#### 1.3.1. OSPAR Threatened and/or Declining Species and Habitats

OSPAR ICG-POSH assessments completed between 2019 and 2023 are summarised in the latest OSPAR QSR (OSPAR 2023a). These assessments relate to features on the OSPAR List of Threatened and/or Declining (T&D) Species and Habitats and incorporate multiple habitats, and fish, bird, marine mammal, and reptile species (OSPAR 2019).

Assessments are completed for each OSPAR Region. The boundaries of these regions do not align with national boundaries. Regions II and III fall mostly in UK waters. Only small sections of Regions I, IV and V cross into UK waters. Therefore, for the purposes of the C6 indicator, only Region II (Greater North Sea) and Region III (Celtic Seas) are considered.

It is important to note that these regions extend beyond UK waters and encapsulate datasets from outside the UK. It is not possible to disaggregate UK-only datasets for the purposes of this indicator, which is based on published assessments. The status reported as part of the C6 indicator is for the whole OSPAR region and not specifically for the part of the region that is within the UK. Checks were made to ensure results only included those T&D features which are known to occur in UK waters.

Harbour porpoise and roseate tern are included on the OSPAR threatened and/or declining features list (OSPAR 2019). These species were not assessed as part of the OSPAR ICG-POSH assessments; however, assessments were made through other methods published as part of the OSPAR QSR 2023. Harbour porpoise was assessed by applying the OSPAR common indicators for abundance and distribution (M4) and by-catch (M6) (OSPAR 2023b). Roseate tern was assessed as part of the OSPAR integrated assessment of marine birds (OSPAR 2023c). Both species are therefore included under the C6 indicator.

Listed features (OSPAR 2019) that have not been assessed have been excluded from the C6 indicator, however these features have been included for completeness in Tables 1 and 2.

Under OSPAR reporting, assessments concluded whether a feature is in a 'Good', 'Poor' or 'Unknown' status. The total number of features within each category (habitats, fish, marine mammals, birds and reptiles) are calculated and summarised. Tables presented here are based on those presented under the OSPAR QSR 2023 (OSPAR 2023a) thematic assessments for benthic habitats, fish, marine mammals, and birds, representing a summary of published assessments.

#### 1.3.2. Article 17 features

In the fourth UK Habitats Directive reporting round in 2019 (JNCC 2019), assessments were completed for eight coastal habitats, eight marine habitats and 16 marine species. A further

26 vagrant marine species are considered under Article 17 reporting, however as no assessments were made on these species in 2019, vagrant species have been excluded from the C6 indicator.

Under Article 17 reporting, maerl, a habitat-forming species, was assessed as two separate species in 2019. However, due to difficulties in differentiating between maerl species, the assessment was combined and the same report was submitted by the UK for both species. For the purposes of the C6 indicator, maerl is considered as a single habitat feature.

Under Article 17 reporting, assessments must conclude whether a feature is in a 'Favourable', 'Unfavourable-Inadequate', 'Unfavourable-Bad' or 'Unknown' conservation status.

The C6 indicator component examining Article 17 features is, therefore, based on the published results from the latest Article 17 reporting round (2019), excluding vagrant species. This component represents a high-level summary of Article 17 assessment results with respect to the marine and coastal features only. The total number of features within each category (coastal habitats, marine habitats, marine mammals, and reptiles) are calculated and summarised. Data are taken directly from published Article 17 summary documents (JNCC, 2019), and the C6 indicator represents a summary of the published assessments.

#### **1.4. Development plan and update frequency**

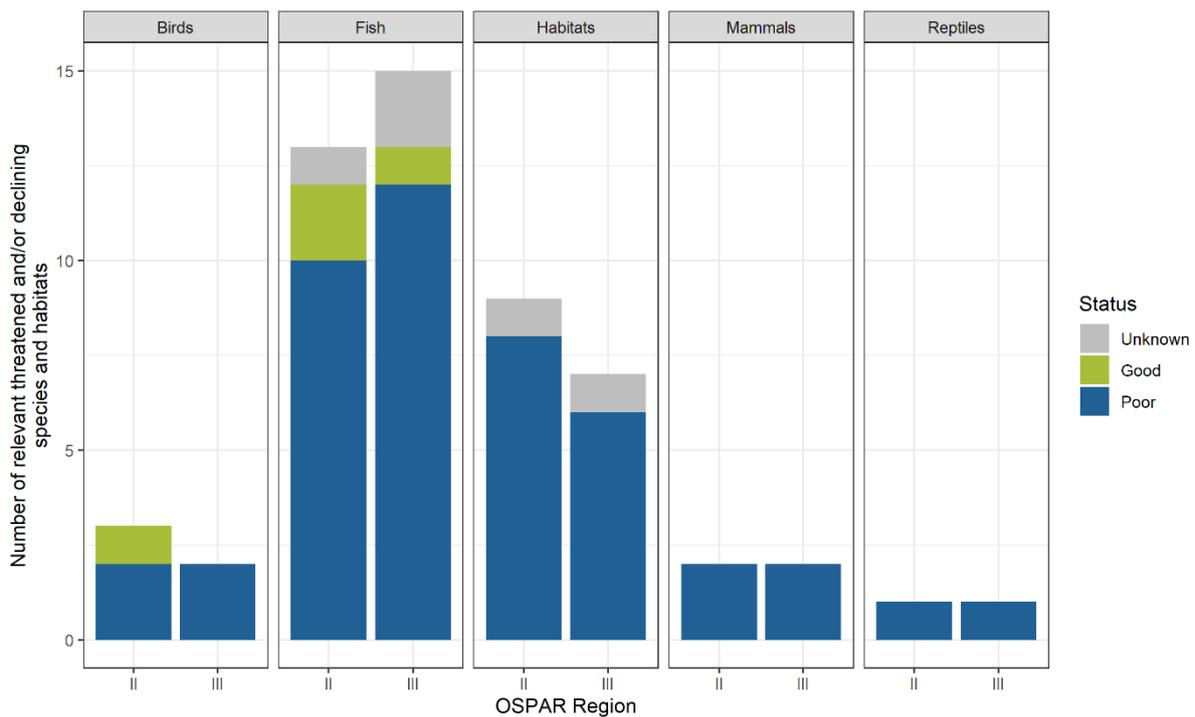
JNCC will continue to seek feedback on and develop the C6 indicator over the next financial year (2024 to 2025). Opinions and feedback will be sought to ascertain the accuracy and applicability of this indicator, and to ensure it is of sufficient quality. It would be expected that any statistical or methodological errors would be corrected retrospectively with explanations given in future updates to this report. Updates will also be included via the yearly publication of the 25 Year Environment Plan Outcome Indicator Framework dashboard.

The ongoing frequency of updates to this indicator will be decided as part of the ongoing evaluation of the indicator. Future updates are dependent on the frequency of publication of the underlying datasets and assessment cycles. Additional datasets could also be incorporated depending on suitability.

## 2. Status of threatened and declining features: Results

### 2.1. OSPAR Threatened and/or Declining Species and Habitats

For both Region II and Region III, the majority of Threatened and/or declining features are in Poor status, which equates to 23 out of 28 assessed features in Region II, and 23 out of 27 assessed features in Region III (Figure 1). Similar patterns are observed in both Regions II and III. The only features in Good status were the Spotted ray (Region II only), Thornback skate/ray (Regions II and III) and Roseate tern (Region II only). Summaries of assessment results for birds, fish, mammals, reptiles, and habitats are provided in Tables 1 and 2 for Region II and Region III respectively.



**Figure 1:** Status of UK-relevant OSPAR Threatened and/or Declining Species and Habitats across OSPAR Regions II and III. This figure includes all species and habitats assessed under the OSPAR QSR (2023), providing a breakdown of the number of habitats and species with Good, Poor and Unknown status.

**Table 1:** Greater North Sea (Region II) assessment summary of OSPAR-listed Threatened and/or Declining Species and Habitats. Data are derived from OSPAR QSR (2023). A distinction has been made between features that have Unknown Status (have had a status assessment) and those that are included as OSPAR-listed threatened and/or declining features (OSPAR 2019), but have had no assessment.

Category	Threatened and/or Declining Species and Habitats: overview	Habitats/species in Poor Status	Habitats/species in Good Status	Unknown	Not Assessed
Habitats	Eight out of nine OSPAR-listed habitats assessed are in poor status	Coral gardens Deep-sea sponge aggregations Intertidal mud flats Intertidal <i>Mytilus edulis</i> beds on mixed and sandy sediments <i>Lophelia pertusa</i> reefs Maerl beds Sea-pen and burrowing megafauna <i>Zostera</i> beds	None	European Flat oyster ( <i>Ostrea edulis</i> ) beds	Kelp forest Littoral chalk communities <i>Modiolus modiolus</i> beds <i>Sabellaria spinulosa</i> reefs
Fish	Ten out of thirteen OSPAR-listed fish species assessed are in poor status	Allis shad Angel shark Basking shark Common skate Eel Salmon Sea lamprey Spurdog Sturgeon White skate	Spotted ray Thornback skate/ ray	Porbeagle shark	Bluefin tuna Cod Houting Long-snouted seahorse Orange roughy Short-snouted seahorse

Category	Threatened and/or Declining Species and Habitats: overview	Habitats/species in Poor Status	Habitats/species in Good Status	Unknown	Not Assessed
Birds	Two out of three OSPAR-listed bird species assessed are in poor status	Balearic shearwater Black-legged kittiwake	Roseate tern [see note 1]	None	None
Mammals	Two out of two OSPAR-listed marine mammal species assessed are in poor status	Harbour porpoise [see note 2] Northern right whale	None	None	None
Reptiles	One out of one OSPAR-listed marine reptile species assessed are in poor status	Leatherback turtle	None	None	None
Invertebrates	Listed marine invertebrate species were not assessed	None	None	None	Dogwhelk Ocean Quahog

Note 1: Roseate tern has not been assessed as part of OSPAR T&D since listing but has been assessed as part of the OSPAR integrated assessment of marine birds.

Note 2: Harbour porpoise was assessed by applying the common indicators for abundance and distribution (M4) and by-catch (M6).

**Table 2:** Celtic Seas (Region III) assessment summary of OSPAR-listed Threatened and/or Declining Species and Habitats. Data are derived from OSPAR QSR (2023). A distinction has been made between features that have Unknown Status (have had a status assessment) and those that are included as OSPAR-listed threatened and/or declining features (OSPAR, 2019), but have had no assessment.

Category	Threatened and/or Declining Species and Habitats: overview	Habitats/species in Poor Status	Habitats/species in Good Status	Unknown	Not Assessed
Habitats	Six out of seven OSPAR-listed habitats assessed are in poor status	European flat oyster ( <i>Ostrea edulis</i> ) beds Intertidal mud flats <i>Lophelia pertusa</i> reefs Maerl beds Sea-pen and burrowing megafauna <i>Zostera</i> beds	None	Intertidal mussel beds	Kelp forest <i>Modiolus modiolus</i> beds <i>Sabellaria spinulosa</i> reefs
Fish	Twelve out of fifteen OSPAR-listed habitats assessed are in poor status	Allis shad Angel shark Basking shark Common skate Eel Leafscale Gulper shark Portuguese dogfish Salmon Sea lamprey Spurdog Sturgeon White skate	Thornback skate/ ray	Porbeagle shark Spotted ray	Bluefin tuna Cod Houting Long-snouted seahorse Orange roughy Short-snouted seahorse

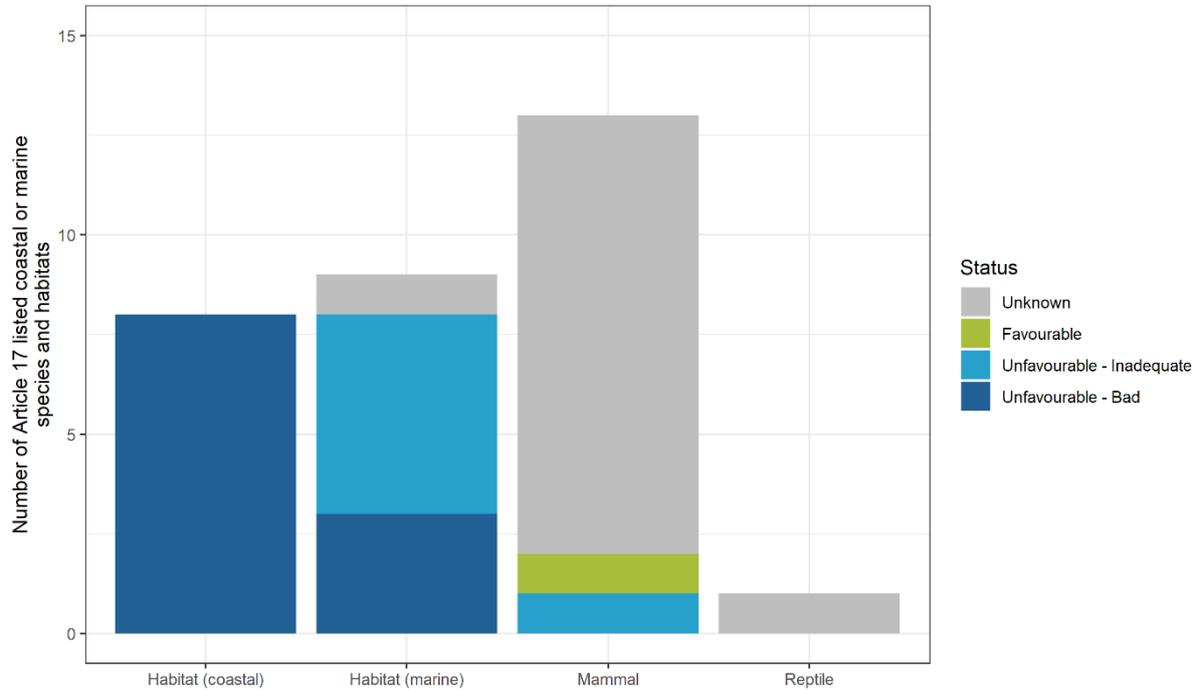
Category	Threatened and/or Declining Species and Habitats: overview	Habitats/species in Poor Status	Habitats/species in Good Status	Unknown	Not Assessed
Birds	Two out of two OSPAR-listed bird species assessed are in poor status	Balearic shearwater Black-legged kittiwake	None	None	Roseate tern [see note 1]
Mammals	Two out of two OSPAR-listed marine mammal species assessed are in poor status	Harbour porpoise [see note 2] Northern right whale	None	None	None
Reptiles	One out of one OSPAR-listed marine reptile species assessed are in poor status	Leatherback turtle	None	None	None
Invertebrates	Listed marine invertebrate species were not assessed	None	None	None	Dogwhelk Ocean Quahog

Note 1: Roseate tern has not been assessed as part of OSPAR T&D since listing but has been assessed as part of the OSPAR integrated assessment of marine birds.

Note 2: Harbour porpoise was assessed by applying the common indicators for abundance and distribution (M4) and by-catch (M6).

## 2.2. Article 17 features

Overall, 17 out of 31 assessed features are in Unfavourable status (Figure 2). Many habitat features were in 'Unfavourable - Inadequate' or 'Unfavourable - Bad' condition. The status for most marine mammal features and the single reptile species were Unknown. The only species in favourable condition was the grey seal. Summaries of assessment results for habitats (coastal and marine), mammals and reptiles are provided in Tables 3.



**Figure 2:** Status of Article 17 listed coastal and marine features in the UK, 2019, providing a breakdown of the number of habitats and species with Favourable, Unfavourable - Inadequate, Unfavourable - Bad, and Unknown status.

**Table 3:** Summary of Article 17 listed coastal and marine features in the UK, 2019. The feature assessment overview column summarises the total number of features that have been assessed under each category, and the number which have Unfavourable status (either Unfavourable - Bad, or Unfavourable - Inadequate).

Category	Feature assessment overview	Favourable	Unfavourable - Bad	Unfavourable - Inadequate	Unknown
<b>Habitat (coastal)</b>	<b>Eight out of eight coastal habitats assessed are in unfavourable condition</b>	None	Annual vegetation of drift lines Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> ) Inland salt meadows Mediterranean and thermo-Atlantic halophilous scrubs ( <i>Sarcocornetea fruticosi</i> ) Perennial vegetation of stony banks <i>Salicornia</i> and other annuals colonizing mud and sand Spartina swards ( <i>Spartinion maritimae</i> ) Vegetated sea cliffs of the Atlantic and Baltic Coasts	None	None

Category	Feature assessment overview	Favourable	Unfavourable - Bad	Unfavourable - Inadequate	Unknown
Habitat (marine)	<b>Eight out of nine marine habitats assessed are in unfavourable condition*</b>	None	Estuaries Mudflats and sandflats not covered by seawater at low tide Sandbanks which are slightly covered by sea water all the time	Coastal lagoons Large shallow inlets and bays <i>Lithothamnium coralloides</i> / <i>Phymatholithon calcareum</i> (maerl) [see note 1] Reefs Submerged or partially submerged sea caves	Submarine structures made by leaking gases
Mammal	<b>One out of thirteen marine mammals assessed are in unfavourable condition, the status is unknown for eleven species</b>	Grey seal	None	Common seal	Atlantic white-sided dolphin Bottlenose dolphin Common dolphin Fin whale Harbour porpoise Killer whale Long-finned pilot whale Minke whale Risso's dolphin Sperm Whale White-beaked dolphin
Reptile	<b>Status is unknown for the only marine reptile assessed</b>	None	None	None	Leatherback turtle

Note 1: Under Article 17 maerl were assessed as two separate species in 2019, however due to the difficulties in differentiating between species, the assessment was combined, and the same report was submitted for both species. Maerl are classed as a single habitat feature under the C6 indicator.

### **2.3. Comparison of features assessed under OSPAR QSR (2023) and Article 17 (2019)**

Overall, most features assessed under the C6 indicator are in Poor or Unfavourable condition (terminology is dataset dependant). Some features were assessed under both Article 17 (2019) and OSPAR QSR (2023). Results for features assessed under both are summarised in Table 4. While there was general agreement between the two assessments, there were some minor differences. These differences related to some features being classified as either Poor/Unfavourable status in one, or Unknown in another dataset.

It should be noted that the Article 17 assessments were made earlier than the OSPAR assessments, rely on different underlying datasets collected at different time points, and use slightly different methodologies. The geographic scope is also different for the two assessments.

**Table 4:** Comparison of common features assessed under Article 17 (2019) and OSPAR (2023). Note that geographic scope, year of assessment, data availability, feature name, and overall assessment methodology may differ slightly depending on location (e.g. OSPAR region or UK) and assessment type.

Feature (OSPAR-listed name)	Feature (Article 17 listed feature name)	OSPAR assessment (2019–2023)		Article 17 assessment (2019)
		Region II	Region III	UK
Intertidal mudflats	Mudflats and sandflats not covered by seawater at low tide	Poor	Poor	Unfavourable - Bad
European/common sturgeon	Common sturgeon	Poor	Poor	Not assessed [see note 1]
Leatherback sea turtle	Leatherback turtle	Poor	Poor	Unknown
Right whale	Northern right whale	Poor	Poor	Not assessed [see note 1]
Harbour porpoise [see note 2]	Harbour porpoise	Poor	Poor	Unknown
Maerl beds	<i>Lithothamnium coralloides</i> / <i>Phymatholithon calcareum</i> (maerl) [see note 3]	Poor	Poor	Unfavourable - Inadequate

Note 1: Common sturgeon and northern right whale were considered vagrant species under Article 17 (2019) and were therefore not assessed.

Note 2: Harbour porpoise was assessed by applying the common indicators for abundance and distribution (M4) and by-catch (M6).

Note 3: Under Article 17, maerl were assessed as two separate species in 2019, however due to the difficulties in differentiating between species, the assessment was combined and the same report was submitted for both species.

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