The Approach to Assessing Conservation Status of Habitats and Species for the 2019–2024 Habitats Regulations Country and UK Offshore Reporting

Approach Document for the 2019–2024 Habitats Regulations reporting

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1. Habitats Regulations reporting

1.1 Introduction

This document sets out the approach for assessing the status of protected habitats and species under the country Habitats Regulations (as amended) (England and Wales, Scotland, Northern Ireland) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) – collectively the Habitats Regulations, hereafter.

Under the Habitats Regulations, the UK (offshore) and Devolved Governments (countries) must report on:

- the conservation status of Annex I habitats and Annex II, Annex IV and Annex V species;
- the status of relevant wild bird species; and
- the implementation of measures taken to support their protection and recovery.

These duties originate from the Habitats Directive (92/43/EEC) and the Wild Birds Directive (2009/147/EC) as retained in UK law. While the UK no longer reports to the European Commission, the obligations now operate domestically and continue to underpin the UK's commitments to biodiversity and international agreements.

Reporting is delivered through:

- Country reports (terrestrial and inshore) under the country Habitats Regulations.
- A UK offshore report under the Offshore Regulations (produced by JNCC).

The reports cover the period 2019–2024, with publication planned for 2026.

This document describes the technical approach used to assess habitats and species under the Habitats Regulations and the Offshore Regulations (i.e. feature-level reporting). Additional reporting on the general implementation of measures in each country and the UK offshore sits alongside the feature assessments; the approach to implementation reporting is not covered in this document.

Following publication of the country and offshore reports, Regulation 9A of the Habitats Regulations requires a UK report within two years that evaluates:

- the UK's progress towards Favourable conservation status for Annex I habitats and Annex II species in their natural range (and restoration where needed); and
- the contribution of the National Site Network (NSN) to achieving that objective.

In addition to supporting the UK report under the Habitats Regulations, data from the country reports will also enable the UK to meet reporting commitments under Resolution 8 of the Bern Convention.

1.2 2019–2024 reporting approach

1.2.1 Differences between 2019–2024 and previous reporting rounds

This Habitats Regulations reporting relates to the 2019–2024 cycle. It is the first set prepared under the domestic Habitats Regulations framework, but it remains closely aligned to the content of the previous EU Article 17 (Habitats and Non-bird Species) and Article 12 (Birds) reports. For clarity in this document, the previous cycle (covering 2013–2018, published 2019) is referred to as the 2019 Article 17 / Article 12 reporting.

Key differences in 2019–2024 to previous reports include:

- **Country and offshore reports:** Previous Article 17 reporting was at UK level only. For 2019–2024, country specific and UK offshore reports are required.
- **Birds integrated:** Article 12 (birds) was previously reported separately from Article 17. For the 2019–2024 report, habitats, non-bird species, and birds are brought together within the same overall reporting suite. The methodologies differ to reflect the distinct objectives under the former Habitats and Birds Directives; these differences are set out in the relevant sections.
- **UK composite report:** Data from the country and offshore reports will support a UK report to be published by January 2028, addressing progress towards Favourable conservation status and the contribution of the NSN.

1.2.2 Co-ordination of data and assessments

A co-ordinated approach to the Habitats Regulations reporting has been adopted across the Statutory Nature Conservation Bodies (SNCBs) and Devolved Governments of the UK. Although responsibility for reporting under the regulations are devolved, it was recognised a consistent approach would benefit country reports and would support UK reporting requirements, including international obligations.

To assist with reporting, reporting pro-formas (spreadsheets), UK-level guidance for habitat and species features, and reporting approaches were developed by the Joint Nature Conservation Committee (JNCC) in co-ordination with the Country Nature Conservation Bodies (CNCBs) and approved by representatives of the devolved governments. The CNCBs for the UK are Natural England (NE), Natural Resources Wales (NRW), NatureScot, and the Department of Agriculture, Environment and Rural Affairs of Northern Ireland (DAERA).

For Country reports, all reporting, data collation, and condition assessments were undertaken by the relevant CNCB, except in the following areas delivered by JNCC (see Figure 1):

- Habitats and species mapping across all reporting areas, supported by data from CNCBs.
- Where Offshore information has been included within country reports, marine offshore habitat condition and area information has been provided to enable combined inshore and offshore assessment at country level
- Marine mammal and turtle data collation and FCS assessments.
- Collation of UK bird population, trend, status, and distribution data.

For the offshore assessments, all reporting, data collation, and condition assessments were undertaken by JNCC.

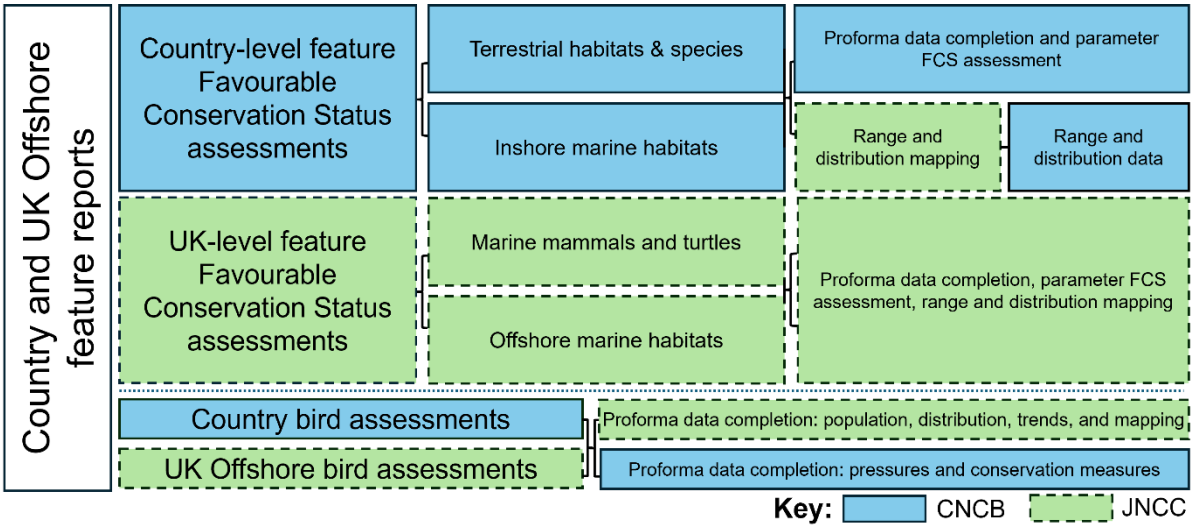

Figure 1. The respective roles of JNCC (in blue) and the CNCBs (in green) in the data gathering, analysis, and creation of the country-level Habitats Regulations reporting.

1.2.3 Using this document

This approach document lays out the co-ordinated approach agreed and adopted by all four UK counties for assessing the status of habitats and species as part of the reporting under regulation 9A/3Z of the Habitats Regulations, and for offshore reporting under regulation 6A of the Offshore Regulations.

The approach taken to assess the status of habitats and species largely mirrors the EU approach to the 2025 Article 17 reporting, as adopted by Bern Convention (Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, 2012) for the 2019–2024 Resolution 8 reporting. As the UK will be reporting a suite of Habitats and Species to the Bern Convention under Resolution 8, we have closely aligned our reporting with the Bern guidelines. Therefore, the 2019–2024 Bern guidance (explanatory notes; concepts and definitions) provides the most comprehensive source of technical detail on the approach and should be used alongside this document.

Reporting of bird species was not included in the 2019–2024 Resolution 8 reporting under the Bern Convention, and therefore, the approach taken has been adapted from the Article 12 approach to enhance the utility of the reporting for the UK (see details in Section 5).

In addition, UK-specific guidance documents for habitats and species were created and shared to assist with the completion of the required data fields in the pro-forma. These are referred to hereafter as the UK Guidance (Species and/or Habitats). The required data fields for each of the sections (as listed in the pro-forma) have been inserted at the beginning of each section below. A full list of these fields can be found in Appendix 1.

To avoid repetition of guidance, definitions, and technical descriptions, this document only provides additional information on the approach:

- where the approach deviated from the Bern Convention Guidance, and/or,
- where additional guidance proved useful in ensuring consistency of approach.

This document provides more detail on the bird reporting, which was amended from the approach taken by the UK for the 2019 Article 12 reporting. Where approaches to the reporting were country specific (e.g. sources of data approaches), this is highlighted in the document.

1.3 Favourable Conservation Status

1.3.1 Assessing conservation status

The assessment of the conservation status of a habitat type or species is related to the concept of Favourable Conservation Status (FCS). FCS is the overall objective to be reached for all habitat types and species listed in Annexes I, II, IV and V of the Habitats Directive (as retained in UK legislation) and it is defined in Article 1 of the Habitats Directive. It can be simply described as a situation where a habitat type or species is prospering (in both quality and extent/population) and with good prospects to continue to do so in the future. The conservation status objective of the Directive is defined in positive terms, oriented towards a Favourable situation, which needs to be defined, reached, and maintained. It is therefore aimed at achieving far more than trying to avoid extinctions.

The approach to assessing FCS was based on the approach and definitions outlined in the EU guidance for the 2025 Article 17 reporting, as adopted by the Bern Convention. The agreed method for the evaluation of conservation status used an evaluation matrix (see Appendix 2), assessing the parameters for habitats and species shown in Table 1. Additional matrices were provided in the habitat and species guidance documents to support the assessment of each of these parameters. Where these matrices have been updated, amended, or provide additional information to the Bern guidance they have been reproduced with additional information in this approach document.

Table 1. Parameters for the conservation status assessment of species and habitat types.

Species conservation status assessment parameters	Habitat conservation status assessment parameters
Range	Range
Population	Area
Habitat for the species	Structure and functions (including typical species)
Future prospects	Future prospects

The assessment of FCS involved the use of Favourable Reference Values (FRVs). Detail on FRVs can be found in Appendix 3.

2. Habitats assessments

2.1 Background

This section outlines the approach to the assessment of the habitats within the country Habitats Regulations reporting.

CNCBs were responsible for gathering the data and assessing the FCS of all habitats at a country scale. Some of the data for offshore marine habitats were provided by JNCC, which were optionally integrated with inshore data to provide country level habitat assessments (see Section 2.2.2). JNCC were responsible for gathering the data and assessing the FCS of all offshore habitats.

The 'UK guidance to be used when undertaking the 'Habitats Regulations reporting' of UK habitat types' (UK Guidance (Habitats)) and Bern guidance were the primary guidance documents used for completing the required fields for habitat assessments (see Appendix 1). Where the UK approach deviates from the Bern guidance, or additional information is required, this has been documented within this section.

Field numbers mentioned relate to the field numbers within the UK Guidance (Habitats). A full list of these fields can be found in Appendix 1 Table A1A.

2.1.1 Data sources

Data sources used for species reporting were recorded in field 3.1 of the Species reporting pro-forma.

2.2 Habitats included

The data fields used to gather information for this section can be found in table 2.

Table 2. Data collection fields for Section 2.2 as listed in the UK Guidance (Habitats), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
1. General information	1.1 Habitat name	Required	×	✓
	1.2: Habitat code	Required	✓	×
	1.3 Habitat group	Required	×	✓
	1.4 Country	Required	×	✓
3. Biogeographical and marine regions	3.1: Biogeographic or marine region where the habitat occurs	Required	✓	×
	3.2: Sources of information	Required	✓	×

2.2.1 List of habitats included

A list of the habitats included and assessed by each country in the Habitats Regulations reporting is available in Appendix 4 Table A4A. These habitats were those listed on the Habitats Directive (as retained in UK legislation) Annex I.

2.2.2 Changes to habitat list

There have been some changes to the list of marine habitats included in the 2019–2024 reporting round compared with the 2019 Article 17 reporting. A summary of these changes can be found in Table 3 with further detail provided below.

Table 3. Marine habitats for which changes have been made in the 2019–2024 Habitats Regulations reporting.

Habitat name	Habitat code	Habitat group	Reporting change
Reefs	H1170	Marine, coastal and halophytic habitats	Optional additional reporting on Subdivided Reefs (H1170): Reefs Biogenic H1170-B); and Reefs Rocks (H1170-R) (See Section 2.2.2.1 *Subdividing reefs*) Scale of assessment: Some countries opted to report on this feature by combining offshore and inshore. An offshore report was also written covering the whole of the UK (see Section 2.2.2.2 *Offshore and inshore marine feature reporting*)
Sandbanks which are slightly covered by sea water all the time	H1110	Marine, coastal and halophytic habitats	Scale of assessment: Some countries opted to report on this feature by combining offshore and inshore. An offshore report was also written covering the whole of the UK (see Section 2.2.2.2 *Offshore and inshore marine feature reporting*)
Maerl beds	S1376-S1377	Maerl bed	New to 2019–2024 habitat reporting (see Section 2.2.2.3 *Maerl*)

2.2.2.1 Subdividing Reefs

Reefs (H1170) were reported as a single H1170 Reef feature assessment, as in 2019. In this Habitats Regulations Reporting, data recording was further subdivided into two ecologically

distinct features: Biogenic reef and Rocky reef. This is because Rocky reef and Biogenic reef differ in terms of species, variability, and associated pressures. Assessing each separately represents a more ecologically appropriate assessment. This allowed separate assessments of Biogenic and Rocky reef components where possible with data aggregated for the Reefs (H1170) assessments. Reporting on Rocky and Biogenic reef was only undertaken by Northern Ireland.

2.2.2.2 Offshore and inshore marine feature reporting

In 2019 Article 17 reporting, data recording was split into offshore and inshore components. Offshore components were compiled at a UK scale by JNCC. Inshore data recording was completed at a country level. Overall assessment was at the UK level following aggregation of the country inshore and UK offshore data.

In this reporting round, some countries undertook combined offshore and inshore Annex I feature assessments at the country scale. This approach applied a country boundary to the offshore data to ensure the offshore features were reported in a consistent approach to terrestrial features at a country level. JNCC shared offshore UK Marine Strategy (UKMS) and OSPAR indicator assessments and habitat feature data cut to country-level boundaries (see Appendix 6 for more details of boundaries used).

In addition, Annex I feature reporting for offshore habitats was completed for the entirety of the UK in accordance with Regulation 6A of the Conservation of Offshore Marine Habitats and Species Regulations 2017.

2.2.2.3 Maerl

In 2019, two species of maerl (S1376 and S1377) were reported under Article 17. The same report was submitted for each species. In this Habitats Regulations reporting, these two species were reported as a single habitat (S1376-S1377). See Appendix 5 for details.

2.3 Habitat range

The data fields used to gather information for this section can be found in table 4.

Table 4. Data collection fields for Section 2.3 as listed in the UK Guidance (Habitats), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
4. Range	4.1: Surface area	Required	×	✓
	4.2: Short-term trend Period	Required	✓	×
	4.3: Short-term trend Direction	Required	✓	×
	4.4a: Short-term trend Magnitude Estimated Minimum	Optional	✓	×
	4.4b: Short-term trend Magnitude Estimated Maximum	Optional	✓	×
	4.4c: Short-term trend Magnitude Pre-defined range	Optional	✓	×
	4.4d: Short-term trend Magnitude Unknown	Optional	✓	×
	4.4e: Short-term trend Magnitude Type of estimate	Optional	✓	×

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
	4.4f: Short-term trend Magnitude Rate of decrease	Required	×	✓
	4.5: Short-term trend Method used	Required	✓	×
	4.6: Long-term trend Period	Optional	✓	×
	4.7: Long-term trend Direction	Optional	✓	×
	4.8: Long-term trend Magnitude and Rate of decrease	Optional	✓	×
	4.8a: Long-term trend Magnitude Minimum	Optional	✓	×
	4.8b: Long-term trend Magnitude Maximum	Optional	✓	×
	4.8c: Long-term trend Rate of decrease	Optional	×	✓
	4.9: Long-term trend Method used	Optional	✓	×
	4.10a: Favourable Reference Range Area	Required	✓	✓
	4.10b: Favourable Reference Range Pre-defined FRV increment	Required	✓	✓
	4.10c: Favourable Reference Range Unknown	Required	✓	✓
	4.10d: Favourable Reference Range Method used	Required	✓	✓
	4.10e: Favourable Reference Range Quality of Information	Required	✓	✓
	4.11a: Change and reason for change in surface area of range	Required	✓	×
	4.11b: Change and reason for change in surface area of range Genuine change	Required	✓	×
	4.11c: Change and reason for change in surface area of range Improved knowledge or more accurate data	Required	✓	×
	4.11d: Change and reason for change in surface area of range Different method	Required	✓	×
	4.11e: Change and reason for change in surface area of range No information	Required	✓	×
	4.11f: Change and reason for change in surface area of range Other reasons	Required	✓	×
	4.11g: Change and reason for change in surface area of range Main reason	Required	✓	×
10. Conclusions	10.1: Range	Required	✓	✓

The status of the Range of a habitat was assessed by: producing a distribution map; calculating the range surface area; assessing information on trends in range surface area; comparing the current range surface area with a Favourable Reference Range; and determining a conclusion on range by applying thresholds/rules as set out in an evaluation matrix.

2.3.1 Range surface area calculation

Detail on the range calculation can be found in Appendix 6. Feature range was previously mapped by JNCC at UK scale (2019 Article 17 reporting) using data provided by CNCBs.

In this reporting round, for terrestrial features, range was mapped at country scale by JNCC using data provided by the countries and the range mapping tool. Adopting a standardised approach to mapping range for each country ensures consistency in reporting. Due to the way the range mapping tool calculates range, there will be slight differences between the sum of the country range figures and the UK range figure.

A different approach was utilised for inshore and offshore marine habitats, this varied between habitats (see Appendix 6 for more details). Range was mapped at country scale by JNCC using data provided by the countries for inshore and at a UK scale for offshore. A standardised approach for each feature was used among the countries.

2.3.2 Range trends

The assessment of range trends were the same as outlined in the Bern guidance except for the field short-term trend magnitude, which had an additional field "rate of decrease" (4.4f). This field was completed if the short-term surface area trend direction (4.3) was 'decreasing', and specialists provided an estimate of the rate of decline within the country-level reports. Declines were reported to be either:

- 1% or less per year (during the reporting period), or
- more than 1% per year (during the reporting period).

This information helped to establish if a declining trend would contribute to an Unfavourable-inadequate or Unfavourable-bad parameter conclusion, respectively using the Range conclusion matrix (Table 5). The same field was also available in long-term trend but was optional. If completed, this field was not used to assess conservation status for Range.

The Range reporting fields were updated from previous reporting rounds to align with Bern reporting. Detail on previous reporting round fields can be found in the 2019 Bern guidance.

2.3.3 Range Conclusions

Range Conclusions were assessed using relevant section of the General Evaluation Matrix for assessing conservation status (see Appendix 2 Table A2A). This approach was the same as in Bern reporting, but a summarised table of the Bern guidance (Table 5) was used. This information is also available in Appendix 2 Table A in the UK Habitat Guidance.

Table 5. Favourable Reference Range and short-term trend Conclusions. Relationship between the short-term trend in range surface area (top rows), the current range surface area and Favourable Reference Range (FRR) (left-hand column), and the Conclusion on conservation status of the range of a habitat (the coloured cells emphasise which conclusion should be applied).

	Short-term trend in Range surface Area 2019–2024			
	Unknown or uncertain	**Increasing or stable**	**Decline 1% or less per year**	**Decline >1% per year**
Range Area or FRR is unknown	Unknown	Unknown	Unfavourable-inadequate	Unfavourable-bad
Range Area > or = FRR	Unknown	Favourable	Unfavourable-inadequate	Unfavourable-bad
Range Area up to 10% below FRR	Unfavourable-inadequate	Unfavourable-inadequate	Unfavourable-inadequate	Unfavourable-bad

Range Area >10% below FRR	Unfavourable-bad	Unfavourable-bad	Unfavourable-bad	Unfavourable-bad

2.4 Habitat area

The data fields used to gather information for this section can be found in table 6.

Table 6. Data collection fields for Section 2.4 as listed in the UK Guidance (Habitats), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
5. Area covered by habitat	5.1: Year or period	Required	✓	×
	5.2a: Surface area Minimum	Required	✓	×
	5.2b: Surface area Maximum	Required	✓	×
	5.2b: Surface area Best single value	Required	✓	×
	5.3: Type of estimate	Required	✓	×
	5.4: Surface area Method used	Required	✓	×
	5.5: Short-term trend Period	Required	✓	×
	5.6: Short-term trend Direction	Required	✓	×
	5.7a: Short-term trend Magnitude Estimated minimum	Required	✓	×
	5.7b: Short-term trend Magnitude Estimated maximum	Required	✓	×
	5.7c: Short-term trend Magnitude Pre-defined range	Required	✓	×
	5.7d: Short-term trend Magnitude Unknown	Required	✓	×
	5.7e: Short-term trend Magnitude Type of estimate	Required	✓	×
	5.7f: Short-term trend Magnitude Rate of decrease	Required	×	✓
	5.8: Short-term trend Method used	Required	✓	×
	5.9: Long-term trend Period	Optional	✓	×
	5.10: Long-term trend Direction	Optional	✓	×
	5.11a: Long-term trend Magnitude Minimum	Optional	✓	×
	5.11b: Long-term trend Magnitude Maximum	Optional	✓	×
	5.11c: Long-term trend Magnitude Confidence Interval	Optional	✓	×
	5.11d: Long-term trend Rate of decrease	Optional	×	✓
	5.12: Long-term trend Method used	Optional	✓	×
	5.13a: Favourable reference area Area	Required	✓	✓
	5.13b: Favourable reference area Pre-defined FRV increment	Required	✓	✓
	5.13c: Favourable reference area Unknown	Required	✓	✓
	5.13d: Favourable reference area Method used	Required	✓	✓
	5.13e: Favourable reference area Quality of Information	Required	✓	✓
	5.14a: Change and reason for change in surface area	Required	✓	×
	5.14b: Change and reason for change in surface area Genuine change	Required	✓	×
	5.14c: Change and reason for change in surface area Improved knowledge or more accurate data	Required	✓	×
	5.14d: Change and reason for change in surface area Different method	Required	✓	×

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
	5.14e: Change and reason for change in surface area No information	Required	✓	×
	5.14f: Change and reason for change in surface area Other reasons	Required	✓	×
	5.14g: Change and reason for change in surface area Main reason	Required	✓	×
	5.15: Additional information	Optional	✓	×
10. Conclusions	10.2: Area	Required	✓	✓

The status of the Area covered by a habitat was assessed by:

- estimating the area of a habitat;
- assessing information on the trend in the habitat area;
- comparing the current area with a Favourable Reference Area (FRA); and
- selecting a conclusion on Area.

2.4.1 Area

For terrestrial reporting, Area (field 5.1) was completed by the CNCBs using available data. For marine habitat area, some CNCBs calculated the area value by combining the inshore feature area (data sourced from CNCBs) and the offshore feature area disaggregated at a country scale (data sourced from JNCC).

2.4.2 Area trends

For both terrestrial and marine habitats, the assessment of trend in Area was the same as outlined in the Bern guidance except for the field short-term trend magnitude, which had an additional field “rate of decrease” (5.7f). This field was completed if the short-term surface area trend direction (4.2) was ‘decreasing’, and specialists provided an estimate of the rate of decline within the country-level reports. Declines were reported to be either:

- 1% or less per year (during the reporting period), or
- more than 1% per year (during the reporting period).

This information helped to establish if a declining trend would contribute to an Unfavourable-inadequate or Unfavourable-bad parameter conclusion, respectively, using the Area conclusion matrix (Table 7). The same field was also available in long-term trend but was optional. If completed, this field was not used to assess conservation status for area.

The Area reporting fields were updated from previous reporting rounds to align with Bern reporting. Detail on previous reporting round fields can be found in the 2019 EU guidance.

2.4.3 Area Conclusions

Area Conclusions were assessed using relevant section of the General Evaluation Matrix for assessing conservation status (see Appendix 2 Table A2A). This approach was the same as in Bern reporting, but a summarised table of the Bern Guidance (Table 7) was used. This information is also available in Appendix 2 Table B in the UK Habitat Guidance.

Table 7. FRA and short-term Conclusions. Relationship between the short-term trend in Area (top rows), the current Area and FRA (left-hand column), and the conclusion on conservation status of the Area of a habitat (the coloured cells indicate which conclusion should be applied).

	Short-term trend in Area 2019–2024			
	Unknown or uncertain	**Increasing or stable**	**Decline 1% or less per year**	**Decline >1% per year**
Area or FRA unknown	Unknown	Unknown	Unfavourable-inadequate	Unfavourable-bad
Area > or = FRA	Unknown	Favourable	Unfavourable-inadequate	Unfavourable-bad
Area up to 10% below FRA	Unfavourable-inadequate	Unfavourable-inadequate	Unfavourable-inadequate	Unfavourable-bad
Area >10% below FRA	Unfavourable-bad	Unfavourable-bad	Unfavourable-bad	Unfavourable-bad

2.5 Structure and functions

The data fields used to gather information for this section can be found in table 8.

Table 8. Data collection fields for Section 2.5 as listed in the UK Guidance (Habitats), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
6. Structure and functions	6.1ai: Condition of habitat Area in good condition Minimum	Required	✓	×
	6.1aii: Condition of habitat Area in good condition Maximum	Required	✓	×
	6.1bi: Condition of habitat Area in not good condition Minimum	Required	✓	×
	6.1bii: Condition of habitat Area in not good condition Maximum	Required	✓	×
	6.1ci: Condition of habitat Area where condition is not known Minimum	Required	✓	×
	6.1cii: Condition of habitat Area where condition is not known Maximum	Required	✓	×
	6.2: Condition of habitat Method used	Required	✓	×
	6.3: Short-term trend of habitat area in good condition Period	Required	✓	×
	6.4: Short-term trend of habitat area in good condition Direction	Required	✓	×
	6.5: Short-term trend of habitat area in good condition Method used	Required	✓	×
	6.6a: Typical species	Optional	✓	✓
	6.6b: Typical species Species scientific name	Optional	✓	✓
	6.7a: Typical species Method used	Optional	✓	✓
	6.7b: Typical species Additional notes	Optional	✓	✓
	6.8: Additional information	Optional	✓	×
10. Conclusions	10.3: Specific structure and functions	Required	✓	✓

The status of the Structure and functions of a habitat was assessed by:

- evaluating the condition of the habitat;
- assessing the trend in habitat condition; and
- selecting a conclusion on Structure and functions

2.5.1 Marine habitat indicators approach

In the 2019 Article 17 reporting, the condition of marine habitat (field 6.1) relied on a variety of methods including indicative condition assessments (e.g. SAC / feature condition), Water Framework Directive assessments, and expert judgement. The approach varied by country, particularly in filling gaps where there was no/limited condition data available.

In the 2019–2024 Habitats Regulations reporting, it was agreed that the following approach should be utilised for assessment of condition. Primary datasets were used where there were recent local level assessments (e.g. SAC/local assessments; Water Environment Regulations (WER) tools). Where there was no recent assessment (for example outside of Marine Protected Areas (MPAs), a judgement was made on whether the results from secondary datasets would be more appropriate or used in combination with primary datasets. This included additional indicators and UKMS/OSPAR indicators. Supporting information including water quality, WER waterbody assessments, proxy assessments and contextual information (including casework from site management not included in the above) was used.

This approach did not replace the methods used in 2019 but enhanced the assessments by formalising the approach.

2.5.2 Structure and functions Conclusions

The Structure and functions of habitats (field 10.3) were determined using the relevant section of the General Evaluation Matrix for assessing conservation status of a habitat type (see Appendix 2 Table A2A). For consistency with the 2013 and 2019 Article 17 UK reporting, the threshold used to conclude on Favourable status of Structure and functions was 95% in good (favourable) condition, which was slightly higher than the indicative value of 90% in the Bern Reporting Guidelines. The 95% boundary was adopted in the 2013 and 2019 UK Article 17 reporting to align with UK policy targets.

The data reported under **field 6.1** was used to determine what percentage of a habitat was in good/not good (favourable/Unfavourable) condition (Table 9). In previous Article 17 reporting rounds (and in the current Bern guidance), if more than (>) 25% of the habitat is not in good condition (field 6.1b, e.g. not Favourable under Common Standards Monitoring) it will always be assessed as ‘Unfavourable-bad’. This approach failed to consider the magnitude of the habitat condition (e.g. the habitat not in good condition could be nearly destroyed, or only just failing Favourable - one attribute not meeting Favourable under Common Standards Monitoring).

To improve the reporting of structure and function (field 10.3), expert judgement, supported by the addition of short-term trend in Area in good condition (field 6.4) was introduced for habitats with more than (>) 25% not in good condition. This allowed these habitats to be reported as ‘Unfavourable-inadequate’ or ‘Unfavourable-bad’ as outlined in Table 10.

Table 9. Matrix showing the relationship between the percentage of habitat in good (favourable) or not good (Unfavourable) condition and the conclusion on conservation status

of the Structure and functions of a habitat (the coloured cells emphasise which conclusion should be applied).

	% in Favourable condition	% in Unfavourable condition
Favourable	at least 95%	no more than 5%
Unfavourable-inadequate	75% – < 95%	> 5% – 25%
See table 2	less than 75%	more than 25%
Unknown	If more than 75 % of habitat Area has 'Unknown' condition	

Table 10. Matrix introducing short-term trend in Area in good condition (field 6.4) to support expert opinion in assessing a habitat with more than (>) 25% not in good condition as 'Unfavourable-inadequate' or 'Unfavourable-bad'.

Short-term trend **Direction (6.4)**	**Habitat condition is not Favourable, but no significant issues.**	**Habitat condition is not Favourable with significant issues.**
Increasing	Unfavourable-inadequate	Unfavourable-bad
Stable	Unfavourable-inadequate	
Decreasing	Unfavourable-bad	
Uncertain / Unknown	Unfavourable-inadequate/ Unfavourable-bad [see note *]	

* Expert opinion required. If the trend is uncertain/unknown expert judgment should be used to assess if the habitats should be considered Unfavourable-bad under precautionary principle, or if Unfavourable-inadequate is more appropriate considering the current status of the habitat, and any other additional information available.

2.5.3 Typical species

Typical species were not used directly in the assessment of conservation status for habitat structure and function as a comprehensive list of typical species for each habitat was not available. However, the status of characteristic species, which may include typical species, was considered when the condition of individual sites was assessed using Common Standards Monitoring (CSM) Guidance. CSM data were used to assess the Area of habitat in 'good' and 'not good' condition (field 6.1). Species were a component of the attributes assessed under CSM. Therefore, an assessment of species is considered to have formed part of the reporting under field 6.1 which supported the Habitats Structure and Function assessment (field 10.3). This is the same approach as was taken by the UK in the 2013 and 2019 Article 17 reporting.

There are some typical species fields present in the reporting pro-formas (field 6.6 and 6.7), but these are pre-filled with "No change in typical species in comparison to the previous reporting round" (6.6a) and the remaining fields are optional only completed when specific information is available.

2.6 Future prospects

The data fields used to gather information for this section can be found in table 11.

Table 11. Data collection fields for Section 2.6 as listed in the UK Guidance (Habitats), and which documents should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
9. Future prospects	9.1ai: Future trends of parameters Range	Required	×	✓
	9.1aii: Future prospects conclusion Range	Required	✓	✓
	9.1bi: Future trends of parameters Area covered by habitat	Required	×	✓
	9.1bii: Future prospects conclusion Area covered by habitat	Required	✓	✓
	9.1ci: Future trends of parameters Structure and function	Required	×	✓
	9.1cii: Future prospects conclusion Structure and function	Required	✓	✓
	9.2: Additional information	Optional	✓	×
10. Conclusions	10.4: Future prospects	Required	✓	✓

The status of the Future prospects of a habitat was assessed by:

- identifying the Future prospects of Range, Area, and Structure and functions; and
- selecting a conclusion on Future prospects.

2.6.1. Future prospects of Range, Area, and Structure and functions

Reporting of Future prospects follows the Bern reporting approach with the exception of integrating nitrogen deposition critical load exceedance, as detailed below (2.5.3). In addition, some clarity is provided in this document on evaluating the future trends.

For Range and Area, the following thresholds were used to guide the selection of future trends:

- negative future trends equate to an expected decline of less than (<) 1% per year;
- positive future trends equate to an expected increase of less than (<) 1% per year;
- very negative future trends equate to an expected decline of more than or equal to (≥) 1% per year;
- very positive future trends equate to an expected increase of more than or equal to (≥) 1% per year.

For Structure and functions, the future trend referred to the area of habitat in good condition, and the difference between negative/very negative and positive/very positive trends was based on whether declines/improvements were expected to be limited or moderate (negative/positive trend) or more substantive (very negative/very positive trend).

Although the approach to determine the future trends and Future prospects provides some objectivity and consistency, judgements on future trends are inevitably subjective, depending on the knowledge-base and outlook of the individuals involved.

2.6.2 Future prospects Conclusions

Future prospects were assessed using the relevant section of the general evaluation matrix for assessing conservation status (see Appendix 2 Table A2A). In order to gather the information for the general evaluation matrix, an extra matrix was created to evaluate whether the future prospect for a habitat was Good, Poor, bad, or Unknown. This approach is the same as in Bern reporting, but we have summarised the Bern guidance into Table 12 below. This information is also available in Appendix 2 Table D1 in the UK Habitat Guidance.

Table 12. Matrix combining the future trends with the current conservation status of each parameter to decide on its Future prospects. The likely balance between anticipated impacts from threats and potential improvements from measures and other remediating factors (column 1) were considered and used to determine the future trend (column 2). The future trend was then combined with the current conservation status (column 3) to determine the Future prospects (column 4, where cells are split, left hand cells refer to first future trend option, right hand cell refer to second future trend option).

Balance between anticipated threats and improvements	Future trend	Current conservation status of parameter	Future prospects
Threat impacts and improvements equal; threats mostly insignificant or medium-impact; status of parameter not expected to change	Overall stable	Favourable	Good
		Unfavourable-inadequate	Poor
		Unfavourable-bad	Bad
		Unknown	Unknown
Threat impacts exceed improvements irrespective of measures taken; threats mostly high- or medium-impact; status of parameter expected to decline	Negative/very negative	Favourable	Poor / Bad
		Unfavourable-inadequate	Poor / Bad
		Unfavourable-bad	Bad
		Unknown	Poor / Bad
Improvements exceed threat impacts; threats mostly low or no impact; status of parameter expected to improve	Positive/very positive	Favourable	Good
		Unfavourable-inadequate	Poor / Good
		Unfavourable-bad	Poor / Good
		Unknown	Poor / Good
Threats and/or measures poorly understood, not possible to predict balance between anticipated threats and improvements	Unknown	Favourable	Unknown
		Unfavourable-inadequate	
		Unfavourable-bad	
		Unknown	

2.6.3 Nitrogen deposition

An additional step was taken for 47 terrestrial habitats (43 in England, 36 in Wales, 35 in Scotland, and 28 in Northern Ireland) that were known to be sensitive to Nitrogen (N) deposition and had an assigned N Critical Load (N CL) (see Appendix 7). For these habitats:

- where the estimated area of habitat N CL exceedance was >25%, the Future prospects for Structure and functions were always reported as Unfavourable-bad; and
- where N CL exceedance was between 5% and 25%, the Future prospects for Structure and functions were reported as at least Unfavourable-inadequate.

Notes are included under field 9.2 to explain whether the Future prospects for Structure and functions took into account the level of N CL exceedance.

Although the approach to determine the future trends and Future prospects provides some objectivity and consistency, judgements on future trends are inevitably subjective, depending on the knowledge-base and outlook of the individuals involved.

2.7 Overall conservation status for habitats

The data fields used to gather information for this section can be found in table 13.

Table 13. Data collection fields for Section 2.7 as listed in the UK Guidance (Habitats), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
10. Conclusions	10.5: Overall assessment of Conservation Status	Required	✓	✓
	10.6: Overall trend in Conservation Status	Required	✓	✓
	10.7ai: Change in overall Conservation Status Change	Optional	×	✓
	10.7aii: Change in overall trend in Conservation Status Change	Optional	×	✓
	10.7bi: Change in overall Conservation Status Genuine change	Optional	×	✓
	10.7bii: Change in overall trend in Conservation Status Genuine change	Optional	×	✓
	10.7ci: Change in overall Conservation Status Improved knowledge or more accurate data	Optional	×	✓
	10.7cii: Change in overall trend in Conservation Status Improved knowledge or more accurate data	Optional	×	✓
	10.7di: Change in overall Conservation Status Different method	Optional	×	✓
	10.7dii: Change in overall trend in Conservation Status Different method	Optional	×	✓
	10.7ei: Change in overall Conservation Status No information	Optional	×	✓
	10.7eii: Change in overall trend in Conservation Status No information	Optional	×	✓
	10.7fi: Change in overall Conservation Status Other reasons	Optional	×	✓
	10.7fii: Change in overall trend in Conservation Status Other reasons	Optional	×	✓
	10.7gi: Change in overall Conservation Status Main reason	Optional	×	✓
	10.7gii: Change in overall trend in Conservation Status Main reason	Optional	×	✓
	10.8: Additional information	Optional	✓	×

2.7.1 Overall conservation status assessment

The assessment of the Overall conservation status of a habitat was based on the parameter Conclusions for the Range (10.1), Area (10.2), Structure and functions (10.3), and Future prospects (10.4) of a habitat using the general evaluation matrix (see Appendix 2 Table A2A).

2.7.2 Overall conservation status assessment trend

The Overall trend in conservation status (10.6) was assessed using the evaluation matrix below (Table 14). This matrix is the same as is outlined in the Bern guidance. This matrix is also available as Appendix 1 Table B in the UK Habitats Guidance.

Table 14. Evaluation matrix for trend in overall conservation status. Matrix shows the relationship between the Overall trend in conservation status (left-hand column) and the number of short-term trends that are increasing, stable, declining, or unknown/ uncertain. The trends are considered for Range, Area, and Structure and function, therefore, each row has a maximum summed value of 3 (colour scaled from lightest (0) to darkest blue (3)).

Overall trend in conservation status	Number of short-term trend of parameters (Range, Area, and Structure and function)			
	Increasing	**Stable**	**Decreasing**	**Unknown/ uncertain**
Improving	3	0	0	0
	2	1	0	0
	1	2	0	0
Stable * The overall trend in conservation status is stable only in cases of moderate declines (< 1% per year)	0	3	0	0
	2	0	1	0
	2	0	0	1
	0	2	0	1
	1	1	1*	0
	1	1	0	1
Deteriorating ** The overall trend in conservation status is deteriorating only in cases of important declines (> 1% per year)	0	0	3	0
	1	0	2	0
	0	1	2	0
	0	0	2	1
	0	2	1	0

	1	1	1**	0
	0	1	1	1
Unknown	0	0	0	3
	1	0	0	2
	0	1	0	2
	0	0	1	2
	1	0	1	1

2.7.3 Change in conservation status

As this is the first time FCS that has been assessed at a country level rather than just at a UK level, assessing the change in conservation status was not possible in country-level reporting. An assessment of FCS change will be undertaken by JNCC in the UK report, to be published by/in January 2028.

3. Species assessments (excluding birds)

This section outlines the approach to the assessment of the species (excluding birds) within the country habitats regulations reporting.

CNCBs were responsible for gathering the data and assessing the FCS of all terrestrial species at a country scale. Data sources used for species reporting were recorded in field 4.1 of the Species reporting pro-forma. As with previous Article 17 reporting, marine mammal assessments were at a UK-scale only. Marine mammals are highly mobile species ranging widely throughout the UK Exclusive Economic Zone (EEZ) making country-level reporting less relevant. Assessments were undertaken by JNCC with regular discussion and review from the Interagency Marine Mammal Working Group (IAMMWG) to agree the assessments. The "UK guidance to be used when undertaking the 'Habitats Regulations reporting' of UK species" (UK Guidance (Species)) and Bern Guidance were the primary guidance. Where the approach deviates from the Bern Guidance, or additional information is required, this has been documented within this section.

Field numbers mentioned relate to the field numbers within the UK Guidance (Species). A full list of these fields can be found in Appendix 1 Table A1B.

3.1 Species included

The data fields used to gather information for this section can be found in table 15.

Table 15. Data collection fields for Section 3.1 as listed in the UK Guidance (Species), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
1. General information	1.1: Country	Required	×	✓
	1.2: Species code	Required	✓	×
	1.3: Species scientific name	Required	✓	×
	1.4: Alternative species scientific name	Optional	✓	×
	1.5: Common name	Optional	✓	×
4. Biogeographical and marine regions	4.1: Biogeographic or marine region where the species occurs	Required	✓	×
	4.2: Sources of information	Required	✓	×

3.1.1 List of species included

A list of the species included in Habitats Regulations reporting, and which countries made assessments on them, is available in Appendix 4 Table A4B. These species were those listed on Annexes II, IV and/or V of the Habitats Directive (as retained in UK legislation).

3.1.2 Changes to species list

There were some changes to the list of species included from the 2019 Article 17 reporting. A summary of these changes can be found in Table 16 with further detail provided below.

There were also some changes to the species codes. Details on where a different code was used from the 2019 Article 17 reporting can be found in Table 17.

Table 16. Species where changes have been made for 2019–2024 Habitats Regulations reporting. Numbers in the 'Reporting change' column relate to the reasoning paragraphs below.

Species scientific name	Species common name	Species code	Reporting change
Eubalaena glacialis	Northern right whale	S1348	Removed from reporting due to no recent sightings (see Section 3.1.2.1. *Removal of species from reporting*).
Monodon monoceros	Narwhal	S2626	
Peponocephala electra	Melon-headed whale	S6298	
Lagenodelphis hosei	Fraser's dolphin	S5023	
Mesoplodon densirostris	Blainville's beaked whale	S2625	Grouped into one species assessment 'Beaked Whale' (*Ziphiidae*), S2625-S2035-S5034-S2038-S2037-S5033. (see Section 3.1.2.2. *Grouping beaked whales*)
Ziphius cavirostris	Cuvier's beaked whale	S2035	
Mesoplodon europaeus	Gervais' beaked whale	S5034	
Mesoplodon bidens	Sowerby's beaked whale	S2038	
Mesoplodon mirus	True's beaked whale	S2037	
Hyperoodon ampullatus	Northern bottlenose whale	S5033	
Stenella coeruleoalba	Striped dolphin	S2034	Species occurrence changed from Vagrant to Resident (see Section 3.1.2.3.. *Species occurrence changes*).
Megaptera novaeangliae	Humpback whale	S1345	
Lithothamnion corallioides	Maerl Lithothamnium	S1376	Removed from spreadsheet, now reported as a habitat (See Section 3.1.2.4. *Maerl reporting*).
Phymatolithon calcareum	Maerl	S1377	
Phocoena phocoena	Harbour porpoise	S1351	Reporting at a UK scale but now also under: North Sea MU, West Scotland MU and Celtic and Irish Seas MU (see Section 3.1.2.5. *Use of different geographical scales for marine mammals*).
Tursiops truncatus	Bottlenose dolphin	S1349	Reporting at a UK scale but now also under: Coastal, Coastal West Scotland and the Hebrides MU, Coastal East Scotland MU, Greater North Sea MU, Offshore Channel and South West England MU, Coastal West Channel MU, Irish Sea MU, Oceanic waters MU. (see Section 3.1.2.5. *Use of different*

Species scientific name	Species common name	Species code	Reporting change
			geographical scales for marine mammals; and Section 3.1.2.6. *Differentiating between coastal and bottlenose dolphin populations*)

3.1.2.1 Removal of species from reporting

Northern right whale, Narwhal, Melon-headed whale, and Fraser's dolphin were removed from reporting based no recent sightings, as informed by various resources. Fraser's dolphin has only had 1 confirmed sighting since 1996, there have been no records of Melon-headed whale in UK waters in the last 40+ years, and no recent records for Narwhal.

3.1.2.2 Grouping beaked whales

Grouping of five beaked whale species (Cuvier's beaked whale, True's beaked whale, Sowerby's beaked whale, Blainville's beaked whale and Northern Bottlenose whale) into one 'regularly occurring' beaked whale group follows the approach used by the SCANS survey programme (the main source of effort-related data for many UK species). These species are data-poor individually due to their predominantly offshore distribution and deep diving and cryptic nature; therefore, grouping of the species enables more meaningful outputs for species which share similar distributions and sensitivity to pressures and threats.

3.1.2.3 Species occurrence changes

Striped dolphin: Analysis of striped dolphin sightings and strandings have seen a steady increase over the last three decades, likely as a result of climate change, and therefore it is considered justified to amend this species from vagrant to resident in UK waters.

Humpback whale: Photo-identification studies have identified that the UK is likely to be an important feeding location for humpback whales along a migratory route. Continued annual observations of this species in UK waters suggests they should be recognised as resident in the assessment process.

3.1.2.4 Maerl reporting

Now reported as a habitat (S1376-S1377). See Appendix 5 for details.

3.1.2.5 Use of different geographical scales for marine mammals

In previous Article 17 reporting, assessments occurred at UK EEZ scale only. In the 2019–2024 Habitats Regulations reporting marine mammals were assessed at UK-level, as country-level reporting has less relevance to these highly mobile species. Therefore, assessing at wider scales produced more relevant outputs. However, within the EEZ it was possible to produce outputs at smaller scales (such as Management Unit scale) that were still ecologically relevant but takes into account jurisdictional boundaries and divisions already used for the management of human activities (e.g. ICES divisions used for the

collection of fisheries data and management; spatial scale used for assessment of environmental impacts of marine developments). Following discussions with CNCBs, indicative assessments were drafted for bottlenose dolphin and harbour porpoise at a Management Unit (MU) level to support management and policy needs while also producing outputs at a relevant scale for other reporting obligations. However, the final conservation status for both these species was reported at UK level.

3.1.2.6 Differentiating between coastal and bottlenose dolphin populations

Two distinct ecotypes of bottlenose dolphin are recognised in UK waters which exhibit different ecologies and behaviours; a wide-ranging offshore type, and an inshore coastal type. Therefore, coastal populations of bottlenose dolphin were assessed separately for this reporting round under 'bottlenose dolphin (coastal UK)' to recognise the difference between the offshore and coastal ecotypes. This approach aligns with other assessments such as OSPAR, therefore, it enabled outputs that effectively feed into wider policy decisions. However, please note, that the 'bottlenose dolphin (UK)' assessment may also include this coastal ecotype as it is not possible to distinguish between offshore and coastal ecotypes during the large-scale surveys used to assess populations. 'Bottlenose dolphin (coastal UK)' were assessed using dedicated photo-identification monitoring programmes of key coastal populations.

Table 17. Summary of changes to species codes for the 2019–2024 Habitats Regulations reporting round.

Species scientific name	Species common name	Species Code 2019–2024	Species code in Article 17 reporting	Reported in
Castor fiber	Beaver	S1337	New to 2019–2024 reporting	England, Scotland, *
Euplagia quadripunctaria	Jersey tiger moth	S6199	S1078	England
Cottus gobio all others	Bullhead	S6965	S1163	England, Wales
Epidalea calamita	Natterjack toad	S6284	S1202	England, Scotland, Wales
Pelophylax lessonae	Pool frog	S6981	S1207	England
Hamatocaulis vernicosus	Slender green feather- moss	S6216	S1393	All countries
Vandenboschia speciosa	Killarney fern	S6985	S1421	All countries
Coregonus lavaretus	Whitefish	S6353	S2494	All countries
Pusa hispida	Ringed seal	S6305	S2640	UK-level
Pagophilus groenlandicus	Harp Seal	S2639	S5018	UK-level
Physeter macrocephalus	Sperm Whale	S2624	S5031	UK-level

* Beaver was not reported for Wales as, at the time of reporting, beavers were not a protected species in Wales.

3.2 Species range

The data fields used to gather information for this section can be found in table 18.

Table 18. Data collection fields for Section 3.2 as listed in the UK Guidance (Species), and which documents should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
5. Range	5.1: Surface area	Required	×	✓
	5.2: Short-term trend Period	Required	✓	×
	5.3: Short-term trend Direction	Required	✓	×
	5.4a: Short-term trend Magnitude Estimated Minimum	Optional	✓	×
	5.4b: Short-term trend Magnitude Estimated Maximum	Optional	✓	×
	5.4c: Short-term trend Magnitude Pre-defined range	Optional	✓	×
	5.4d: Short-term trend Magnitude Unknown	Optional	✓	×
	5.4e: Short-term trend Magnitude Type of estimate	Optional	✓	×
	5.4f: Short-term trend Magnitude Rate of decrease	Required	×	✓
	5.5: Short-term trend Method used	Required	✓	×
	5.6: Long-term trend Period	Optional	✓	×
	5.7: Long-term trend Direction	Optional	✓	×
	5.8: Long-term trend Magnitude	Optional	✓	×
	5.8a: Long-term trend Magnitude Minimum	Optional	✓	×
	5.8b: Long-term trend Magnitude Maximum	Optional	✓	×
	5.8c: Long-term trend Rate of decrease	Optional	×	✓
	5.9: Long-term trend Method used	Optional	✓	✓
	5.10a: Favourable Reference Range Area	Required	✓	✓
	5.10b: Favourable Reference Range Pre-defined FRV increment	Required	✓	✓
	5.10c: Favourable Reference Range Unknown	Required	✓	✓
	5.10d: Favourable Reference Range Method used	Required	✓	✓
	5.10e: Favourable Reference Range Quality of Information	Required	✓	✓
	5.11a: Change and reason for change in surface area of range Change	Required	✓	×
	5.11b: Change and reason for change in surface area of range Genuine change	Required	✓	×
	5.11c: Change and reason for change in surface area of range Improved knowledge or more accurate data	Required	✓	×
	5.11d: Change and reason for change in surface area of range Different method	Required	✓	×
	5.11e: Change and reason for change in surface area of range No information	Required	✓	×
	5.11f: Change and reason for change in surface area of range Other reasons	Required	✓	×
	5.11g: Change and reason for change in surface area of range Main reason	Required	✓	×
	5.12: Additional information	Optional	✓	×
11. Conclusions	11.1: Range	Required	✓	✓

The range of a species was defined as the area enclosed by the outer limits of its distribution in the UK and for marine species in UK waters. Range status was assessed by (further detail in Appendix 6):

- producing a distribution map;
- using a modelling tool to calculate the range surface area or GIS to measure range surface area from modelled distribution;
- assessing information on trends in range surface area;
- comparing the current range surface area with a Favourable Reference Range; and
- determining a conclusion on range by applying thresholds/rules as set out in an evaluation matrix

3.2.1 Range surface area calculation

Detail on the range calculation can be found in Appendix 6. Feature range was previously mapped at UK scale (2019 Article 17 reporting) using data provided by CNCBs.

Each features range was mapped at country scale by JNCC using data provided by the countries and a range mapping tool (see Appendix 6). A standardised approach to mapping range for each country was adopted to ensure consistency in reporting.

3.2.2 Range trends

For both terrestrial and marine species, the assessment of trend in Range is the same as outlined in the Bern guidance except for the field short-term trend magnitude, which has an additional field “rate of decrease” (5.4f). This field is completed if the short-term surface range trend direction (5.1) is ‘decreasing’, and specialists provided an estimate of the rate of decline within the country-level reports. Declines were reported to be either:

- 1% or less per year (during the reporting period), or
- more than 1% per year (during the reporting period).

This information helped to establish if a declining trend would contribute to an Unfavourable-inadequate or Unfavourable-bad parameter conclusion, respectively using the Range conclusion matrix (Table 19). The same field was also available in long-term trend but was optional. If completed, this field was not used to assess conservation status for Range.

The range reporting fields were updated from previous reporting rounds to align with Bern reporting. Detail on previous reporting round fields can be found in the 2019 Bern guidance.

3.2.3 Range Conclusions

Range Conclusions were assessed using relevant section of the general evaluation matrix for assessing conservation status (see Appendix 2 Table A2B). This approach was the same as in Bern reporting, but a summarised table of the Bern guidance (Table 19) was used. This information is also available in Appendix 2 Table A in the UK Species Guidance.

Table 19. Favourable Reference Range and short-term trend Conclusions. Relationship between the short-term trend in Range surface area (top rows), the current Range surface area and Favourable Reference Range (FRR) (left-hand column), and the Conclusion on conservation status of the range of a species (the coloured cells indicate which conclusion should be applied).

	Short-term trend in Range 2019–2024			
	Unknown or uncertain	**Increasing or stable**	**Decline 1% or less per year**	**Decline >1% per year**
Range area or FRR Unknown	Unknown	Unknown or Favourable	Unfavourable-inadequate	Unfavourable-bad
Range area > or = FRR	Unknown or Favourable	Favourable	Unfavourable-inadequate	Unfavourable-bad
Range area up to 10% below FRR	Unfavourable-inadequate	Unfavourable-inadequate	Unfavourable-inadequate	Unfavourable-bad
Range area >10% below FRR	Unfavourable-bad	Unfavourable-bad	Unfavourable-bad	Unfavourable-bad

3.3 Population

The data fields used to gather information for this section can be found in table 20.

Table 20. Data collection fields for Section 3.3 as listed in the UK Guidance (Species), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
6. Population	6.1: Population Year or Period	Required	✓	×
	6.2a: Population size Unit	Required	×	✓
	6.2b: Population size Minimum	Required	✓	×
	6.2c: Population size Maximum	Required	✓	×
	6.2d: Population size Best single value	Required	✓	×
	6.3: Population size Type of estimate	Required	✓	×
	6.4: Population size Quality of extrapolation to reporting unit	Required	✓	✓
	6.5a: Additional population size Unit	Optional	✓	✓
	6.5b: Additional population size Minimum	Optional	✓	✓
	6.5c: Additional population size Maximum	Optional	✓	✓
	6.5d: Additional population size Best single value	Optional	✓	✓
	6.5e: Additional population size Type of estimate	Optional	✓	✓
	6.6: Population size Method used	Required	✓	×
	6.7: Population Short-term trend Period	Required	✓	×
	6.8: Population Short-term trend Direction	Required	✓	×
	6.9a: Population Short-term trend Magnitude Estimated Minimum	Required	✓	×
	6.9b: Population Short-term trend Magnitude Estimated Maximum	Required	✓	×
	6.9c: Population Short-term trend Magnitude Pre-defined range	Required	✓	×
	6.9d: Population Short-term trend Magnitude Unknown	Required	✓	×
	6.9e: Population Short-term trend Magnitude Type of estimate	Required	✓	×
	6.9f: Population Short-term trend Magnitude Rate of decrease	Required	×	✓
	6.10: Population Short-term trend Method used	Required	✓	×

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
	6.11: Population Long-term trend Period	Optional	✓	×
	6.12: Population Long-term trend Direction	Optional	✓	×
	6.13a: Population Long-term trend Magnitude Minimum	Optional	✓	×
	6.13b: Population Long-term trend Magnitude Maximum	Optional	✓	×
	6.13c: Population Long-term trend Magnitude Confidence Interval	Optional	✓	×
	6.13d: Population Long-term trend Rate of decrease	Optional	×	✓
	6.14: Population Long-term trend Method used	Optional	✓	×
	6.15ai: Favourable reference population Size	Required	✓	✓
	6.15aii: Favourable reference population Unit	Required	×	✓
	6.15b: Favourable reference population Pre-defined FRV increment	Required	✓	✓
	6.15c: Favourable reference population Unknown	Required	✓	✓
	6.15d: Favourable reference population Method used	Required	✓	✓
	6.15e: Favourable reference population Quality of information	Required	✓	✓
	6.16a: Change and reason for change in population size Change	Required	✓	×
	6.16b: Change and reason for change in population size Genuine change	Required	✓	×
	6.16c: Change and reason for change in population size Improved knowledge or more accurate data	Required	✓	×
	6.16d: Change and reason for change in population size Different method	Required	✓	×
	6.16e: Change and reason for change in population size No information	Required	✓	×
	6.16f: Change and reason for change in population size Other reasons	Required	✓	×
	6.16g: Change and reason for change in population size Main reason	Required	✓	×
	6.17: Additional information	Optional	✓	×
	6:18: Population Age structure, mortality and reproduction	Required	×	✓
11. Conclusions	11.2: Population	Required	✓	✓

Population status was one of the fundamental attributes used to assess the conservation status of a species by:

- estimating the population size;
- assessing trends in population size;
- comparing the population size with a Favourable Reference Population (FRP); and
- determining a Conclusion on Population by applying thresholds/rules as set out in an evaluation matrix.

3.3.1 Population estimate

In the 2019 Article 17 reporting round, mandatory population units were introduced for population estimates for all species. These units did not necessarily align well with the data available from country monitoring. In this reporting round, the reporting units used were agreed with the CNCBs and aligned across all four countries to create a UK agreed unit (field 6.2a). There was also the opportunity to carry out the Population assessment using a different unit from the UK agreed ones, recognising that there were country and species-

specific methods and approaches to collecting and collating species data. If additional population units were used, then that information was reported in field 6.5. Species that were reported to the Bern Convention have the same unit required for Bern reporting. Where the UK agreed unit has been converted from a different reporting unit, the quality of the extrapolation can be indicated in field 6.4.

Some marine mammals were assessed at different Management Units as well as at a UK scale. Detail on this can be found in Section 3.1.2.

3.3.2 Population trends

For terrestrial species, the assessment of trend in Population was the same as outlined in the Bern guidance except for the field short-term trend magnitude, which had an additional field “rate of decrease” (6.9f). This field was completed if the short-term Population trend direction (6.8) was ‘decreasing’, and specialists provided an estimate of the rate of decline within the country-level reports. Declines were reported to be either:

i) 1% or less per year (during the reporting period), or
ii) more than 1% per year (during the repowering period).

This information helped to establish if a declining trend would contribute to an Unfavourable-inadequate or Unfavourable-bad parameter conclusion, respectively using the Range conclusion matrix (Table 21). The same field was also available in long-term trend but was optional. If completed, this field was not used to assess conservation status for Population.

The Range reporting fields were updated from previous reporting rounds to align with Bern reporting. Detail on previous reporting round fields can be found in the 2019 Bern guidance.

3.3.2.1 Marine species

For mobile marine species, a minimum of three UK population estimates were required for trends to be assessed. Thus, for some species there were insufficient data points from which to draw conclusions on trends in Population estimates. This method is an industry standard and was used in previous Article 17 reporting.

Population estimates were calculated using the most recent large-scale effort-based surveys (e.g., SCANS-IV, ObSERVE-II); however, SCANS-IV was unable to survey a block off north-west Scotland which had been included in previous survey iterations. This ultimately impacted on the calculation of updated population estimates for cetacean species, and several updated population estimates are likely to be an underestimate. For species most impacted by the missing survey block (i.e., the block accounted for more than 50% of the total population during the previous SCANS survey), the IAMMWG agreed that population estimates would not be updated for this reporting round, and population trend magnitude and direction would be assessed as Unknown.

3.3.3 Population Conclusions

The conservation status assessment of Population partially involved an assessment of how strongly population reproduction, mortality and age structure deviated from normal. As with all previous UK Article 17 reporting, a specific field to address this parameter was added (6.18). Detail on how to complete this field can be found in the UK Guidance (Species).

However, information has historically been too scarce to only use this field to draw Population Conclusions. To mitigate this data gap and align with previous reporting approaches, the short-term trend in population size was taken as a proxy measure of the degree to which these aspects of population status were imbalanced, as follows:

- population stable or increasing = reproduction/ mortality/ age structure normal;
- population declining by less than 1% per year = reproduction/ mortality/ age structure moderately imbalanced;
- population declining by more than 1% per year = reproduction/ mortality/ age structure strongly imbalanced.

Table 21. FRP and short-term Conclusions. Relationship between the short-term trend in Population (top rows), the current population size and the FRP (left-hand column), and the Conclusion on conservation status of the Population of a species (the coloured cells emphasise which conclusion should be applied). This table can also be found in Appendix 2 Table B of the UK Species Guidance.

	Short-term trend in Population 2019–2024			
	Unknown or uncertain	**Increasing or stable**	**Decline 1% or less per year**	**Decline >1% per year**
Population or FRP Unknown	Unknown	Unknown or Favourable	Unfavourable-inadequate	Unfavourable-bad
Population > or = FRP	Unknown or Favourable	Favourable	Unfavourable-inadequate	Unfavourable-bad
Population up to 25% below FRP	Unfavourable-inadequate	Unfavourable-inadequate	Unfavourable-inadequate	Unfavourable-bad
Population >25% below FRP	Unfavourable-bad	Unfavourable-bad	Unfavourable-bad	Unfavourable-bad

3.4 Habitat for the species

The data fields used to gather information for this section can be found in table 22.

Table 22. Data collection fields for Section 3.4 as listed in the UK Guidance (Species), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	**UK reporting field (as in UK guidance)**	**Optional/ required**	**Approach to completing field**	
			See Bern Guidance	**See Approach doc**
7. Habitats for the species	7.1a: Is area of occupied habitat sufficient (for Long-term survival)?	Required	✓	✓
	7.1b: Is quality of occupied habitat sufficient (for long-term survival)?	Required	✓	✓
	7.1c: Is there a sufficiently large area of occupied and unoccupied habitat of suitable quality (for long-term survival)?	Required	×	✓

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
	7.2a: Sufficiency of area and quality of habitat Method used - Area of habitat	Required	✓	×
	7.2b: Sufficiency of area and quality of habitat Method used - Quality of habitat	Required	✓	×
	7.3: Short-term trend Period	Required	✓	×
	7.4: Short-term trend Direction	Required	✓	×
	7.5: Short-term trend Method used	Required	✓	×
	7.6: Long-term trend Period	Optional	✓	×
	7.7: Long-term trend Direction	Optional	✓	×
	7.8: Long-term trend Method used	Optional	✓	×
	7.9: Additional information	Optional	✓	×
11. Conclusions	11.3: Habitats for the species	Required	✓	✓

Habitat for the species was interpreted to take account of the following:

- all physical and biological requirements (abiotic and biotic) of the species (including elements like the availability of prey, but also fragmentation where appropriate);
- all stages of a species' life cycle should be covered and seasonal variation in a species' requirements reflected in the assessment.

Overall this parameter was assessed by:

- assessing whether the area of Habitat for the species was sufficient to achieve FCS;
- assessing whether the quality of Habitat for the species was sufficient to achieve FCS;
- combining these two judgements to look at overall sufficiency of Habitat for the species; and,
- determining the short-term trend in area and quality of Habitat for the species during the 2019–2024 short-term period.

3.4.1 Sufficiency of area and quality of habitat for the species

The Bern Resolution 8 reporting required reporting on:

a) Is area of occupied habitat sufficient (for long-term survival)? YES/NO/Unknown
b) Is quality of occupied habitat sufficient (for long-term survival)? YES/NO/Unknown
c) If 'No' to a), is there a sufficiently large area of **unoccupied** habitat of suitable quality (for long-term survival)? YES/NO/Unknown

The UK interpretation of these Bern guidelines was that the question in Field 7.1c was incorrectly phrased because there was no value in purely establishing if there was sufficient area and quality of only unoccupied habitat alone. If the answer to Field 7.1a and/or Field 7.1b was 'No', or 'Unknown', then it was deemed that what was required for the assessment is whether there was a sufficient area and quality of both occupied AND unoccupied habitat. That is, if there wasn't sufficient area and quality of occupied Habitat for the species for long term survival of the species, is there sufficient area and quality of occupied and unoccupied Habitat for the species for long-term survival of the species? This takes into consideration whether the species would be able to expand into the currently unoccupied habitat, if circumstances allowed. The UK interpretation of 'for long-term survival' was to equate this with 'to maintain the species at FCS' (in situations where all other parameter Conclusions are Favourable (i.e. the Range, Population and Future prospects)).

3.4.2 Habitat for the species Conclusions

Expert opinion was required in some cases for the habitat for species conservation status assessment. Therefore, various assessment matrices were created (Tables 23, 24, 25, and 26) to guide expert opinion in making consistent decisions in assessing the area and quality of habitat for species across habitats and countries. Expert opinion reasoning was captured in field 7.9 additional information.

Table 23. Matrix to evaluate the contribution of area, quality, and short-term trend (blue) of **occupied habitat** (7.1a and 7.1b) in the habitat for species conservation status assessment.

		Is the area of occupied habitat sufficient (7.1a)?				
		YES				NO / Unknown
		Increasing	Stable	Decreasing	Uncertain / Unknown	All trends
Is the quality of occupied habitat sufficient (7.1b)?	YES	Favourable	Favourable	Unfavourable-inadequate	Favourable / Unfavourable-inadequate / Unknown*	
	NO	(Table C2)				
	Unknown					

*Expert opinion required, use Table C3 as guidance, capture reasoning in field 7.9.

Table 24. Matrix to evaluate the contribution of area, quality, and trend (blue) of **occupied and unoccupied** habitat (7.1c) in the habitat for species conservation status assessment. Trend relates to the overall area and quality of the (occupied) habitat.

Short-term trend **Direction (7.4)**	**Is there a sufficiently large area of unoccupied habitat of suitable quality (7.1c)?**		
	Yes	No	Unknown
Increasing	Favourable	Unfavourable-inadequate / Unfavourable-bad**	Unknown
Stable	Favourable		
Decreasing	Unfavourable-inadequate		
Uncertain	Favourable/ Unfavourable-inadequate/ Unknown*		
Unknown			

*Expert opinion required, use Table C3 as guidance, capture reasoning in field 7.9.
**Expert opinion required, use Table C4 as guidance, capture reasoning in field 7.9.

Table 25. Matrix to evaluate contribution of uncertain or unknown short-term trends (7.4) to the habitat for species conservation assessment, with the input of expert opinion.

Does the short-term trend give you reason to be concerned that the current area and quality of habitat available for this species will negatively impact the long-term survival of this species?		
Yes	No	Unknown/ Unsure
Unfavourable-inadequate	Favourable	Unknown

Table 26. Matrix to evaluate the extent of insufficiency of occupied and unoccupied habitat (7.1c = NO) to the habitat for species conservation assessment, with the input of expert opinion. Where the extent of insufficiency was uncertain, the precautionary principle was applied and the habitat was classed as Unfavourable-Bad.

		Habitat Area of occupied and unoccupied habitat	
	Expert Opinion	Habitat area is clearly insufficient	Habitat area is insufficient, but not clearly so
Habitat Quality of occupied and unoccupied habitat	Bad quality	Unfavourable-bad	Unfavourable-bad
	Not bad quality	Unfavourable-bad	Unfavourable-inadequate

3.5 Future prospects

The data fields used to gather information for this section can be found in table 27.

Table 27. Data collection fields for Section 3.5 as listed in the UK Guidance (Species), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	**UK reporting field (as in UK guidance)**	**Optional/ required**	**Approach to completing field**	
			See Bern Guidance	**See Approach doc**
10. Future prospects	10.1ai: Future trends of parameters Range	Required	×	✓
	10.1aii: Future prospects of parameters Range	Required	✓	✓
	10.1bi: Future trends of parameters Population	Required	×	✓
	10.1bii: Future prospects of parameters Population	Required	✓	✓
	10.1ci: Future trends of parameters Habitat for species	Required	×	✓
	10.1cii: Future prospects of parameters Habitat for species	Required	✓	✓
	10.2: Additional information	Optional	✓	×
11. Conclusions	11.4: Future prospects	Required	✓	✓

The status of the Future prospects of a species was assessed by:

- identifying the Future prospects of Range, Population, and Habitat for the species; and
- selecting a Conclusion on Future prospects using an evaluation matrix.

3.5.1 Future prospects of Range, Population, and Habitat for the species

Reporting of Future prospects follows the Bern reporting approach with some additional clarity provided in this document on evaluating the future trends.

For Range and Population, the following thresholds were used to guide the selection of future trends:

- negative future trends equate to an expected decline of < 1% per year;
- positive future trends equate to an expected increase <1 % per year;
- very negative future trends equate to an expected decline of ≥ 1% per year;
- very positive future trends equate to an expected increase of ≥ 1% per year.

Although the approach to determine the future trends and Future prospects provides some objectivity and consistency, judgements on future trends are inevitably subjective, depending on the knowledge-base and outlook of the individuals involved.

3.5.2 Future prospects Conclusions

Future prospects were assessed using relevant section of the general evaluation matrix for assessing conservation status (see Appendix 2 Table A2B). In order to gather the information for the general evaluation matrix, an extra matrix was created to evaluate whether the future prospect for a species is Good, Poor, bad, or Unknown. This approach is the same as in Bern reporting, but we have summarised the Bern guidance into Table 28 below. This information is also available in Appendix 2 Table D1 in the UK Guidance (Species).

Table 28. Matrix combining the future trends with the current conservation status of each parameter to decide on the Future prospects of each parameter. The likely balance between anticipated impacts from threats and potential improvements from measures and other remediating factors (column 1) were considered and used to determine the future trend (column 2). The future trend was then combined with the current conservation status (column 3) to determine the Future prospects (column 4).

Balance between anticipated threats and improvements	Future trend	Current conservation status of parameter	Future prospects
Threat impacts and improvements equal; threats mostly insignificant or medium-impact; status of parameter not expected to change	Overall stable	Favourable	Good
		Unfavourable-inadequate	Poor
		Unfavourable-bad	Bad
		Unknown	Unknown
Threat impacts exceed improvements irrespective of measures taken; threats mostly high- or medium-impact; status of parameter expected to decline	Negative/very negative	Favourable	Poor / Bad
		Unfavourable-inadequate	Poor / Bad
		Unfavourable-bad	Bad
		Unknown	Poor / Bad
Improvements exceed threat impacts; threats mostly low or no		Favourable	Good
		Unfavourable-inadequate	Poor / Good

impact; status of parameter expected to improve	Positive/very positive	Unfavourable-bad	Poor	Good
		Unknown	Poor	Good
Threats and/or measures poorly understood, not possible to predict balance between anticipated threats and improvements	Unknown	Favourable	Unknown	
		Unfavourable-inadequate		
		Unfavourable-bad		
		Unknown		

3.6 Overall conservation status for species

The data fields used to gather information for this section can be found in table 29.

Table 29. Data collection fields for Section 3.6 as listed in the UK Guidance (Species), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
11. Conclusions	11.5: Overall assessment of Conservation Status	Required	✓	✓
	11.6: Overall trend in Conservation Status	Required	✓	✓
	11.7ai: Change in overall Conservation Status Change	Optional	×	✓
	11.7aii: Change in overall trend in Conservation Status Change	Optional	×	✓
	11.7bi: Change in overall Conservation Status Genuine change	Optional	×	✓
	11.7bii: Change in overall trend in Conservation Status Genuine change	Optional	×	✓
	11.7ci: Change in overall Conservation Status Improved knowledge or more accurate data	Optional	×	✓
	11.7cii: Change in overall trend in Conservation Status Improved knowledge or more accurate data	Optional	×	✓
	11.7di: Change in overall Conservation Status Different method	Optional	×	✓
	11.7dii: Change in overall trend in Conservation Status Different method	Optional	×	✓
	11.7ei: Change in overall Conservation Status No information	Optional	×	✓
	11.7eii: Change in overall trend in Conservation Status No information	Optional	×	✓
	11.7fi: Change in overall Conservation Status Other reasons	Optional	×	✓
	11.7fii: Change in overall trend in Conservation Status Other reasons	Optional	×	✓
	11.7gi: Change in overall Conservation Status Main reason	Optional	×	✓
	11.7gii: Change in overall trend in Conservation Status Main reason	Optional	×	✓
	11.8: Additional information	Optional	✓	×

3.6.1 Overall conservation status assessment

The assessment of the Overall conservation status of a habitat was based on the parameter Conclusions for the Range (11.1), Population (11.2), Habitat for the Species Conclusion (11.3), and Future prospects (11.4) of a species using the Species general evaluation matrix (Appendix 2 Table A2B).

3.6.2 Overall conservation status assessment trend

The Overall trend in conservation status (10.6) was assessed using the evaluation matrix below (Table 30). This matrix is the same as is outlined in the Bern guidance but is different to the 2019 UK Article 17 approach. This matrix is also available as Appendix 1 Table B in the UK Guidance (Species).

Table 30. Relationship between the Overall trend in conservation status (left-hand column) and the number of short-term trends that are increasing, stable, declining, or unknown/ uncertain. The trends are considered for Range, Population, and Habitat for species (therefore, each row has a maximum summed value of 3).

Overall trend in conservation status	Number of short-term trend of parameters (Range, Population, Habitat for the species)			
	Increasing	**Stable**	**Decreasing**	**Unknown/ uncertain**
Improving	3	0	0	0
	2	1	0	0
	1	2	0	0
Stable * The overall trend in conservation status is stable only in cases of moderate declines (<1% per year)	0	3	0	0
	2	0	1	0
	2	0	0	1
	0	2	0	1
	1	1	1*	0
	1	1	0	1
Deteriorating ** The overall trend in conservation status is deteriorating only in cases of important declines (>1% per year)	0	0	3	0
	1	0	2	0
	0	1	2	0
	0	0	2	1
	0	2	1	0

	1	1	1**	0
	0	1	1	1
Unknown	0	0	0	3
	1	0	0	2
	0	1	0	2
	0	0	1	2
	1	0	1	1

3.6.3 Change in conservation status

As this is the first time FCS has been assessed at a country level rather than just at a UK level, assessing the change in conservation status was not possible in country level reporting. An assessment of FCS change will be undertaken by JNCC in the UK report, to be published in/by January 2028.

4. Supplementary information for habitats and species (excluding birds)

Supplementary information was provided as in the Bern guidance. However, no fields were provided for additional maps, additional information for Biogeographical marine regions sections, or additional information in the Conclusions sections of both species and habitats reports. Specific field deviations are detailed below.

4.1 Information sources

Information sources in field 3.2 for habitats and 4.2 for species were compulsory fields and required both published and unpublished sources to be recorded.

4.2 Information related to Annex V species

The data fields used to gather information for this section can be found in table 31.

Table 31. Data collection fields for Section 4.2 as listed in the UK Guidance (Species), and the documents that should be referred to for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
3. Information related to Annex V species	3.1: Is the species taken in the wild/ exploited?	Required	✓	×
	3.2a: Which of the measures in Art. 9A have been taken? Regulations regarding access to property	Required	✓	×
	3.2b: Which of the measures in Art.9A have been taken? Temporary or local prohibition on the taking of specimens in the wild and exploitation	Required	✓	×
	3.2c: Which of the measures in Art.9A have been taken? Regulation of the periods and or methods of taking specimens	Required	✓	×
	3.2d: Which of the measures in Art.9A have been taken? Application of hunting and fishing rules which take account of the conservation of such populations	Required	✓	×
	3.2e: Which of the measures in Art.9A have been taken? Establishment of a system of licences for taking specimens or of quotas	Required	✓	×
	3.2f: Which of the measures in Art.9A have been taken? Regulation of the purchase, sale, offering for sale, keeping for sale, or transport for sale of specimens	Required	✓	×
	3.2g: Which of the measures in Art.9A have been taken? Breeding in captivity of animal species as well as artificial propagation of plant species	Required	✓	×
	3.2hi: Which of the measures in Art.9A have been taken? Other measures	Required	✓	×
	3.2hii: Which of the measures in Art.9A have been taken? Other Measures description	Required	✓	×
	3.3a: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Unit	Required	✓	×

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 1 min	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 1 max	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 1 unknown	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 2 min	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 2 max	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 2 unknown	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 3 min	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 3 max	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 3 unknown	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 4 min	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 4 max	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 4 unknown	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 5 min	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 5 max	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 5 unknown	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 6 min	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 6 max	Required	✓	×
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 6 unknown	Required	✓	×
	3.4: Hunting bag or quantity take in the wild Method used	Required	✓	×
	3.5: Additional information	Optional	✓	×

Information related to Annex V species was provided in fields 3.1 to 3.5 of the species report. This data is provided to support an assessment of whether exploitation of a species is compatible with achievement of FCS. Fields 3.2 to 3.5 were only completed when an Annex V species which is taken in the wild/exploited in a country was assessed as Unfavourable (Unfavourable-inadequate or Unfavourable-bad) (i.e. not at FCS).

For all mammals and fish (Acipenseridae) species that are taken in the wild or exploited, information on hunting bag or quantity taken in the wild was provided in field 3.3. Specifically, this field recorded the following: the population size in reporting unit, as in field 6.2a; and the quantity taken per hunting season or per year (a specific number, a maximum and minimum value, or unknown). The method used to determine hunting bag or quantity taken in the wild

was also provided in field 3.4. Other relevant information could be provided in additional information field 3.5.

4.3 Pressures and threats

The data fields used to gather information for this section can be found in tables 32 and 33.

Table 32. Data collection fields for Section 4.3 as listed in the UK Guidance (Habitats), and the documents that should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
7. Main pressures	7.1ai: Pressure code	Required	✓	×
	7.1aii: Pressure name	Required	✓	×
	7.1bi: Pressure timing	Required	✓	×
	7.1bii: Pressure ranking	Required	×	✓
	7.2: Sources of information	Optional	✓	×
	7.3: Additional information	Optional	✓	×

Table 33. Data collection fields for Section 4.3 as listed in the UK Guidance (Species), and the documents that should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
8. Main pressures	8.1ai: Pressure or threat code	Required	✓	×
	8.1aii: Pressure or threat name	Required	✓	×
	8.1bi: Pressure timing	Required	✓	×
	8.1bii: Pressure ranking	Required	×	✓
	8.2: Sources of information	Optional	✓	×
	8.3: Additional information	Optional	✓	×

Pressures and threats reporting mostly follows the Bern reporting guidance, definitions, and standard list of codes and categories. The list of pressures has been updated since the previous Article 17 reporting and can be found in Appendix 8. Detail on the crosslinks with the previous pressure reporting codes is available in the Bern guidance.

4.3.1 Changes to previous reporting rounds

In previous reporting rounds, a maximum of 10 pressures and 10 threats could be listed per feature. In this reporting round, pressures and threats were no longer reported separately, and up to 20 pressures were reported for every feature. The timeframe within which the factor is acting also needed to be defined (H7.1bi: S:8.1bi) to discern if a factor is a pressure, a threat, or both. Pressures are defined as acting during the 2019–2024 timeframe, and threats defined as acting within 12 years following the end of the current reporting period.

4.3.2 Differences between UK and Bern approach

Reporting of pressures and threats follows the Bern Guidance except for in relation to the addition of new fields: Scope and Influence (detail below). Neither Scope nor Influence will be included in country-level reporting and UK-level reporting (i.e. not included in Bern reporting).

4.3.2.1 Scope

The Bern Convention have updated their reporting for pressures to include information detailing the Scope of a pressure. Detail on this field can be found in the Bern guidance. However, the UK countries did not include Scope in 2019–2024 Habitats Regulations reporting because: the fields presented significant additional reporting burden; and the fields are percentage range based, and so could not be accurately aggregated to a UK figure for Bern reporting use.

4.3.2.2 Influence

In previous reporting rounds, pressures have been ranked as either having a high importance/impact or a medium importance/ impact. This has been altered in the 2019–2024 Bern reporting round to instead include the influence of a pressure (high, medium or low). The idea behind this change was that the overall impact of a pressure would be assessed via the combination of Timing, Scope and Influence of a pressure. As the UK did not report on Scope (above), it was agreed not to incorporate this change and instead the previous Article 17 reporting of impact reporting of pressure ranking was kept (only High and Medium impact/influence pressures were reported).

4.3.3 Nitrogen deposition reporting

An additional step was taken for habitats sensitive to Nitrogen (N) deposition and which had an assigned Nitrogen Critical Load (N CL) (see Appendix 7). Where it was estimated that more than 25% of a habitat area exceeded the N CL, the new pressure code PK04 (Atmospheric N-deposition) was ranked as high importance/impact, and where 5–25% area of habitat exceeded the N CL this code was ranked as medium importance/impact. Notes were included under field 7.3 in the habitats reports to explain this approach. Previously N deposition had been reported under the category Mixed source air pollution, air-borne pollutants (J03).

4.4 Conservation measures

The data fields used to gather information for this section can be found in table 34 and 35.

Table 34. Data collection fields for Section 4.4 as listed in the UK Guidance (Habitats), and the documents that should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
8. Conservation measures	8.1a: Status of measures Needed	Required	✓	×
	8.1b: Status of measures Status	Required	✓	✓
	8.2: Main purpose of the measures taken	Required	✓	✓
	8.3: Location of the measures taken	Required	✓	×
	8.4: Response to the measures	Required	✓	×
	8.5ai: List of main conservation measures Code	Required	✓	×
	8.5aii: List of main conservation measures Measure	Required	✓	×
	8.5b: Measure ranking	Required	×	✓
	8.6: Additional information	Optional	✓	×

Table 35. Data collection fields for Section 4.4 as listed in the UK Guidance (Species), and the documents that should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
9. Conservation measures	9.1a: Status of measures Needed	Required	✓	×
	9.1b: Status of measures Status	Required	✓	✓
	9.2: Main purpose of the measures taken	Required	✓	✓
	9.3: Location of the measures taken	Required	✓	×
	9.4: Response to the measures	Required	✓	×
	9.5ai: List of main conservation measures Code	Required	✓	×
	9.5aii: List of main conservation measures Measure	Required	✓	×
	9.5b: Measure ranking	Required	×	✓
	9.6: Additional information	Optional	✓	×

4.4.1 Changes to previous reporting rounds

In previous reporting rounds, a maximum of 10 conservation measures could be listed per feature. In this reporting round, up to 20 conservation measures were reported for every feature. The list of conservation measures has been updated since previous Article 17 reporting and can be found in Appendix 9. Detail on the crosslinks with the previous pressure reporting codes are available in the Bern guidance.

4.4.2 Differences between UK and Bern approach

Conservation measure reporting mostly follows the Bern reporting guidance, definitions, and standard list of codes and categories, apart from the few sections outlined below.

4.4.2.1 Status of measures

Bern Resolution 8 reporting 2019–2024 added the additional option of “part of measures identified have been taken” to field H9.1, S10.1. This additional reporting option was not included in the 2019–2024 Habitats Regulations reporting, with reporting options being:

a) Measures identified, but none yet taken;
b) Measures identified and taken; and
c) measures needed but cannot be identified.

4.4.2.2 Scope

A new ‘Scope’ field was added to the Bern Resolution 8 reporting. Detail on this field can be found in the Bern guidance. However, the UK countries agreed not to include Scope in 2019–2024 Habitats Regulations reporting because: the fields presented significant additional reporting burden; and the fields are percentage range based, and so could not be accurately aggregated to a UK figure for Bern reporting use. This field will not be included in country-level reporting nor UK-level reporting (i.e. to Bern).

4.4.2.3 Main purpose of measures taken

In the Bern reporting, multiple options can be selected as the purpose of measures taken with one then identified as the main purpose of measures taken for a feature. The UK Habitats Regulations report simplified reporting by only allowing one main purpose of measure to be identified per feature.

4.5 UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex I habitat types

The UK National Site Network (NSN) is a collection of important high-quality conservation sites that will make a significant contribution to conserving the habitats and species listed in Annexes I and II of the Habitats Directive. The network comprises Special Areas of Conservation (SACs, including Sites of Community Importance (SCIs), priority SCIs (pSCIs) and candidate SACs) and Special Protection Areas (SPAs, covered in Section 5.6). All current UK SACs and SPAs are part of the Bern Convention Emerald Network. Thus, in Bern reporting, this section is reported as the 'Emerald Network'.

4.5.1 Habitats

The data fields used to gather information for this section can be found in table 36.

Table 36. Data collection fields for Section 4.5.1 as listed in the UK Guidance (Habitats), and the documents that should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
11. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex I habitat types	11.1a: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Minimum	Required	✓	×
	11.1b: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Maximum	Required	✓	×
	11.1c: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Best single value	Required	✓	×
	11.2: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Type of estimate	Required	✓	×
	11.3: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Method used	Required	✓	×
	11.4: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat area within the network Direction	Required	✓	×
	11.5: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat area within the network Method used	Required	✓	×
	11.6: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat in good condition Direction	Required	✓	×
	11.7: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat in good condition Method used	Required	✓	×
	11.8: Additional information	Optional	✓	×

The area of habitats inside the NSN was reported in field 11.1. This included habitats inside pSCIs, SCIs, and SACs.

Where possible, these fields were based on information from the 2019–2024 reporting period. Records from before 2019 were used where they were still representative of the surface area of the habitat in 2019–2024.

4.5.2 Species

The data fields used to gather information for this section can be found in table 37.

Table 37. Data collection fields for Section 4.5.2 as listed in the UK Guidance (Species), and the documents that should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
12. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex I habitat types	12.1a: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Minimum	Required	✓	×
	12.1b: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Maximum	Required	✓	×
	12.1c: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Best single value	Required	✓	×
	12.2: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Type of estimate	Required	✓	×
	12.3: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Method used	Required	✓	×
	12.4: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat area within the network Direction	Required	✓	×
	12.5: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat area within the network Method used	Required	✓	×
	12.6: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat in good condition Direction	Required	✓	×
	12.7: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat in good condition Method used	Required	✓	×
	12.8: Additional information	Optional	✓	×

Estimates for population within the network were generally based on data collected through the CSM Scheme/ Site Condition Monitoring scheme and Species Surveillance monitoring. The same population units were used as in population reporting outside of the NSN (see Section 3.3.1). Where possible, these fields were based on information from the 2019–2024 reporting period. Records from before 2019 were used where they were still representative.

4.5.2.1 Marine species

There are relatively few SACs for mobile marine species. However, those for seals and bottlenose dolphins have been well monitored over decades, and trends within individual SACs are relatively well understood. The site information was considered in the context of wider population trends to determine whether numbers in the SAC network were likely stable or otherwise. For harbour porpoise SACs, there are insufficient data to understand trends in abundance within the network. The SACs were designated based on high relative density rather than absolute abundance, and individuals move through and out of the SAC area regularly.

4.5.3 Different country approaches

Different approaches were taken by the countries for completing the fields within this section of habitat and species reporting. The differences largely centred around which sites were included in this section. Detail on each different country approach can be found below:

4.5.3.1 England

For terrestrial habitats, a range of sources have been used to determine the area of Annex I habitats within SAC's. This includes data from Natural England's Designated Sites View system, Habitat Inventories and outputs of the National Capital and Ecosystem Assessment Programme. Estimates of area were then combined with the most recent site monitoring data and/or expert knowledge for consideration of structure and functions.

For terrestrial species, population estimates within the SAC network were based on a combination of CSM data, outputs of species surveillance and verified records provided under license by partners, either directly or via the NBN Atlas.

For inshore marine habitats, extent and condition data were extracted from Natural England's Designated Sites View System. This approach considered not only SACs but also Marine Conservation Zones (MCZs) designated for features which could be translated to Annex I habitats such as intertidal mud designated in a MCZ. Where there were overlaps between site designations these were taken into account to avoid double-counting area.

4.5.3.2 Northern Ireland

For terrestrial habitats all Annex I habitats (Grades A to C, figure 2) within the SAC network were included within the extent figures. The trends for area in good condition were derived from the most recent CSM.

For terrestrial species population counts within the SAC network were derived from a combination of CSM data, species surveillance work and verified Local Environmental Record Centres records.

For inshore marine habitats all Annex I habitats within the SAC network were included within the extent and condition figures. For H1770 Reefs, both inshore and offshore areas were considered in the assessment.

4.5.3.3 Scotland

For inshore marine habitats, the entire site network was considered (i.e. all designations for the conservation of a marine habitat feature, including its component habitats). This approach therefore considered not only SACs, but also MPAs designated for nature conservation purposes and SSSIs. Where there were overlaps between site designations these were taken into account to avoid double-counting area. For example, for H1170 Reefs, the SAC network incorporates 844 km^2 of Reef habitat and the wider MPA network a further 349 km^2 (e.g. sites designated to protect biogenic reefs such as horse mussel reef). For offshore waters, the SAC network covers 23,654 km^2 of Reef habitat, with a further 414 km^2 designated within the wider MPA network protecting component habitats such as deep sea sponge aggregations.

For terrestrial habitats, differing sources have been used to determine the area of an Annex I habitat (Grades A to C, figure 2) within SACs. In some cases, data from the Habitat Map of Scotland was used to update the extent. Trends in area were derived from the most recent SCM data and/or expert knowledge.

4.5.3.4 Wales

For the purposes of determining the populations of species or areas of habitats within the UK National Site Network in Wales, a consistent methodology was applied for terrestrial features, while a modified approach was used for marine habitats. All terrestrial habitats and species were included in the analysis if they occurred within any SAC boundaries, regardless of whether they were a designated feature of the site. For marine habitats (including H1130 Estuaries), a more selective method was applied. Only those SACs in which the marine feature was explicitly designated (Grades A to C, figure 2) were included in the analysis. This adjustment was necessary to prevent disproportionately large site boundaries associated with marine species SACs from skewing the representation of marine habitats in the dataset.

4.5.3.5 UK Offshore

In the Marine Habitat Offshore report, JNCC included all features within SACs for which features have been designated (Grades A to C, figure 2) (i.e. excluding SACs that have been designated for species).

Figure 2: A description of the SAC site grading system

Site Grades	Description
A	Outstanding examples of the feature in a European context
B	Excellent examples of the feature, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites
C	Examples of the feature which are of at least national importance (i.e. usually above the threshold for SSSI/ASSI notification on terrestrial sites) but not significantly above this. These features are not the primary reason for SACs being selected
D	Features of below SSSI quality occurring on SACs These are non-qualifying features (“non-significant presence”), indicated by a letter D, but this is not a formal global grade.

5. Bird assessments

Bird assessments were conducted at the UK level (see Section 5.1), with relevant data incorporated into the country and offshore reports. As FCS assessments are not undertaken for bird species (see Section 5.2), the reporting requirements under the Habitats Regulations are less complex than those for non-bird features. Accordingly, no separate guidance document has been produced for bird reporting; all relevant methodological detail is provided in the following sections.

5.1 Overall approach to reporting on birds

The overall assessment approach to birds reporting has remained consistent with 2019 Article 12 reporting, with fields providing information on:

- population size (Section 5.2.1) and trends (Section 5.2.2);
- breeding distribution (Section 5.3) and trends (Section 5.3.2);
- pressures (Section 5.5.2) and conservation measures (Section 5.5.3);
- population coverage within the National Site Network (Section 5.6), and;
- information related to Annex II species (Section 5.7).

For 2019–2024 Habitats Regulations reporting, the format was updated to enhance the utility of the reporting for the UK. This involved adding information on:

- conservation status and extinction risk (Section 5.4), and;
- country-specific Species Action Plans, Strategies and Working Groups (Section 5.5.1).

The bird assessments report was co-ordinated by JNCC and the CNCBs with inputs from the British Trust for Ornithology (BTO), under contract to JNCC.

As was the case for 2019 Article 12 Reporting, Habitats Regulations reporting on bird species status and trends was undertaken at a UK scale. This is because many of the species included were ‘regularly occurring migratory species’ and most are only present in the UK for part of the year. When they are in the UK, they are highly mobile and pass through country borders. While some species can be monitored and assessed at a country scale, the production of Official Statistics have shown that population estimates and trends can be accurately and consistently derived for substantially more species at a UK scale. Therefore, clarity of message on the status and protection of the majority of wild bird species is more likely to be achieved at a UK scale.

Data for the reporting came from surveys funded or organised, inter alia, by the following organisations (and their predecessor bodies): BirdWatch Ireland, BTO; DAERA; GWCT; JNCC; Natural Resources Wales; Natural England; NatureScot; Raptor Study Groups in Scotland, England, Wales and Northern Ireland; RSPB; Scottish Ornithologists Club; Shetland Oil Terminal Environmental Advisory Group; and Welsh Ornithology Society; WWT.

5.1.1 Species included

The list of species included in the Habitats Regulations reporting was based on those included in the 2019 UK Article 12 report. All the species covered by Article 12 are regularly

occurring breeding species or regularly occurring migratory species. Bird species that visit the UK to breed may be different from those spending the winter here, which have bred elsewhere. The Article 12 list was amended to ensure the most relevant UK species, sub-species and populations thereof were included. The list comprised 247 species, sub-species or populations in the breeding season, 98 in the non-breeding season and three in passage periods.

The Article 12 approach of separately reporting on populations rather than simply on individual species was followed. 'Population' denotes a species or subspecies that is geographically discrete from other populations at all times of the year, or at some times of the year.

Since non-native bird species were excluded from the scope of the Birds Directive (other than Canada Geese *Branta canadensis*, Pheasant *Phasianus colchicus* and Wild Turkey *Meleagris gallopavo* which are listed on Annex II), reporting on the status of non-natives was outside the scope of Habitats Regulations reporting.

It is widely considered and accepted that non-native species are a major driver of biodiversity loss, so it is important to ensure that monitoring of non-native birds is fully integrated within national ornithological surveillance schemes. This report used this data to assess whether efforts to control numbers of non-native species have proved effective as measures to protect wild birds under the Habitats Regulations.

5.2 Population status

Below is described how each population parameter was derived using methods comparable with the UK Article 12 report in 2019. Details of the metrics reported on are summarised in Table 38, with more detail in Sections 5.2.1 and 5.2.2.

Table 38. Population status parameters.

Parameter	Approach
Population size estimates	Updated by adjusting existing population estimates to take account of recent trend estimates (see below) to produce a new population size estimate (Brightman *et al.* 2025) and Seabirds Count Census (Burnell *et al.* 2023).
Population trend - Short- and long-term trends in abundance	Updated for 2019–2024 (i.e. since Article 12 report). Assessed against BoCC thresholds (new reporting parameter, not done in previous Article 12 reporting).
Distribution map	Information from 2019 Article 12 report (except for 23 breeding seabird species updated by Burnell *et al.* 2023).
Short- and long-term changes in distribution	Information from 2019 Article 12 report (except for 23 seabird species updated by Burnell *et al.* 2023 and Harris *et al.* 2024). Assessed against BoCC

Parameter	Approach
	thresholds (new reporting parameter, not done in previous Article 12 reporting).
NEW: change in conservation status and extinction risk	Used BoCC5 (2021) and BoCC5a (2024), GB IUCN2 Red List (2021), and compare with previous iterations (BoCC4 (2015) and GB IUCN1 Red List (2017)).

Unlike Habitats Regulations reporting for habitats and non-bird species, FCS assessments are not completed for bird species. This approach remains consistent with previous Article 12 reporting and is primarily due to the large number of bird populations assessed (see Section 5.1.1). To enhance the utility of reporting, the 2019–2024 Habitats Regulations Report introduced a more objective and quantitative assessment of population status of bird species in the UK. The use of thresholds to assess bird population status has been successfully used in the Birds of Conservation Concern (BoCC, Stanbury *et al.* 2021, where for example population size changes were assigned green, amber or red status) and in assessments of marine birds in the UKMS[1] and under the OSPAR Convention[2]. These are now established communication tools about the status of birds in the UK. BoCC thresholds were used to assess trends in population size and distribution. In addition, a comparison of UK BoCC 4 and 5 (Eaton *et al*. 2015; Stanbury *et al*. 2021; Stanbury *et al.* 2024) and GB IUCN 1 and 2 (Stanbury *et al*. 2017; Stanbury *et al.* 2021; Stanbury *et al*. 2024) assessments were undertaken to determine the change in conservation status and extinction risk respectively for each species.

5.2.1 Population size

Population size estimates were updated from those included in the 2019 Article 12 Report and later published by the Avian Population Estimates Panel (APEP) in its fourth report (Woodward *et al.* 2020). The updated estimates were derived using a similar approach and methods to APEP 4 and were drawn from the sources summarised in Table 39 (Brightman *et al.* 2025).

Table 39. Primary sources of information used for population estimates.

Species group	Source of population estimates
Non-breeding waterbirds	Updated using modelled trends in data from the Wetland Bird Survey (WeBS), Goose & Swan Monitoring Programme and Non-estuarine Coastal Waterbird Survey (NEWS) (Caulfield *et al.* 2025).

[1] UK Marine Strategy: https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status
[2] OSPAR Marine Birds Thematic Assessment: https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/marine-birds/

Species group	Source of population estimates
Breeding seabirds	Seabirds Count Census (Burnell *et al.* 2023).
More abundant breeding terrestrial birds	Updated using modelled trends in data from the Breeding Bird Survey (BBS) and Waterways BBS (WBBS) (Heywood *et al.* 2024).
Species subject to national surveys funded by the Scarce Breeding Bird Survey, under the UK Bird Monitoring Framework (formerly the Statutory Conservation Agency/RSPB Annual Breeding Bird Scheme (SCARABBS)	Various, incl. Allen *et al.* 2005, Birtles *et al.* 2025, Clements 2013, Clements *et al.* 2022, Conway *et al.* 2007, 2019, Cook 2007, Dillon *et al.* 2009, Ewing *et al.* 2011, Freeman *et al.* 2007, Hayhow *et al.* 2015, 2017, 2018a&b, Hughes *et al.* 1979, Humphreys *et al.* 2016, Jeffs *et al.* 2018, Kelly *et al.* 2024, Hancock *et al.* 1997, Rae, 2007, Skene and Perkins 2023, Stanbury *et al.* 2023, Summers and Buckland 2011a&b, Wilkinson *et al.* 2018, 2023, Wotton *et al* 2009; alternatively, where baseline established from bespoke surveys (as above) but extrapolated using eg BBS trends (e.g. for common buzzard).
Rare breeding birds	Rare Breeding Birds Panel Report 2022 (Eaton *et al.*, 2024).

Under the Habitats Regulations, UK population sizes exclude totals for the Isle of Man (IoM) and the Channel Islands. However, the totals in this report will differ in some cases from other published “UK” totals, notably as reported by Rare Breeding Birds Panel (RBBP). For most species, proportions of populations on those islands are negligible as a proportion of wider UK estimated totals, but significant numbers of Red-billed Chough *Pyrrhocorax pyrrhocorax* and Hen Harrier *Circus cyaneus* breed on the Isle of Man (and are not included here).

For all breeding seabirds, new UK population estimates were derived from the Seabirds Count Census (Burnell *et al.* 2023) and exclude totals from the Isle of Man, Jersey and Guernsey. There remain issues for UK estimates of species such as Herring Gull *Larus argentatus* and Lesser Black-backed Gull *Larus fuscus*, which increasingly nest in urban areas and for which traditional census monitoring techniques have become difficult. For a small number of seabird species (e.g. Roseate tern *Sterna dougallii*, alternative estimates are provided, derived from the RBBP.

5.2.2 Population size trends

Population trend information for UK birds derives from three different sorts of information (in order of declining preference):

1. results of structured monitoring schemes, most of which are updated and released annually as Official Statistics[3];
2. by comparison of two national population estimates at different points in time to yield a change value; or
3. where a quantitative assessment is not possible, direction of population trend is indirectly inferred from changes in distribution as reported by Atlases (e.g. Balmer *et al.* 2013).

As for the 2019 Article 12 report both short-term and long-term trends were provided in the Habitats Regulations report.

5.2.2.1 Short-term trends

Short-term trend reporting used published percentage changes over the latest ten-year period as routinely included in most of the Official Statistics. There is some variation in the periods assessed between each of the Official Statistics; these are listed in Table 40. This ten-year period broadly aligns with previous EU guidance for the 2019 Birds Directive Article 12 reporting: "short-term trends relate to the previous two reporting cycles – i.e. 12 years (or a period as close as possible to this)".

Table 40. Short-term trend time periods and data sources.

Species group	Data collection scheme	No. Species	Period used	Source
Non-breeding waterbirds	Wetland Bird Survey	72	Ten years (2012–2023)	Official Statistic Calbrade *et al.* 2025
Breeding seabirds	Seabird Monitoring Programme (SMP)	15	10 years (2012–2022) for 15 spp. 20 years for 9 spp.	Official Statistic Harris *et al.* (2024); plus Burnell *et al.* 2023.
Abundant breeding terrestrial birds and waterbirds	Breeding Bird Survey/ Waterways Bird Survey	120	Ten years (2012–2022)	Official Statistic Heywood *et al.* (2024)

[3]The Official Statistics used in Birds Habitats Regulation reporting are published by JNCC in accordance with the regulations of the Statistics and Registration Service Act 2007, and the resultant Code of Practice for Statistics.

5.2.2.2 Long-term trends

Long-term trend reporting used published percentage changes over the latest 25- to -30-year period, as routinely included in most of the Official Statistics. There is some variation in the periods assessed between each of the Official Statistics and other published sources that are listed in Table 41.

Note that in 2019 Article 12 reporting, long-term trends were reported from approximately1980 onwards, from when the Birds Directive came into force. However, the periods used in this Habitats Regulations report ensure consistency with Official Statistics and other sources that were chosen to maximise confidence in the underlying data.

Data on rarer species of birds that are present in the UK and breeding in low numbers are collated by the Rare Breeding Birds Panel (RBBP). The majority of these species are not surveyed adequately by the UK-wide schemes used to produce the Official Statistics listed in Table 40. RBBP uses a wide variety of sources to supplement the data received from the UK schemes (Eaton *et al.* 2024). RBBP publish 25-year population trends where possible. If a species has been covered by the RBBP for a shorter period then a ten-year, 15-year or 20-year trend is given as appropriate. Trends are calculated by comparing the five-year mean in 2022 (for the years 2018–22) with that for 25, 20, 15 or 10 years earlier.

Table 41. Long-term trend time periods and data sources.

Species group	Data collection scheme	No. Species	Period used	Source
Non-breeding waterbirds	Wetland Bird Survey	72	25 years (1997–23)	Official Statistic Calbrade *et al.* 2025
Breeding seabirds	Seabirds Count Census (Burnell *et al.* 2023))	24[4]	Mostly 30 years (SCR 1985-88 to seabirds Count 2015-21)[5]	Burnell *et al.* 2023
Abundant breeding terrestrial birds and waterbirds	Breeding Bird Survey/ Waterways Bird Survey	109	27 years (1995–2022)	Official Statistic Heywood *et al.* (2024)
Rare breeding birds	Multiple via Rare Breeding Bird Panel (RBBP)	57	25 years (5-year mean 1993–1997 to 5-year mean 2018–2022)	Eaton *et al.* (2024), Holling (2018)

[4] No comparison possible for Herring Gull and Lesser Black-backed Gull that take account of both urban gull and natural site trends.
[5] Five species (Manx Shearwater, European Storm petrel and Leach's Petrel and common gull) used c.20yrs: Seabird 2000 (1998-2002) to Seabirds Count (2015-21); for Northern Gannet a 50-year period was used (1970-2021).

In addition, a number of sources for long-term trends were used:

- For a number of scarce species not well monitored by RBBP but too scarce to be monitored by BBS, trends were calculated from comparison of population sizes derived from national surveys undertaken through the aegis of the Scarce Breeding Bird Survey (SBBS, formerly the Statutory Conservation Agency/RSPB Annual Breeding Bird Scheme, SCARABBS). The published sources, typically journal papers, are cited for the relevant species.
- For a small number of species where other sources are not available, and where valid trends were calculated from comparison of national totals presented by the Britain and Ireland breeding bird atlases in 1968-72 (Sharrock 1976), 1988-91 (Gibbons *et al.* 1993) and 2007–2011 (Balmer *et al.* 2013) against recent population estimates derived for the report. The trends of a small number of species remained as unknown, typically as a consequence of the logistical problems of undertaking monitoring and/or methodological difficulties.

5.2.2.3 Defining and assessing trends

Both short and long-term trends were defined as shown in Table 42.

Table 42. Definitions of trends for bird populations.

Trend	% change
Decreasing	Declines of more than 10%
No change	Trend is between -10% or +10%
Increasing	Increases of more than 10%

These definitions are taken from the guidance for the 2019 Article 12 report. It is worth noting that the 2013 Article 12 report defined stable as any trend between -5.0% and +5.0%. Given this change of method, we stress that simple comparisons of total number of species in increasing, decreasing or stable categories between the 2019–2024 Habitats Regulations report and previous UK Article 12 report earlier than 2019 are not valid. The term ‘fluctuating’ was used solely for Short-eared Owl *Asio flammeus*, a species whose population size is known to vary erratically and significantly according to the cyclical population dynamics of its main prey.

In addition to previous Article 12 reports, short-term and long-term trends in population size were assessed against thresholds used in UK BoCC assessments (see Stanbury *et al.* 2021), as shown in Table 43.

Table 43. Population size change thresholds for both breeding and non-breeding birds used in Birds of Conservation Concern assessments (see Stanbury *et al.* 2021).

Population size change	Conservation Status
Increases, and declines up to 25%	Green

More than 25% but less than 50% decline	Amber
More than 50% decline over 25 years or more	Red

5.3 Breeding distribution

Updated information on the distribution of breeding populations of 25 seabird species were derived from the fourth seabird census of Britain and Ireland (Burnell *et al.* 2023).

For all other species, distribution maps and past changes in distribution that were reported in 2019 were used. This was due to the lack of up-to-date information on species' spatial and temporal distributions. The 2019 Article 12 report used the most recent UK Bird Atlas from 2007-11 (Balmer *et al.*, 2013). However, this information is now over 10 years old and is considered out of date. Furthermore, estimating changes in distribution by comparing with the previous Atlas in 1988-91 (Gibbons *et al.* 1993) provides greater uncertainty, in the absence of contemporary bird atlases.

Attempts were made to develop an alternative approach that modelled species distributions and range changes from BBS data, which were designed primarily to calculate population trends. Martay *et al.* (2023) tried this modelling on several species, including Common Snipe *Galinago galinago*. In comparison to the Atlas data, they found the modelled distribution and distributional change had varying levels of accuracy. For example, BBS based presence models for Common Snipe showed a relatively large number of misclassified 10 km squares and the authors suggested that the 2007–2011 Bird Atlas map data still represents the best determinant of Common Snipe range in the absence of contemporary spatial data. Furthermore, developing and validating BBS-based distribution models for a large number of species would have been inherently costly. The benefit of this approach did not outweigh the cost, given that we have much more up to date trends in abundance that we can use to quantitatively assess population status (see above).

5.3.1 Breeding distribution maps

For species where 2019 Article 12 data has been used (see above), the relevant maps of breeding distributions were taken from the Bird Atlas 2007–2011 (Balmer *et al.* 2013), available online from BTO's Bird Atlas Mapstore.

Distribution maps for breeding seabirds were derived from the Seabirds Count census of Britain and Ireland (Burnell *et al*. 2023), conducted between 2015 and 2021. Occupancy of a 10 x 10 km grid square was defined as cases where a start point of a count section (most often a linear section of coastline) fell within a given square and contained "confirmed, possible or probable" breeding of the species in question. The distribution map of gull species relates to occurrence of birds nesting in natural locations (coastal or inland) and of birds nesting on human-made structures.

5.3.2 Breeding distribution trends

For species other than seabirds, short- and long-term distribution trends were calculated by comparison of the 2007–11 Atlas with the earlier Atlases from 1968–72 (Sharrock 1976) and

1988–90 (Gibbons *et al.* 1993) and were the same as reported in the 2019 Article 12 report. The metric used was the percentage change of number of occupied 10 x 10 km grid squares between 1968-72 to 2007–2011.

For seabirds, breeding distribution trends were assessed by comparison between the Seabird 2000 census (Mitchell *et al.* 2004), conducted in 1998–2002, with the Seabirds Count census (Burnell *et al.* 2023), conducted between 2015 and 2021,equating to a period of approximately 20 years; this timeframe is best considered as “short-term change”, according with the timespan used for non-seabird distribution change. It was not possible to determine “long-term” change, for example by comparison between Seabirds Count and the equivalent census conducted in 1985-88 (“Seabird Colony Register”, Lloyd, Tasker and Partridge 1991) or the first census, Operation Seafarer (Cramp, Bourne and Saunders, 1974), conducted in 1969–70. This was because of incompatibilities in the spatial extent of count sections. Future assessments may be able to determine long-term change in distribution, following improvements that are underway to delineate historical count sections. Change in distribution of gull species relates solely to occurrence of gulls nesting in natural locations (coastal and inland) and excludes gulls nesting on human-made structures, such as roof-tops. Human-made nest sites are excluded due to the incompatibility of methods used to survey these sites in different censuses.

Short-term trends and, where available, long-term trends in distribution were assessed as ‘decreasing’, ‘increasing’ or ‘no change’, following the same definitions used for trends in population size (see Section 5.2.2).

In addition to previous Article 12 reports, significant short-term and, where available, long-term changes in distribution were assessed against thresholds used in BoCC assessments (see Stanbury *et al.* 2021), as shown in Table 44.

Table 44. Change in distribution thresholds used in BoCC assessments (see Stanbury *et al.* 2021).

Changes in distribution	Conservation Status
Breeding and non-breeding distribution increase, and declines up to 25% in occupied 10 km squares between Atlases	Green
Breeding and non-breeding distribution decline: more than 25% in occupied 10 km squares between Atlases	Amber
Breeding and non-breeding distribution decline: more than 50% in occupied 10 km squares between Atlases	Red

5.4 Assessment of change in conservation concern and extinction risk

The assessment of UK BoCC uses standardised criteria to allocate species to Red, Amber, or Green lists depending on their level of conservation concern (see Table 45). The first formal assessment for UK birds was published in 1990 (Batten *et al.* 1990), and four further assessments have since been published, mostly recently in 2021 (Stanbury et al. 2021 and

2024). In the 2019–2024 Habitats Regulations report, the change in conservation concern status for each species since previous assessments was included, as reported by Stanbury *et al.* (2021).

Table 45. Criteria for the assessment of BoCC (see Stanbury *et al.*, 2021).

Reporting metric	BoCC criteria
Population size	Rarity (Amber): pop size: < 30 pairs or < 900 individuals (non-breeding);
Abundance trends	Abundance decline: > 25% but < 50% (Amber) or > 50% (Red) over 25 years or more
Distributional range	Localisation (Amber): > 50% pop in ≤ 10 sites;
Changes in distribution	Distribution decline: > 25% (Amber) or > 50% (Red) in occupied 10km squares between Atlases Historical decline in breeding populations between 1800 and 1995 which have not recovered subsequently (Red)
Other parameters	Wider international concern (Amber): European Red list (ERLOB) status of Critically Endangered, Endangered or Vulnerable.
	International Importance (Amber): at least ≥ 20% European population in UK

British birds have been assessed twice using the International Union for Conservation of Nature (IUCN) Red List criteria (Stanbury *et al.* 2017, Stanbury *et al.* 2021). The IUCN Red List assessment process uses well-established, internationally recognised, and standardised criteria to assess extinction risk, informed by the species rarity, range restriction and rate of decline (measured by ten years or three generations; whichever is longer). IUCN Red List assessments for wild birds in Great Britain is not an alternative to BoCC and does not replace it.

IUCN Red List assessments can be used to assess the risk of extinction at regional, national, or local scales. The IUCN Red List criteria apply quantitative thresholds to various combinations of population size and decline, range size and decline, and quantitative analysis of extinction risk. In the 2019–2024 Habitats Regulations report, the change in Red List status between the two successive Red List assessments was included (Stanbury *et al.* 2017, 2021, 2024).

We used the assessments above to identify species that are of conservation concern or at risk of extinction in each country of the UK. For species where data allowed, we determined proportion of the UK (or in some cases the GB) population located in each country (e.g. 75% of UK Chough are found in Wales). This enables each country to highlight the responsibility of that country for the species at a UK level and thus aid species recovery in the UK as a whole.

5.5 Reporting supplementary information (conservation measures and pressures) for birds

This section describes the feature level reporting on the implementation of conservation measures intended to preserve, maintain or re-establish a sufficient diversity and area of habitats for birds by each country. To achieve this, information from the 2019 Article 12 report for the UK was updated and then additional country scale information was added.

The reporting of conservation measures taken was structured according to pressures, allowing alignment and cross-tabulation with delivery mechanisms (e.g. agri-environment, woodland creation schemes), which will facilitate an understanding of what pressures are being addressed. The EU have updated their pressure and conservation measure list for the 2019–2024 Article 12/17 reporting, and we have aligned with this updated list (appendices 8 and 9). There are also updated crosswalks between these two lists also to help guide which specific conservation measures address which specific pressures.

5.5.1 Species Action Plans (SAPs), Strategies and Working Groups

Reporting on Species Action Plans (SAPs), Strategies and Working Groups is a new feature included in the 2019–2024 country reports. SAPs, Strategies and Working Groups are listed for each UK species/population for which a Plan, Strategy or Working Group exists, with details of co-ordinated measures on birds provided. For each species/population, information was collated on SAPs, Strategies or Working Groups that were in existence during the reporting period within each country. Some are also operating at a UK scale and maybe part of an international response (e.g. an International Single-Species Action Plan (ISSAP) under the African-Eurasian Waterbird Agreement (AEWA)). UK, UK-signed international or UK country-level (England, Northern Ireland, Scotland, Wales) SAPs, Strategies or Working Groups are provided for each relevant species/population.

This represents a change to previous Article 12 reporting, which included only UK, European or other International SAPs or other plans.

For each SAP, Strategy or Working Group, the operational period or date of publication and lead organisation was provided.

Only those SAPs, Strategies or Working Groups that identify the species they are intended to conserve were included. For clarity, SAPs, Strategies or Working Groups which had a broad remit but do not specify individual species, were not included. The information provided for each SAPs, Strategies or Working Groups identifies conservation measures that can support the recovery individual species/populations.

5.5.2 Main pressures

The UK analyses of pressures and threats were first reported under Article 12 in 2013 and updated in 2019. They were based on major multi-species ornithological reviews (e.g. Brown & Grice 2005; Forrester & Andrews 2007), which were supplemented with information from species monographs, species action plans and recently published review papers. Where possible, the 2019–2024 report provided more recent evidence and reassessed the strength of that evidence. Also, references to multi-species reviews of impacts of key pressures were

updated, such as avian influenza (e.g. see the RSPB report) and bycatch of marine fisheries (e.g. Marine Scotland assessment).

The 2019 Article 12 reporting information on pressures on bird species/populations was reviewed and updated where required. This UK-scale information was used as the basis for presenting country-specific breakdowns, dependent on the available evidence. For example, the illegal persecution of breeding Hen Harrier may be more acute in one country than another. The 2019 Article 12 pressures and threats that were reported were converted into the updated Pressure codes (see Appendix 8) and reviewed for each species.

As in previous reporting, the 2019–2024 report deviates from EU Article 12 Guidance in two ways:

i) Data were collated on pressures for all species for which population estimates have been submitted and not just those for which SPAs have been classified.
ii) Pressures have been assigned to species that are not necessarily in decline, but may be;
    a. recovering through dedicated species recovery programmes following historic depletion of numbers but where pressures are considered to be constraining the rate of population increase (e.g. Bittern *Botaurus stellaris*, Corncrake *Crex crex*, or Tree Sparrow *Passer montanus*).;
    b. rare, so population trends are difficult to measure (e.g. Spotted Crake *Porzana porzana*); and
    c. reported as 'increasing', but there is substantial uncertainty around that status (i.e. species that are more data deficient, such as Rock Pigeon *Columba livia*).

As for habitats and non-bird species (see Section 4.3.1), pressure timing was reported to discern if a factor was a pressure, a threat, or both. Pressures were recorded as having high, medium, or low impact. This approach differs to habitat and non-bird species reporting, which only includes those ranked as high or medium impact. In contrast to previous UK Article 12 reports, pressures that may not impact across the entire UK, but may be acute in certain countries, were also included. It is important from a country perspective to identify these impacts so that they can be addressed locally. For example, persecution of Red Kites *Milvus milvus* in Northern Ireland is preventing a similar recovery in the populations of this species elsewhere in the UK.

5.5.3 Conservation measures

As in previous UK Article 12 reports, where species-populations estimates were submitted, Conservation Measures were reported. This is a deviation from the EU Article 12 guidance that requires conservation measures to be assessed only for those species for which SPAs have been classified.

5.5.3.1 Identifying measures

For each species and season, the main conservation measures were identified from the list of conservation measures provided by the EU for 2019–2024 reporting (see Appendix 9). The 2019 UK Article 12 report was reviewed and any new measures added that have become necessary due to new pressures (e.g. measures to address *Trichomonosis* in

finches) or new evidence for the effectiveness of species recovery actions. Any measures no longer undertaken were deleted.

For each species/population, the most important conservation measures necessary to improve their status were described. The first step in this was to select whether measures are needed or not. If the answer was 'yes' then one of the following options was selected:

a. Measures identified but none yet taken;
b. Measures needed but cannot be identified;
c. Part of measures identified have been taken;
d. Most/all of measures identified have been taken

There are a small number of species that do not require conservation measures. These are largely non-natives, but the list also includes a subset of species where there are no identified pressures and so no need for targeted conservation measures.

5.5.3.2 Purpose and location of measures

For those species for which measures are required and/or are being taken, the main purpose of the measures was identified. One option was chosen from the following:

a. Maintain the current distribution, population and/or habitat for the species;
b. Expand the current distribution of the species;
c. Increase the population size and/or improve population dynamics (improve reproductive success, reduce mortality, improve age/sex structure);
d. Restore the habitat of the species.

Current EU guidance on Article12 reporting splits this question into two parts. Firstly, identifying all the purposes of the measures and then picking the main one. The two-stage approach did not add any particular value to the report, and so it is simplified in the report to just focus on the main purpose of the measures.

It was identified whether the measures are being implemented inside SPAs, outside SPAs, or both.

5.5.3.3 Response to measures

It was then estimated if and when the measures were expected to start reducing the pressure and produce positive effects, either:

a) No population level response
b) short-term response (within the current reporting period, e.g. 2019–2024);
c) medium-term response (within the next two reporting periods, e.g. 2025-2036); or
d) long-term response (after e.g. 2036).

The addition of 'no population response' is a departure from current EU guidance on Article 12. This category was necessary for species such as Bewick's Swan *Cygnus columbianus bewickii*, where measures are being undertaken to conserve the remaining UK population, but this is unlikely to lead to recovery as the species is known to have shifted its wintering distribution outside the UK due to climate change.

Current EU guidance on Article.12 reporting includes a question on the scope of measures taken (i.e. the proportion of the population they impact). The report does not to include this question as evidence was not available on the percentage of individual species' populations that are impacted by particular measures. In the absence of evidence, the reporting would be making subjective judgements that would not be helpful. This aligns with the approach adopted for habitats and non-bird species reporting.

5.6 Population coverage within the National Site Network (SPAs)

Statistics related to occurrence of qualifying species in the UK SPA Network were drawn from the most recent network review (Stroud *et al.* 2016). This collated population assessments from the 2000s, typically from the latter part of the decade (e.g. for non-breeding waterbirds, WeBS data from the five-year period 2005/06 – 2009/10 have been used). Totals were calculated for each species' SPA suite as defined by Stroud *et al.* (2001) subject to any changes consequent on SPA classifications since 2001. Please note that these values are not directly comparable to overall population size values. This is due to differences in the underlying data sources used to generate these estimates.

In previous Article 12 Reporting, the total population of species on national SPA Networks either as qualifying species or otherwise incidentally present was to be determined. It was not feasible to derive this statistic for the UK, so the SPA suite total (i.e. total qualifying species occurrence) was presented as a minimum measure of occurrence in field 9.1.b 'SPA network population size: minimum'. Field 9.1.c 'SPA network population size: maximum' was left blank other than for Fair Isle Wren *Troglodytes troglodytes fridariensis* where it is known that the entire (global) population occurs within the single SPA classified for this Annex I-listed race.

The 'short-term trend of population size in the SPA network' (field 9.4) was derived from a simple comparison of SPA suite totals in the 1990s (Stroud *et al.* 2001) and from the 2000s (Stroud *et al.* 2016). It made no allowance for inflation of suite totals that may have occurred as a consequence of additional classifications that may have occurred since 2001.

5.7 Information related to Annex II species (Article 7)

Estimates of mortality and from hunting Annex II species have not been included in the 2019–2024 Habitats Regulations report.

Whilst estimates of UK hunting bags were provided in the 2019 Article 12 report on the implementation of the Birds Directive, using estimates in Aebischer (2019), a recent assessment of the sufficiency of such data for accurately estimating the scale and sustainability of the harvest of quarry species of waterbirds in the UK (Madden, Ellis and Cameron, 2025), commissioned by Defra, concluded that the information the UK has on hunting bags is "partial, limited and probably biased". On that basis, Defra reported to the African-Eurasian Migratory Waterbird Agreement (AEWA) in its December 2024 report on harvest that "we are not able to submit a UK harvest data report for the period 2019–2023, as we do not now consider that an accurate estimate is available". Consequently, it is JNCC's advice to the UK's Country Nature Conservation Bodies that no reliable estimates of

hunting bags can be provided for the inclusion in the 2019–2024 reporting under regulation 9A of the Habitats Regulations and, therefore, no estimates are provided in this report.

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Appendix 1: Reporting Fields

Appendix 1 provides information on data fields used to gather the required information for the 2019–2024 Habitat Regulations reporting, presented in tables A1A (Habitat fields), A1B (Species excluding birds fields), and A1C (Bird fields).

Habitat Fields

Table A1A. A list of all the information collected for Habitats Regulations habitats reports via the reporting pro-forma spreadsheet fields.

Section	Field	Optional/ required
1. General information	1.1 Habitat name	Required
	1.2: Habitat code	Required
	1.3 Habitat group	Required
	1.4 Country	Required
2. Maps	2.1: Distribution map Year or period	Required
	2.2: Distribution map	Required
	2.3: Distribution map Method used	Required
	2.4: Additional information	Optional
3. Biogeographical and marine regions	3.1: Biogeographic or marine region where the habitat occurs	Required
	3.2: Sources of information	Required
4. Range	4.1: Surface area	Required
	4.2: Short-term trend Period	Required
	4.3: Short-term trend Direction	Required
	4.4a: Short-term trend Magnitude Estimated Minimum	Optional
	4.4b: Short-term trend Magnitude Estimated Maximum	Optional
	4.4c: Short-term trend Magnitude Pre-defined range	Optional
	4.4d: Short-term trend Magnitude Unknown	Optional
	4.4e: Short-term trend Magnitude Type of estimate	Optional
	4.4f: Short-term trend Magnitude Rate of decrease	Required
	4.5: Short-term trend Method used	Required
	4.6: Long-term trend Period	Optional
	4.7: Long-term trend Direction	Optional
	4.8: Long-term trend Magnitude and Rate of decrease	Optional
	4.8a: Long-term trend Magnitude Minimum	Optional
	4.8b: Long-term trend Magnitude Maximum	Optional
	4.8c: Long-term trend Rate of decrease	Optional
	4.9: Long-term trend Method used	Optional
	4.10a: Favourable Reference Range Area	Required

Section	Field	Optional/ required
	4.10b: Favourable Reference Range Pre-defined FRV increment	Required
	4.10c: Favourable Reference Range Unknown	Required
	4.10d: Favourable Reference Range Method used	Required
	4.10e: Favourable Reference Range Quality of Information	Required
	4.11a: Change and reason for change in surface area of range	Required
	4.11b: Change and reason for change in surface area of range Genuine change	Required
	4.11c: Change and reason for change in surface area of range Improved knowledge or more accurate data	Required
	4.11d: Change and reason for change in surface area of range Different method	Required
	4.11e: Change and reason for change in surface area of range No information	Required
	4.11f: Change and reason for change in surface area of range Other reasons	Required
	4.11g: Change and reason for change in surface area of range Main reason	Required
	4.12: Additional information	Optional
5. Area covered by habitat	5.1: Year or period	Required
	5.2a: Surface area Minimum	Required
	5.2b: Surface area Maximum	Required
	5.2b: Surface area Best single value	Required
	5.3: Type of estimate	Required
	5.4: Surface area Method used	Required
	5.5: Short-term trend Period	Required
	5.6: Short-term trend Direction	Required
	5.7a: Short-term trend Magnitude Estimated minimum	Required
	5.7b: Short-term trend Magnitude Estimated maximum	Required
	5.7c: Short-term trend Magnitude Pre-defined range	Required
	5.7d: Short-term trend Magnitude Unknown	Required
	5.7e: Short-term trend Magnitude Type of estimate	Required
	5.7f: Short-term trend Magnitude Rate of decrease	Required
	5.8: Short-term trend Method used	Required
	5.9: Long-term trend Period	Optional
	5.10: Long-term trend Direction	Optional
	5.11a: Long-term trend Magnitude Minimum	Optional
	5.11b: Long-term trend Magnitude Maximum	Optional
	5.11c: Long-term trend Magnitude Confidence Interval	Optional
	5.11d: Long-term trend Rate of decrease	Optional
	5.12: Long-term trend Method used	Optional
	5.13a: Favourable reference area Area	Required
	5.13b: Favourable reference area Pre-defined FRV increment	Required
	5.13c: Favourable reference area Unknown	Required
	5.13d: Favourable reference area Method used	Required
	5.13e: Favourable reference area Quality of Information	Required

Section	Field	Optional/ required
	5.14a: Change and reason for change in surface area	Required
	5.14b: Change and reason for change in surface area Genuine change	Required
	5.14c: Change and reason for change in surface area Improved knowledge or more accurate data	Required
	5.14d: Change and reason for change in surface area Different method	Required
	5.14e: Change and reason for change in surface area No information	Required
	5.14f: Change and reason for change in surface area Other reasons	Required
	5.14g: Change and reason for change in surface area Main reason	Required
	5.15: Additional information	Optional
6. Structure and functions	6.1ai: Condition of habitat Area in good condition Minimum	Required
	6.1aii: Condition of habitat Area in good condition Maximum	Required
	6.1bi: Condition of habitat Area in not good condition Minimum	Required
	6.1bii: Condition of habitat Area in not good condition Maximum	Required
	6.1ci: Condition of habitat Area where condition is not known Minimum	Required
	6.1cii: Condition of habitat Area where condition is not known Maximum	Required
	6.2: Condition of habitat Method used	Required
	6.3: Short-term trend of habitat area in good condition Period	Required
	6.4: Short-term trend of habitat area in good condition Direction	Required
	6.5: Short-term trend of habitat area in good condition Method used	Required
	6.6a: Typical species	Optional
	6.6b: Typical species Species scientific name	Optional
	6.7a: Typical species Method used	Optional
	6.7b: Typical species Additional notes	Optional
	6.8: Additional information	Optional
7. Main pressures	7.1ai: Pressure code	Required
	7.1aii: Pressure name	Required
	7.1bi: Pressure timing	Required
	7.1bii: Pressure ranking	Required
	7.2: Sources of information	Optional
	7.3: Additional information	Optional
8. Conservation measures	8.1a: Status of measures Needed	Required
	8.1b: Status of measures Status	Required
	8.2: Main purpose of the measures taken	Required
	8.3: Location of the measures taken	Required
	8.4: Response to the measures	Required
	8.5ai: List of main conservation measures Code	Required
	8.5aii: List of main conservation measures Measure	Required
	8.5b: Measure ranking	Required
	8.6: Additional information	Optional
	9.1ai: Future trends of parameters Range	Required

Section	Field	Optional/ required
9. Future prospects	9.1aii: of parameters Range	Required
	9.1bi: Future trends of parameters Area covered by habitat	Required
	9.1bii: of parameters Area covered by habitat	Required
	9.1ci: Future trends of parameters Structure and function	Required
	9.1cii: of parameters Structure and function	Required
	9.2: Additional information	Optional
10. Conclusions	10.1: Range	Required
	10.2: Area	Required
	10.3: Specific structure and functions	Required
	10.4: Future prospects	Required
	10.5: Overall assessment of Conservation Status	Required
	10.6: Overall trend in Conservation Status	Required
	10.7ai: Change in overall Conservation Status Change	Optional
	10.7aii: Change in overall trend in Conservation Status Change	Optional
	10.7bi: Change in overall Conservation Status Genuine change	Optional
	10.7bii: Change in overall trend in Conservation Status Genuine change	Optional
	10.7ci: Change in overall Conservation Status Improved knowledge or more accurate data	Optional
	10.7cii: Change in overall trend in Conservation Status Improved knowledge or more accurate data	Optional
	10.7di: Change in overall Conservation Status Different method	Optional
	10.7dii: Change in overall trend in Conservation Status Different method	Optional
	10.7ei: Change in overall Conservation Status No information	Optional
	10.7eii: Change in overall trend in Conservation Status No information	Optional
	10.7fi: Change in overall Conservation Status Other reasons	Optional
	10.7fii: Change in overall trend in Conservation Status Other reasons	Optional
	10.7gi: Change in overall Conservation Status Main reason	Optional
	10.7gii: Change in overall trend in Conservation Status Main reason	Optional
	10.8: Additional information	Optional
11. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex I habitat types	11.1a: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Minimum	Required
	11.1b: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Maximum	Required
	11.1c: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Best single value	Required
	11.2: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Type of estimate	Required
	11.3: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Method used	Required
	11.4: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat area within the network Direction	Required
	11.5: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat area within the network Method used	Required
	11.6: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat in good condition Direction	Required

Section	Field	Optional/ required
	11.7: Annex I habitat surface area of the habitat type inside the pSCIs, SCIs and SACs network Short-term trend of habitat in good condition Method used	Required
	11.8: Additional information	Optional
12. Complementary information	12.1: Justification of 1% threshold for trends	Optional
	12.2: Other relevant information	Optional

Species (excluding birds) Fields

Table A1B. A list of all the information collected for Habitats Regulations species reports via the reporting pro-forma spreadsheet fields.

Section	Field	Optional/ required
1. General information	1.1: Country	Required
	1.2: Species code	Required
	1.3: Species scientific name	Required
	1.4: Alternative species scientific name	Optional
	1.5: Common name	Optional
2. Maps	2.1: Sensitive species	Required
	2.2: Distribution map Year or Period	Required
	2.3: Distribution map	Required
	2.4: Distribution map Method used	Required
	2.5: Distribution map Additional information	Optional
3. Information related to Annex V species	3.1: Is the species taken in the wild/ exploited?	Required
	3.2a: Which of the measures in Art. 9A have been taken? Regulations regarding access to property	Required
	3.2b: Which of the measures in Art.9A have been taken? Temporary or local prohibition on the taking of specimens in the wild and exploitation	Required
	3.2c: Which of the measures in Art.9A have been taken? Regulation of the periods and or methods of taking specimens	Required
	3.2d: Which of the measures in Art.9A have been taken? Application of hunting and fishing rules which take account of the conservation of such populations	Required
	3.2e: Which of the measures in Art.9A have been taken? Establishment of a system of licences for taking specimens or of quotas	Required
	3.2f: Which of the measures in Art.9A have been taken? Regulation of the purchase, sale, offering for sale, keeping for sale, or transport for sale of specimens	Required
	3.2g: Which of the measures in Art.9A have been taken? Breeding in captivity of animal species as well as artificial propagation of plant species	Required
	3.2hi: Which of the measures in Art.9A have been taken? Other measures	Required
	3.2hii: Which of the measures in Art.9A have been taken? Other Measures description	Required
	3.3a: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Unit	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 1 min	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 1 max	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 1 unknown	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 2 min	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 2 max	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 2 unknown	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 3 min	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 3 max	Required

Section	Field	Optional/ required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 3 unknown	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 4 min	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 4 max	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 4 unknown	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 5 min	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 5 max	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 5 unknown	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 6 min	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish) Year 6 max	Required
	3.3b: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish): Year 6 unknown	Required
	3.4: Hunting bag or quantity take in the wild Method used	Required
	3.5: Additional information	Optional
4. Biogeographical and marine regions	4.1: Biogeographic or marine region where the species occurs	Required
	4.2: Sources of information	Required
5. Range	5.1: Surface area	Required
	5.2: Short-term trend Period	Required
	5.3: Short-term trend Direction	Required
	5.4a: Short-term trend Magnitude Estimated Minimum	Optional
	5.4b: Short-term trend Magnitude Estimated Maximum	Optional
	5.4c: Short-term trend Magnitude Pre-defined range	Optional
	5.4d: Short-term trend Magnitude Unknown	Optional
	5.4e: Short-term trend Magnitude Type of estimate	Optional
	5.4f: Short-term trend Magnitude Rate of decrease	Required
	5.5: Short-term trend Method used	Required
	5.6: Long-term trend Period	Optional
	5.7: Long-term trend Direction	Optional
	5.8: Long-term trend Magnitude	Optional
	5.8a: Long-term trend Magnitude Minimum	Optional
	5.8b: Long-term trend Magnitude Maximum	Optional
	5.8c: Long-term trend Rate of decrease	Optional
	5.9: Long-term trend Method used	Optional
	5.10a: Favourable Reference Range Area	Required
	5.10b: Favourable Reference Range Pre-defined FRV increment	Required
	5.10c: Favourable Reference Range Unknown	Required
	5.10d: Favourable Reference Range Method used	Required
	5.10e: Favourable Reference Range Quality of Information	Required

Section	Field	Optional/ required
	5.11a: Change and reason for change in surface area of range Change	Required
	5.11b: Change and reason for change in surface area of range Genuine change	Required
	5.11c: Change and reason for change in surface area of range Improved knowledge or more accurate data	Required
	5.11d: Change and reason for change in surface area of range Different method	Required
	5.11e: Change and reason for change in surface area of range No information	Required
	5.11f: Change and reason for change in surface area of range Other reasons	Required
	5.11g: Change and reason for change in surface area of range Main reason	Required
	5.12: Additional information	Optional
6. Population	6.1: Population Year or Period	Required
	6.2a: Population size Unit	Required
	6.2b: Population size Minimum	Required
	6.2c: Population size Maximum	Required
	6.2d: Population size Best single value	Required
	6.3: Population size Type of estimate	Required
	6.4: Population size Quality of extrapolation to reporting unit	Required
	6.5a: Additional population size Unit	Optional
	6.5b: Additional population size Minimum	Optional
	6.5c: Additional population size Maximum	Optional
	6.5d: Additional population size Best single value	Optional
	6.5e: Additional population size Type of estimate	Optional
	6.6: Population size Method used	Required
	6.7: Population Short-term trend Period	Required
	6.8: Population Short-term trend Direction	Required
	6.9a: Population Short-term trend Magnitude Estimated Minimum	Required
	6.9b: Population Short-term trend Magnitude Estimated Maximum	Required
	6.9c: Population Short-term trend Magnitude Pre-defined range	Required
	6.9d: Population Short-term trend Magnitude Unknown	Required
	6.9e: Population Short-term trend Magnitude Type of estimate	Required
	6.9f: Population Short-term trend Magnitude Rate of decrease	Required
	6.10: Population Short-term trend Method used	Required
	6.11: Population Long-term trend Period	Optional
	6.12: Population Long-term trend Direction	Optional
	6.13a: Population Long-term trend Magnitude Minimum	Optional
	6.13b: Population Long-term trend Magnitude Maximum	Optional
	6.13c: Population Long-term trend Magnitude Confidence Interval	Optional
	6.13d: Population Long-term trend Rate of decrease	Optional
	6.14: Population Long-term trend Method used	Optional
	6.15ai: Favourable reference population Size	Required
	6.15aii: Favourable reference population Unit	Required

Section	Field	Optional/ required
	6.15b: Favourable reference population Pre-defined FRV increment	Required
	6.15c: Favourable reference population Unknown	Required
	6.15d: Favourable reference population Method used	Required
	6.15e: Favourable reference population Quality of information	Required
	6.16a: Change and reason for change in population size Change	Required
	6.16b: Change and reason for change in population size Genuine change	Required
	6.16c: Change and reason for change in population size Improved knowledge or more accurate data	Required
	6.16d: Change and reason for change in population size Different method	Required
	6.16e: Change and reason for change in population size No information	Required
	6.16f: Change and reason for change in population size Other reasons	Required
	6.16g: Change and reason for change in population size Main reason	Required
	6.17: Additional information	Optional
	6:18: Population Age structure, mortality and reproduction	Required
7. Habitats for the species	7.1a: Is area of occupied habitat sufficient (for Long-term survival)?	Required
	7.1b: Is quality of occupied habitat sufficient (for long-term survival)?	Required
	7.1c: Is there a sufficiently large area of occupied and unoccupied habitat of suitable quality (for long-term survival)?	Required
	7.2: Sufficiency of area and quality of occupied habitat Methods used	Required
	7.2a: Sufficiency of area and quality of habitat Method used - Area of habitat	Required
	7.2b: Sufficiency of area and quality of habitat Method used - Quality of habitat	Required
	7.3: Short-term trend Period	Required
	7.4: Short-term trend Direction	Required
	7.5: Short-term trend Method used	Required
	7.6: Long-term trend Period	Optional
	7.7: Long-term trend Direction	Optional
	7.8: Long-term trend Method used	optional
	7.9: Additional information	Optional
8. Main pressures	8.1ai: Pressure or threat code	Required
	8.1aii: Pressure or threat name	Required
	8.1bi: Pressure timing	Required
	8.1bii: Pressure ranking	Required
	8.2: Sources of information	Optional
	8.3: Additional information	Optional
9. Conservation measures	9.1a: Status of measures Needed	Required
	9.1b: Status of measures Status	Required
	9.2: Main purpose of the measures taken	Required
	9.3: Location of the measures taken	Required
	9.4: Response to the measures	Required
	9.5ai: List of main conservation measures Code	Required
	9.5aii: List of main conservation measures Measure	Required

Section	Field	Optional/ required
	9.5b: Measure ranking	Required
	9.6: Additional information	Optional
10. Future prospects	10.1ai: Future trends of parameters Range	Required
	10.1aii: Future prospects of parameters Range	Required
	10.1bi: Future trends of parameters Population	Required
	10.1bii: Future prospects of parameters Population	Required
	10.1ci: Future trends of parameters Habitat for species	Required
	10.1cii: Future prospects of parameters Habitat for species	Required
	10.2: Additional information	Optional
11. Conclusions	11.1: Range	Required
	11.2: Population	Required
	11.3: Habitat for the species	Required
	11.4: Future prospects	Required
	11.5: Overall assessment of Conservation Status	Required
	11.6: Overall trend in Conservation Status	Required
	11.7ai: Change in overall Conservation Status Change	Optional
	11.7aii: Change in overall trend in Conservation Status Change	Optional
	11.7bi: Change in overall Conservation Status Genuine change	Optional
	11.7bii: Change in overall trend in Conservation Status Genuine change	Optional
	11.7ci: Change in overall Conservation Status Improved knowledge or more accurate data	Optional
	11.7cii: Change in overall trend in Conservation Status Improved knowledge or more accurate data	Optional
	11.7di: Change in overall Conservation Status Different method	Optional
	11.7dii: Change in overall trend in Conservation Status Different method	Optional
	11.7ei: Change in overall Conservation Status No information	Optional
	11.7eii: Change in overall trend in Conservation Status No information	Optional
	11.7fi: Change in overall Conservation Status Other reasons	Optional
	11.7fii: Change in overall trend in Conservation Status Other reasons	Optional
	11.7gi: Change in overall Conservation Status Main reason	Optional
	11.7gii: Change in overall trend in Conservation Status Main reason	Optional
	11.8: Additional information	Optional
12. UK National Site Network (pSCIs, SCIs and SACs) coverage for Annex II species	12.1a: Annex II species population size inside the pSCIs, SCIs and SACs network Unit	Required
	12.1b: Annex II species population size inside the pSCIs, SCIs and SACs network Minimum	Required
	12.1c: Annex II species population size inside the pSCIs, SCIs and SACs network Maximum	Required
	12.1d: Annex II species population size inside the pSCIs, SCIs and SACs network Best single value	Required
	12.2: Annex II species population size inside the pSCIs, SCIs and SACs network Type of estimate	Required
	12.3: Annex II species population size inside the pSCIs, SCIs and SACs network Method used	Required

Section	Field	Optional/ required
	12.4: Annex II species population size inside the pSCIs, SCIs and SACs network Short-term trend of the population size within the network Direction	Required
	12.5: Annex II species population size inside the pSCIs, SCIs and SACs network Short-term trend of population size within the network Method used	Required
	12.6: Annex II species population size inside the pSCIs, SCIs and SACs network Short-term trend of the habitat for the species within the network Direction	Required
	12.7: Annex II species population size inside the pSCIs, SCIs and SACs network Short-term trend of habitat for the species within the network Method used	Required
	12.8: Annex II species population size inside the pSCIs, SCIs and SACs network Additional information	Optional
13. Complementary information	13.1: Justification of 1% threshold for trends	Optional
	13.2: Trans-boundary assessment	Optional
	13.3: Other relevant information	Optional

Bird Fields

Table A1C. A list of all the information collected for Habitats Regulations habitats reports via the reporting pro-forma spreadsheet fields.

Section	Field	Optional/ required
	1.2: Species code	Required
	1.3: EURING code	Required
	1.4: Species scientific name	Required
	1.5: Subspecific population	Required
	1.6: Alternative species scientific name	Optional
	1.7: Common name	Optional
	1.7: Alternative species common name	Optional
	1.8: Season	Required
	1.9 Guild	Optional
2. Population size	2.1: Year or period	Required
	2.2a: Population size Unit	Required
	2.2b: Population size Minimum	Required
	2.2c: Population size Maximum	Required
	2.2d: Population size Best single value	Required
	2.3: Type of estimate	Required
	2.4: Method used	Required
	2.5: Sources	Required
	2.6: Change and reason for change Change	Required
	2.6: Change and reason for change Genuine change	Required
	2.6: Change and reason for change Improved knowledge/more accurate data	Required
	2.6: Change and reason for change Different method	Required
	2.6: Change and reason for change No information	Required
	2.6: Change and reason for change Main reason	Required
	2.7: Additional information	Optional
	3.1.1: Short-term trend period	Required

Section	Field	Optional/ required
3. Population trend	3.1.2: Short-term trend direction	Required
	3.1.3a: Short-term trend magnitude Minimum	Required
	3.1.3b: Short-term trend magnitude Maximum	Required
	3.1.3c: Short-term trend magnitude Best single value	Required
	3.1.4: Short-term trend method used	Required
	3.1.5: Short-term trend sources	Required
	3.2.1: Long-term trend period	Required
	3.2.2: Long-term trend direction	Required
	3.2.3a: Long-term trend magnitude Minimum	Required
	3.2.3b: Long-term trend magnitude Maximum	Required
	3.2.3c: Long-term trend magnitude Best single value	Required
	3.2.4: Long-term trend method used	Required
	3.2.5: Long-term trend sources	Required
	3.3: Additional information	Optional
4. Breeding distribution map and size	4.1: Sensitive species	Required
	4.2: Year or period	Required
	4.3: Breeding distribution map	Required
	4.4: Breeding distribution surface area	Required
	4.5: Method used	Required
	4.6: Additional maps	Optional
	4.7: Sources	Required
	4.8: Additional information	Optional
5. Breeding distribution trend	5.1.1: Short-term trend period	Required
	5.1.2: Short-term trend direction	Required
	5.1.3a: Short-term trend magnitude Minimum	Required
	5.1.3b: Short-term trend magnitude Maximum	Required
	5.1.3c: Short-term trend magnitude Best single value	Required
	5.1.4: Short-term trend method used	Required
	5.1.5: Short-term trend sources	Required
	5.2.1: Long-term trend period	Required
	5.2.2: Long-term trend direction	Required
	5.2.3a: Long-term trend magnitude Minimum	Required
	5.2.3b: Long-term trend magnitude Maximum	Required
	5.2.3c: Long-term trend magnitude Best single value	Required
	5.2.4: Long-term trend method used	Required
	5.2.5: Long-term trend sources	Required
	5.3: Additional information	Optional
6. Progress in work related to international Species Action Plans (SAPs), Management Plans (MPs) and Brief Management	6.1: Type of international plan	Required
	6.2: Has a national plan been adopted?	Required
	6.3: Measures taken related to plans	Required
	6.4: Assessment of SAP's effectiveness for globally threatened species	Required
	6.5: Assessment of MP's effectiveness for huntable species in non-secure status	Required

Section	Field	Optional/ required
Statements (BMSs) NB: provided in separate Workbook, not in main Population Status Workbook	6.6: Sources of information	Required
7. Main pressures and threats. NB: provided in separate Workbook, not in main Population Status Workbook	7.1a: Characterisation of pressures/threats Code	Required
	7.1a: Characterisation of pressures/threats Name	Required
	7.1b/d: Characterisation of pressures/threats Ranking	Required
	7.1c/e: Characterisation of pressures/threats Location	Required
	7.2: Sources of information	Optional
	7.3: Additional information	Optional
8. Conservation measures. NB: provided in separate Workbook, not in main Population Status Workbook	8.1: Status of measures Needed	Required
	8.1: Status of measures Status	Required
	8.2: Main purpose of the measures taken	Required
	8.3: Location of the measures	Required
	8.4: Response to the measures	Required
	8.5: List of conservation measures Code	Required
	8.5: List of conservation measures Measure	Required
	8.6: Additional information	Optional
9. SPA coverage	9.1a: Population size inside the Natura (SPA) network Unit	Required
	9.1b: Population size inside the Natura (SPA) network Minimum	Required
	9.1c: Population size inside the Natura (SPA) network Maximum	Required
	9.1d: Population size inside the Natura (SPA) network Best single value	Required
	9.2: Type of estimate	Required
	9.3: Population size inside the network Method used	Required
	9.4: Short-term trend of population size within the network Direction	Required
	9.5: Short-term trend of population size within the network Method used	Required
	9.6: Additional information	Optional
10. Information related to Annex II species (Article 7). NB unlike the 2019 A12 Report, no hunting bag estimates are provided as they are now judged to be unreliable (see 5.3.5).	10.1: Is the species nationally hunted?	Required
11. Assessment of change in conservation concern and extinction risk	11.1: BoCC5 UK status	Required
	11.2: change since BoCC4 (UK)	Required
	11.3: IUCN GB2 status	Required
	11.4: change since GB2	Required

Appendix 2: General Evaluation Matrices to Assess Conservation Status

Appendix 2 provides a summary of FCS assessment process through a Habitat matrix (Table A2A) and species matrix (Table A2B).

Habitat FCS Matrix

Table A2A. General evaluation matrix used to assess the conservation status of habitats in the 2019–2024 Habitats Regulations reports.

	Favourable	Unfavourable-inadequate	Unfavourable-bad	Unknown
Range	Stable (loss and expansion in balance) or increasing, AND not smaller than the Favourable Reference Range	Any other combination	Large decrease, equivalent to a loss of more than 1% per year, OR more than 10% below Favourable Reference Range	No or insufficient reliable information available
Area	Stable (loss and expansion in balance) or increasing, AND not smaller than the Favourable Reference Area, AND without significant changes in distribution pattern within Range	Any other combination	Large decrease in surface Area, equivalent to a loss of more than 1% per year, OR with major losses in distribution pattern within Range, OR more than 10% below Favourable Reference Area	No or insufficient reliable information available
Structures and functions	Structures and functions (including typical species) in good condition and no significant deteriorations / pressures	Any other combination	More than 25% of the Area is Unfavourable as regards its specific structures and functions (including typical species)	No or insufficient reliable information available
Future prospects	Habitat prospects for its future are good, no significant impact from threats expected, long-term viability assured	Any other combination	Habitat prospects are bad, severe impact from threats expected, long-term viability not assured	No or insufficient reliable information available
Overall assessment	All Favourable OR three Favourable and one Unknown	One or more Unfavourable-inadequate, none Unfavourable-bad	One or more Unfavourable-bad	Two or more unknown combined with Favourable or all Unknown

Species (excluding birds) FCS Matrix

Table A2B. General evaluation matrix used to assess the conservation status of species in the 2019–2024 Habitats Regulations reports.

	Favourable	Unfavourable-inadequate	Unfavourable-bad	Unknown
Range	Stable (loss and expansion in balance) or increasing AND not smaller than the 'favourable reference Range'	Any other combination	Large decline: Equivalent to a loss of more than 1% per year within period specified by MS **OR** more than 10% below Favourable reference Range	*No or insufficient reliable information available*
Population	Population(s) not lower than 'favourable reference Population' AND reproduction, mortality and age structure not deviating from normal (if data available)	Any other combination	Large decline: Equivalent to a loss of more than 1% per year (indicative value MS may deviate from if duly justified) within period specified by MS AND below 'favourable reference Population' OR More than 25% below Favourable reference Population OR Reproduction, mortality and age structure strongly deviating from normal (if data available)	*No or insufficient reliable information available*
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long-term survival of the species	Any other combination	Area of habitat is clearly not sufficiently large to ensure the long-term survival of the species OR Habitat quality is bad, clearly not allowing long-term survival of the species	*No or insufficient reliable information available*
Future prospects	Main pressures and threats to the species not significant; species will remain viable on the long-term	Any other combination	Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk.	*No or insufficient reliable information available*
Overall assessment	All Favourable OR three Favourable and one Unknown	One or more Unfavourable-inadequate but no Unfavourable-bad	One or more Unfavourable-bad	Two or more Unknown combined with Favourable or all Unknown

Appendix 3: Favourable Reference Values

Appendix 3 details the use of Favourable Reference Values in the 2019–2024 Habitat Regulations Reporting.

A: What are Favourable Reference Values?

FRVs are “a tool to deal with the consideration of long-term viability of a species or habitat in their natural range including ecological variations” (as defined in the Bern guidance). They are one element used in assessing the conservation status of a habitat or species and help to define the distance to a Favourable situation. There are three FRVs used in Habitats Regulations reporting which assess Range (Habitat and Species), and the Area (Habitat), or Population (Species) of a given feature. The distribution of FRVs across feature types can be found in table A3A, and FRV definitions in table A3B.

Table A3A. Distribution of FRVs across feature types in Habitat Regulations Reporting

FRVS	
Habitats	**Species**
Favourable Reference Range (FRR)	Favourable Reference Range (FRR)
Favourable Reference Area (FRA)	Favourable Reference Population (FRP)

Table A3B. Definitions of Favourable Reference Values by the Habitats Committee in 2004 (European Commission, 2005)

FRV	Definition
FRR	Range within which all significant ecological variations of the habitat/species are included for a given biogeographical region and which is sufficiently large to allow the long-term survival of the habitat/species; Favourable reference value must be at least the range (in size and configuration) when the Directive came into force.
FRP	Population in a given biogeographical region considered the minimum necessary to ensure the long-term viability of the species; Favourable reference value must be at least the size of the population when the Directive came into force.
FRA	Total surface area of habitat in a given biogeographical region considered the minimum necessary to ensure the long-term viability of the habitat type; this should include necessary areas for restoration or development for those habitat types for which the present coverage is not sufficient to ensure long-term viability; Favourable reference value must be at least the surface area when the Directive came into force.

FRVs can be:

- A figure: where there is good data availability and high certainty e.g. Mountain hare, UK FRP of 393,700 individuals
- An operator: where there is less certainty e.g. Humid dune slacks, UK FRA between 2% and 10% smaller than the FRA (see [FRV operator table])
    - An operator can be used to set a figure in some circumstances e.g. blanket bog, UK FRR is 113,909 km^2 based on decision range is 'less than 2% smaller than the FRR'
- Unknown: Where data is too uncertain the FRV can be reported as unknown

An operator is a snapshot in time; it is a reference point to be used against the current Area, Population, or Range. If there has been a significant change in the Area, Population, or Range since the operator was set, it will need to be reviewed. In contrast where a value has been set as a FRV, e.g. a number of individuals, then this will be applicable despite any change in population since the FRV was set, provided no new evidence suggest that that Favourable reference value was incorrect.

B: FRVs and Status Assessments

FRVs are used as one of the tools to assess the conservation status of a feature. Generally, the current value for Area, Range, or Population is compared against the respective FRV. Whether the current value is approximately equal to, larger, or smaller than the FRV impacts the final conservation status through the use of the general evaluation matrixes (e.g. Appendix 2). When FRVs are set as unknown it is not always possible to assess FCS.

C: FRV Field Changes

Bern have updated the FRV reporting fields, and therefore we have adopted them in our reporting. These changes are:

- The 'Operator' field (Habitat fields: 4.10b, 5.13b ,Species fields:5.10b, 6.15b) has changed to include different 'pre-defined FRV increments', i.e. different operators are used in this reporting round (see Table A3C and A3D for detail of changes)
- The 'method used' field (Habitat fields: 4.10d,5.13d ,Species fields:5.10d, 6.15d) was previously a free text field, by now is either a Model-based approach, Reference-based approach, Expert opinion or Other.

Table A3C. Update in species operators between 2019 Article 17 reporting and 2019–2024 Habitats Regulations reporting.

Species FRV Operators		
FRV	**2019 Article 17 reporting**	**2019–2024 Habitats Regulations reporting**
FRP	**Approximately equal to** the Favourable Reference Range (less than 5% smaller)	Less than 5% smaller than the FRP
	More than (no more than 25% above the current range area)	Between 5 and 25% smaller than the FRP
	Much more than (more than 25% above the current range area)	Between 26 and 50% smaller than the FRP
		Between 51 and 100% smaller than the FRP

	Unknown	Unknown
FRR	**Approximately equal to** the Favourable Reference Range (less than 2% smaller)	Less than 2% smaller than the FRR
	More than (no more than 10% above the current range area)	Between 2% and 10% smaller than the FRR
	Much more than (more than 10% above the current range area)	Between 11% and 50% smaller than the FRR
		Between 51% and 100% smaller than the FRR
	Unknown	Unknown

Table A3D. Update in habitat operators between 2013-2018 Article 17 reporting and 2019–2024 Habitats Regulations reporting

Habitat FRV Operators		
FRV	**2019 Article 17 reporting**	**2019–2024 Habitats Regulations reporting**
FRA	**Approximately equal to** the Favourable Reference Range (less than 2% smaller)	Less than 2% smaller than the FRA
	More than (no more than 10% above the current range area)	Between 2% and 10% smaller than the FRA
	Much more than (more than 10% above the current range area)	Between 11% and 25% smaller than the FRA
		Between 51 and 100% smaller than the FRA
	Less than (the current range area)	No equivalent
	Unknown	Unknown
	Approximately equal to the Favourable Reference Range (less than 2% smaller)	Less than 2% smaller than the FRR
FRR	**More than** (no more than 10% above the current range area)	Between 2% and 10% smaller than the FRR
	Much more than (more than 10% above the current range area)	Between 11% and 50% smaller than the FRR
		Between 51% and 100% smaller than the FRR
	Less than (the current range area)	No equivalent
	Unknown	Unknown

D: Setting FRVs

The principles and methodology developed for the setting UK level FRVs in previous reporting rounds are based off the EU guidance. FRVs are not fixed and should be reviewed periodically as more data becomes available or conditions change and should consider what

is ecologically and technically feasible, with a precautionary approach used to ensure conservation efforts are protective. In previous Article 17 reporting FRVs were only set at a UK-level.

For this reporting round, FRVs needed to be set at a country level for the first time. The UK FRV figures cannot be applied at a country level because they are a reference figure to which to compare a reported UK Population, Area, or Range. In an ideal world, each country would set its own FRVs based on the best available data within each country. Unfortunately, this has not been possible for the 2019–2024 reporting round due to time and resource constraints. Instead, the UK level FRVs were converted, where they were a specific figure, into operators which allowed application at a country scale. This approach assumes similar trends across the four countries for the features, but with some flexibility due to being a percentage field.

Operator approach

If the 2019 UK FRV was an operator, the same operator was used at a country level (see table A3C and A3D). This assumes similar trends in each country for features, but with some flexibility due to being a percentage field.

Where the UK FRV was a figure, and the feature was present in more than one country, an FRV operator was provided based on the 2019 audit and expert opinion. See Figure A3A as an example of this approach.

H91D0 – Bog woodland FRA audit:
The bulk of the resource typically merges into either seminatural bog or woodland, which provides some degree of connectivity between bog woodland sites. Fragmentation and isolation are anyway most likely to lead to impoverishment rather than complete habitat loss, so the view taken is that an increase of **no more than 10% above the current area** of H91D0 is necessary to remedy this issue.

No more than 10% above the current area= Equivalent to between 2% and 10% smaller than the FRA operator (table A3D).

Figure A3A. An example outlining the operator approach to setting country level FRVs from the 2019 UK FRV.

Country level review of FRVs

JNCC made an initial assessment of country-level FRVs based on the 2019 UK FRVs, with the FRV operator unclear for some features requiring review by each country. These were provided to countries for review using Figure A3B below as guidance. Where countries edited FRVs the approach taken and any additional information on setting feature FRVs was recorded in an FRV audit document.

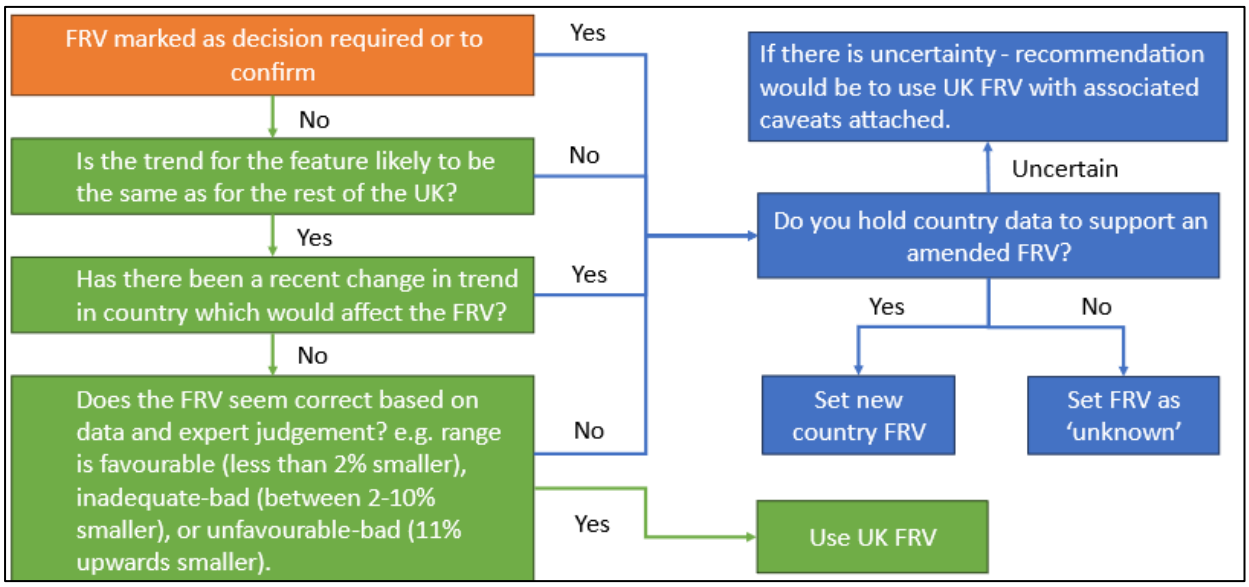

Figure A3B. A flow diagram provided to the CNCBs from JNCC to help guide country level FRV setting.

In England, work has been under way through the Favourable Conservation Status project to define parameters for FCS at England scale. Whilst features reported on through Regulation 9A have been prioritised in the project, the definitions have only been completed and published for a proportion of features. Where this is the case the FCS definition has been used to set FRVs at England scale and is referenced in the species sources.

Appendix 4: Features Reported

Appendix 4 details all the features included in the 2019–2024 Habitats Regulations Reporting, and which countries reported them (Habitats- table A4A, Species excluding birds- table A4B, Birds: table A4C)

Habitat features

Table A4A. All habitats reported on in the 2019–2024 Habitats Regulations Reporting and the countries that assessed them. This table is ordered alphabetically by habitat group. Reefs (Biogenic) Reefs (Rocky) are marked as 'optional' (see 2.1.2).

Habitat name	Habitat code	Habitat group	Feature assessed by				
			ENG	NI	SCO	WLS	UK Offshore
Embryonic shifting dunes	H2110	Coastal sand dunes and continental dunes	Y	Y	Y	Y	N
Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`)	H2120	Coastal sand dunes and continental dunes	Y	Y	Y	Y	N
Fixed dunes with herbaceous vegetation (`grey dunes`)	H2130	Coastal sand dunes and continental dunes	Y	N	Y	Y	N
Decalcified fixed dunes with *Empetrum nigrum*	H2140	Coastal sand dunes and continental dunes	N	Y	Y	N	N
Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)	H2150	Coastal sand dunes and continental dunes	Y	N	Y	Y	N
Dunes with *Hippophae rhamnoides*	H2160	Coastal sand dunes and continental dunes	Y	Y	N	N	N
Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)	H2170	Coastal sand dunes and continental dunes	Y	Y	Y	Y	N
Humid dune slacks	H2190	Coastal sand dunes and continental dunes	Y	N	Y	Y	N
Machairs	H21A0	Coastal sand dunes and continental dunes	N	N	Y	N	N
Coastal dunes with *Juniperus* spp.	H2250	Coastal sand dunes and continental dunes	N	N	Y	N	N
Inland dunes with open *Corynephorus* and *Agrostis* grasslands	H2330	Coastal sand dunes and continental dunes	Y	N	N	N	N
Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)	H9120	Forests	Y	N	N	Y	N
Asperulo-Fagetum beech forests	H9130	Forests	Y	N	N	Y	N

Habitat name	Habitat code	Habitat group	Feature assessed by				
			ENG	NI	SCO	WLS	UK Offshore
Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*	H9160	Forests	Y	Y	N	N	N
Tilio-Acerion forests of slopes, screes and ravines	H9180	Forests	Y	N	Y	Y	N
Old acidophilous oak woods with *Quercus robur* on sandy plains	H9190	Forests	Y	Y	N	N	N
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	H91A0	Forests	Y	N	Y	Y	N
Caledonian forest	H91C0	Forests	N	Y	Y	N	N
Bog woodland	H91D0	Forests	Y	Y	Y	Y	N
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)	H91E0	Forests	Y	N	Y	Y	N
Taxus baccata woods of the British Isles	H91J0	Forests	Y	N	N	Y	N
Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)	H3110	Freshwater habitats	Y	Y	Y	N	N
Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*	H3130	Freshwater habitats	Y	Y	Y	Y	N
Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	H3140	Freshwater habitats	Y	Y	Y	Y	N
Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation	H3150	Freshwater habitats	Y	Y	Y	Y	N
Natural dystrophic lakes and ponds	H3160	Freshwater habitats	Y	N	Y	Y	N
Mediterranean temporary ponds	H3170	Freshwater habitats	Y	Y	N	N	N
Turloughs	H3180	Freshwater habitats	N	Y	N	Y	N
Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	H3260	Freshwater habitats	Y	Y	Y	Y	N
Maerl beds	S1376-S1377	Maerl bed	Y	Y	Y	Y	N
Sandbanks which are slightly covered by sea water all the time	H1110	Marine, coastal and halophytic habitats	Y	Y	Y	Y	Y
Estuaries	H1130	Marine, coastal and halophytic habitats	Y	Y	Y	Y	N
Mudflats and sandflats not covered by seawater at low tide	H1140	Marine, coastal and halophytic habitats	Y	Y	Y	Y	N

Habitat name	Habitat code	Habitat group	Feature assessed by				
			ENG	NI	SCO	WLS	UK Offshore
Coastal lagoons	H1150	Marine, coastal and halophytic habitats	Y	Y	Y	Y	N
Large shallow inlets and bays	H1160	Marine, coastal and halophytic habitats	Y	Y	Y	Y	N
Reefs	H1170	Marine, coastal and halophytic habitats	Y	Y	Y	Y	Y
Reefs (Biogenic)	H1170-B	Marine, coastal and halophytic habitats	Optional				
Reefs (Rocky)	H1170-R	Marine, coastal and halophytic habitats	Optional				
Submarine structures made by leaking gases	H1180	Marine, coastal and halophytic habitats	N	N	Y	Y	Y
Annual vegetation of drift lines	H1210	Marine, coastal and halophytic habitats	Y	Y	Y	Y	N
Perennial vegetation of stony banks	H1220	Marine, coastal and halophytic habitats	Y	Y	Y	Y	N
Vegetated sea cliffs of the Atlantic and Baltic coasts	H1230	Marine, coastal and halophytic habitats	Y	N	Y	Y	N
Salicornia and other annuals colonising mud and sand	H1310	Marine, coastal and halophytic habitats	Y	N	Y	Y	N
Spartina swards (*Spartinion maritimae*)	H1320	Marine, coastal and halophytic habitats	Y	Y	N	N	N
Atlantic salt meadows (Glauco-*Puccinellietalia maritimae*)	H1330	Marine, coastal and halophytic habitats	Y	N	Y	Y	N
Inland salt meadows	H1340	Marine, coastal and halophytic habitats	Y	N	N	N	N
Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	H1420	Marine, coastal and halophytic habitats	Y	Y	N	Y	N
Calaminarian grasslands of the *Violetalia calaminariae*	H6130	Natural and semi-natural grassland formations	Y	Y	Y	Y	N
Siliceous alpine and boreal grasslands	H6150	Natural and semi-natural grassland formations	Y	N	Y	Y	N
Alpine and subalpine calcareous grasslands	H6170	Natural and semi-natural grassland formations	N	Y	Y	Y	N
Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)	H6210	Natural and semi-natural grassland formations	Y	Y	Y	Y	N
Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe)	H6230	Natural and semi-natural grassland formations	Y	Y	Y	Y	N
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	H6410	Natural and semi-natural grassland formations	Y	Y	Y	Y	N
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	H6430	Natural and semi-natural grassland formations	Y	N	Y	Y	N
Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)	H6510	Natural and semi-natural grassland formations	Y	N	N	Y	N

Habitat name	Habitat code	Habitat group	Feature assessed by				
			ENG	NI	SCO	WLS	UK Offshore
Mountain hay meadows	H6520	Natural and semi-natural grassland formations	Y	Y	Y	N	N
Active raised bogs	H7110	Raised bogs and mires and fens	Y	Y	Y	Y	N
Degraded raised bogs still capable of natural regeneration	H7120	Raised bogs and mires and fens	Y	Y	Y	Y	N
Blanket bogs	H7130	Raised bogs and mires and fens	Y	Y	Y	Y	N
Transition mires and quaking bogs	H7140	Raised bogs and mires and fens	Y	Y	Y	Y	N
Depressions on peat substrates of the *Rhynchosporion*	H7150	Raised bogs and mires and fens	Y	Y	Y	Y	N
Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	H7210	Raised bogs and mires and fens	Y	Y	N	Y	N
Petrifying springs with tufa formation (*Cratoneurion*)	H7220	Raised bogs and mires and fens	Y	Y	Y	Y	N
Alkaline fens	H7230	Raised bogs and mires and fens	Y	N	Y	Y	N
Alpine pioneer formations of the *Caricion bicoloris-atrofuscae*	H7240	Raised bogs and mires and fens	Y	Y	Y	Y	N
Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*)	H8110	Rocky habitats and caves	Y	Y	Y	Y	N
Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*)	H8120	Rocky habitats and caves	Y	Y	Y	Y	N
Calcareous rocky slopes with chasmophytic vegetation	H8210	Rocky habitats and caves	Y	Y	Y	Y	N
Siliceous rocky slopes with chasmophytic vegetation	H8220	Rocky habitats and caves	Y	Y	Y	Y	N
Limestone pavements	H8240	Rocky habitats and caves	Y	N	Y	Y	N
Caves not open to the public	H8310	Rocky habitats and caves	Y	Y	N	Y	N
Submerged or partially submerged sea caves	H8330	Rocky habitats and caves	Y	Y	Y	Y	N
Stable xerothermophilous formations with *Buxus sempervirens* on rock slopes (*Berberidion* p.p.)	H5110	Sclerophyllous scrub (matorral)	Y	N	N	N	N
Juniperus communis formations on heaths or calcareous grasslands	H5130	Sclerophyllous scrub (matorral)	Y	N	Y	Y	N
Northern Atlantic wet heaths with *Erica tetralix*	H4010	Temperate heath and scrub	Y	N	Y	Y	N
Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*	H4020	Temperate heath and scrub	Y	Y	N	N	N
European dry heaths	H4030	Temperate heath and scrub	Y	N	Y	Y	N

Habitat name	Habitat code	Habitat group	Feature assessed by				
			ENG	NI	SCO	WLS	UK Offshore
Dry Atlantic coastal heaths with *Erica vagans*	H4040	Temperate heath and scrub	Y	Y	N	N	N
Alpine and Boreal heaths	H4060	Temperate heath and scrub	Y	N	Y	Y	N
Sub-Arctic *Salix* spp. scrub	H4080	Temperate heath and scrub	Y	N	Y	N	N

Species (excluding birds) features

Table A4B. All species reported on in the 2019–2024 Habitats Regulations reporting and the countries that assessed them. Species marked as 'UK only' are where reports have been compiled by JNCC (see section 1.2.2). This table is ordered alphabetically by taxonomic group.

Species scientific name	Species common name	Species code	Taxonomic group	Species occurrence	Annexes	Feature assessed by				
						ENG	NI	SCO	WLS	UK only
Triturus cristatus	Great crested newt	S1166	Amphibian	Resident	II,IV	Y	N	Y	Y	
Rana temporaria	Common frog	S1213	Amphibian	Resident	V	Y	Y	Y	Y	
Epidalea calamita	Natterjack toad	S6284	Amphibian	Resident	IV	Y	N	Y	Y	
Pelophylax lessonae	Pool frog	S6981	Amphibian	Resident	IV	Y	N	N	N	
Hirudo medicinalis	Medicinal leech	S1034	Annelid	Resident	V	Y	N	Y	Y	
Coenagrion mercuriale	Southern damselfly	S1044	Arthropod	Resident	II	Y	N	N	Y	
Maculinea arion	Large blue butterfly	S1058	Arthropod	Resident	IV	Y	N	N	N	
Euphydryas aurinia	Marsh fritillary butterfly	S1065	Arthropod	Resident	II	Y	Y	Y	Y	
Limoniscus violaceus	Violet click beetle	S1079	Arthropod	Resident	II	Y	N	N	N	

Species scientific name	Species common name	Species code	Taxonomic group	Species occurrence	Annexes	Feature assessed by				
						ENG	NI	SCO	WLS	UK only
Lucanus cervus	Stag beetle	S1083	Arthropod	Resident	II	Y	N	N	Y	
Austropotamobius pallipes	White-clawed crayfish	S1092	Arthropod	Resident	II,V	Y	Y	N	Y	
Gortyna borelii lunata	Fisher's estuarine moth	S4035	Arthropod	Resident	II,IV	Y	N	N	N	
Euplagia quadripunctaria	Jersey tiger moth	S6199	Arthropod	Resident	II	Y	N	N	N	
Petromyzon marinus	Sea lamprey	S1095	Fish	Resident	II	Y	Y	Y	Y	
Lampetra planeri	Brook lamprey	S1096	Fish	Resident	II	Y	Y	Y	Y	
Lampetra fluviatilis	River lamprey	S1099	Fish	Resident	II,V	Y	Y	Y	Y	
Acipenser sturio	Common sturgeon	S1101	Fish	Vagrant	IV	Y	Y	Y	Y	
Alosa alosa	Allis shad	S1102	Fish	Resident	II,V	Y	N	Y	Y	
Alosa fallax	Twaite shad	S1103	Fish	Resident	II,V	Y	N	Y	Y	
Salmo salar	Atlantic salmon	S1106	Fish	Resident	II,V	Y	Y	Y	Y	
Thymallus thymallus	Grayling	S1109	Fish	Resident	V	Y	N	N	Y	
Coregonus albula	Vendace	S2492	Fish	Resident	V	Y	N	Y	N	
Coregonus autumnalis pollan	Pollan	S5076	Fish	Resident	V	N	Y	N	N	
Barbus barbus	Barbel	S5085	Fish	Resident	V	Y	N	N	N	
Coregonus lavaretus	Whitefish	S6353	Fish	Resident	V	Y	N	Y	Y	

Species scientific name	Species common name	Species code	Taxonomic group	Species occurrence	Annexes	Feature assessed by				
						ENG	NI	SCO	WLS	UK only
Cobitis taenia	Spined loach	S6963	Fish	Resident	II	Y	N	N	N	
Cottus gobio all others	Bullhead	S6965	Fish	Resident	II	Y	N	N	Y	
Cladonia subgenus Cladina	Cladonia subgenus Cladina subgenus of lichens	S1378	Lower plant	Resident	V	Y	Y	Y	Y	
Bruchia vogesiaca	Bruchia moss	S1385	Lower plant	Resident	II	Y	N	N	N	
Buxbaumia viridis	Green shield-moss	S1386	Lower plant	Resident	II	N	N	Y	N	
Orthotrichum rogeri		S1387	Lower plant	Resident	II	Y	N	N	N	
Marsupella profunda	Western rustwort	S1390	Lower plant	Resident	II	Y	N	N	N	
Petalophyllum ralfsii	Petalwort	S1395	Lower plant	Resident	II	Y	Y	Y	Y	
Leucobryum glaucum	Large white-moss	S1400	Lower plant	Resident	V	Y	Y	Y	Y	
Sphagnum sp.	Bog-mosses	S1409	Lower plant	Resident	V	Y	Y	Y	Y	
Hamatocaulis vernicosus	Slender green feather-moss	S6216	Lower plant	Resident	II	Y	Y	Y	Y	
Megaptera novaeangliae	Humpback whale	S1345	Marine mammal	Resident	IV	N	N	N	N	Y
Tursiops truncatus (UK)	Bottlenose dolphin	S1349	Marine mammal	Resident	II,IV	N	N	N	N	Y
Delphinus delphis	Common dolphin	S1350	Marine mammal	Resident	IV	N	N	N	N	Y
Phocoena phocoena (UK)	Harbour porpoise	S1351	Marine mammal	Resident	II,IV	N	N	N	N	Y

Species scientific name	Species common name	Species code	Taxonomic group	Species occurrence	Annexes	Feature assessed by				
						ENG	NI	SCO	WLS	UK only
Halichoerus grypus	Grey seal	S1364	Marine mammal	Resident	II,V	N	N	N	N	Y
Phoca vitulina	Common seal	S1365	Marine mammal	Resident	II,V	N	N	N	N	Y
Orcinus orca	Killer whale	S2027	Marine mammal	Resident	IV	N	N	N	N	Y
Pseudorca crassidens	False killer whale	S2028	Marine mammal	Vagrant	IV	N	N	N	N	Y
Globicephala melas	Long-finned pilot whale	S2029	Marine mammal	Resident	IV	N	N	N	N	Y
Grampus griseus	Risso's dolphin	S2030	Marine mammal	Resident	IV	N	N	N	N	Y
Lagenorhynchus acutus	Atlantic white-sided dolphin	S2031	Marine mammal	Resident	IV	N	N	N	N	Y
Lagenorhynchus albirostris	White-beaked dolphin	S2032	Marine mammal	Resident	IV	N	N	N	N	Y
Stenella coeruleoalba	Striped dolphin	S2034	Marine mammal	Resident	IV	N	N	N	N	Y
Balaenoptera acutorostrata	Minke whale	S2618	Marine mammal	Resident	IV	N	N	N	N	Y
Balaenoptera borealis	Sei whale	S2619	Marine mammal	Vagrant	IV	N	N	N	N	Y
Balaenoptera physalus	Fin whale	S2621	Marine mammal	Resident	IV	N	N	N	N	Y
Kogia breviceps	Pygmy sperm whale	S2622	Marine mammal	Vagrant	IV	N	N	N	N	Y
Physeter macrocephalus	Sperm whale	S2624	Marine mammal	Resident	IV	N	N	N	N	Y
Ziphiidae	Beaked whale	S2625-S2035-S5034-S2038-	Marine mammal	Resident	IV	N	N	N	N	Y

Species scientific name	Species common name	Species code	Taxonomic group	Species occurrence	Annexes	Feature assessed by				
						ENG	NI	SCO	WLS	UK only
		S2037-S5033								
Cystophora cristata	Hooded seal	S2637	Marine mammal	Vagrant	IV	N	N	N	N	Y
Erignathus barbatus	Bearded seal	S2638	Marine mammal	Vagrant	IV	N	N	N	N	Y
Pagophilus groenlandicus	Harp seal	S2639	Marine mammal	Vagrant	IV	N	N	N	N	Y
Balaenoptera musculus	Blue whale	S5020	Marine mammal	Vagrant	IV	N	N	N	N	Y
Delphinapterus leucas	Beluga	S5029	Marine mammal	Vagrant	IV	N	N	N	N	Y
Pusa hispida	Ringed seal	S6305	Marine mammal	Vagrant	IV	N	N	N	N	Y
Vertigo geyeri	Geyer's whorl snail	S1013	Mollusc	Resident	II	Y	Y	Y	Y	
Vertigo angustior	Narrow-mouthed whorl snail	S1014	Mollusc	Resident	II	Y	Y	Y	Y	
Vertigo genesii	Round-mouthed whorl snail	S1015	Mollusc	Resident	II	Y	N	Y	N	
Vertigo moulinsiana	Desmoulin's whorl snail	S1016	Mollusc	Resident	II	Y	Y	N	Y	
Helix pomatia	Roman snail	S1026	Mollusc	Resident	V	Y	N	N	N	
Margaritifera margaritifera	Freshwater pearl mussel	S1029	Mollusc	Resident	II,V	Y	Y	Y	Y	
Anisus vorticulus	Little ramshorn whirlpool snail	S4056	Mollusc	Resident	II,IV	Y	N	N	N	

Species scientific name	Species common name	Species code	Taxonomic group	Species occurrence	Annexes	Feature assessed by				
						ENG	NI	SCO	WLS	UK only
Dermochelys coriacea	Leatherback turtle	S1223	Reptile	Resident	IV	N	N	N	N	Y
Caretta caretta	Loggerhead turtle	S1224	Reptile	Vagrant	IV	N	N	N	N	Y
Eretmochelys imbricata	Hawksbill turtle	S1225	Reptile	Vagrant	IV	N	N	N	N	Y
Lepidochelys kempii	Kemp's ridley turtle	S1226	Reptile	Vagrant	IV	N	N	N	N	Y
Chelonia mydas	Green turtle	S1227	Reptile	Vagrant	IV	N	N	N	N	Y
Lacerta agilis	Sand lizard	S1261	Reptile	Resident	IV	Y	N	N	Y	
Coronella austriaca	Smooth snake	S1283	Reptile	Resident	IV	Y	N	N	N	
Rhinolophus hipposideros	Lesser horseshoe bat	S1303	Terrestrial mammal	Resident	II,IV	Y	N	N	Y	
Rhinolophus ferrumequinum	Greater horseshoe bat	S1304	Terrestrial mammal	Resident	II,IV	Y	N	N	Y	
Barbastella barbastellus	Barbastelle	S1308	Terrestrial mammal	Resident	II,IV	Y	N	N	Y	
Pipistrellus pipistrellus	Common pipistrelle	S1309	Terrestrial mammal	Resident	IV	Y	Y	Y	Y	
Nyctalus noctula	Noctule	S1312	Terrestrial mammal	Resident	IV	Y	N	Y	Y	
Eptesicus nilssonii	Northern bat	S1313	Terrestrial mammal	Vagrant	IV	Y	Y	Y	Y	
Myotis daubentonii	Daubenton's bat	S1314	Terrestrial mammal	Resident	IV	Y	Y	Y	Y	
Pipistrellus nathusii	Nathusius' pipistrelle	S1317	Terrestrial mammal	Resident	IV	Y	Y	Y	Y	
Myotis dasycneme	Pond Bat	S1318	Terrestrial mammal	Vagrant	IV	Y	Y	Y	Y	

Species scientific name	Species common name	Species code	Taxonomic group	Species occurrence	Annexes	Feature assessed by				
						ENG	NI	SCO	WLS	UK only
Myotis brandtii	Brandt's bat	S1320	Terrestrial mammal	Resident	IV	Y	N	Y	Y	
Myotis emarginatus	Geofferies bat	S1321	Terrestrial mammal	Vagrant	IV	Y	Y	Y	Y	
Myotis nattereri	Natterer's bat	S1322	Terrestrial mammal	Resident	IV	Y	Y	Y	Y	
Myotis bechsteinii	Bechstein's bat	S1323	Terrestrial mammal	Resident	II,IV	Y	N	N	Y	
Myotis myotis	Greater mouse-eared bat	S1324	Terrestrial mammal	Vagrant	IV	Y	Y	Y	Y	
Plecotus auritus	Brown long-eared bat	S1326	Terrestrial mammal	Resident	IV	Y	Y	Y	Y	
Eptesicus serotinus	Serotine	S1327	Terrestrial mammal	Resident	IV	Y	N	N	Y	
Plecotus austriacus	Grey long-eared bat	S1329	Terrestrial mammal	Resident	IV	Y	N	N	N	
Myotis mystacinus	Whiskered bat	S1330	Terrestrial mammal	Resident	IV	Y	Y	Y	Y	
Nyctalus leisleri	Leisler's bat	S1331	Terrestrial mammal	Resident	IV	Y	Y	Y	Y	
Vespertilio murinus	Particoloured bat	S1332	Terrestrial mammal	Vagrant	IV	Y	Y	Y	Y	
Lepus timidus	Mountain hare	S1334	Terrestrial mammal	Resident	V	Y	Y	Y	N	
Castor fiber	Beaver	S1337	Terrestrial mammal	Resident	II,IV	Y	N	Y	N	
Muscardinus avellanarius	Common dormouse	S1341	Terrestrial mammal	Resident	IV	Y	N	N	Y	
Lutra lutra	Otter	S1355	Terrestrial mammal	Resident	II,IV	Y	Y	Y	Y	
Martes martes	Pine marten	S1357	Terrestrial mammal	Resident	V	Y	Y	Y	Y	

Species scientific name	Species common name	Species code	Taxonomic group	Species occurrence	Annexes	Feature assessed by				
						ENG	NI	SCO	WLS	UK only
Mustela putorius	Polecat	S1358	Terrestrial mammal	Resident	V	Y	N	Y	Y	
Felis silvestris	Wildcat	S1363	Terrestrial mammal	Resident	IV	N	N	Y	N	
Pipistrellus kuhlii	Kuhls pipistrelle	S2016	Terrestrial mammal	Vagrant	IV	Y	Y	Y	Y	
Myotis alcathoe	Alcathoe bat	S5003	Terrestrial mammal	Resident	IV	Y	N	N	N	
Pipistrellus pygmaeus	Soprano pipistrelle	S5009	Terrestrial mammal	Resident	IV	Y	Y	Y	Y	
Lycopodium sp.	Clubmosses	S1413	Vascular plant	Resident	V	Y	Y	Y	Y	
Rumex rupestris	Shore dock	S1441	Vascular plant	Resident	II,IV	Y	N	N	Y	
Saxifraga hirculus	Marsh saxifrage	S1528	Vascular plant	Resident	II,IV	Y	Y	Y	N	
Apium repens	Creeping marshwort	S1614	Vascular plant	Resident	II,IV	Y	N	N	N	
Gentianella anglica	Early gentian	S1654	Vascular plant	Resident	II,IV	Y	N	N	Y	
Luronium natans	Floating water-plantain	S1831	Vascular plant	Resident	II,IV	Y	N	N	Y	
Najas flexilis	Slender naiad	S1833	Vascular plant	Resident	II,IV	Y	N	Y	N	
Ruscus aculeatus	Butcher’s broom	S1849	Vascular plant	Resident	V	Y	N	N	Y	
Cypripedium calceolus	Lady's-slipper orchid	S1902	Vascular plant	Resident	II,IV	Y	N	N	N	
Liparis loeselii	Fen orchid	S1903	Vascular plant	Resident	II,IV	Y	N	N	Y	
Vandenboschia speciosa	Killarney fern	S6985	Vascular plant	Resident	II,IV	Y	Y	Y	Y	

Bird features

Table A4C. Bird species reported on in the 2019–2024 Habitats Regulations reporting and their population (breeding, wintering, or passage). These were all assessed at a UK level.

Species code	Species scientific name	Species common name	Season	Species code	Species scientific name	Species common name	Season
A001	*Gavia stellata*	Red-throated Diver	Breeding	A156	*Limosa limosa*	Black-tailed Godwit	Winter
A001	*Gavia stellata*	Red-throated Diver	Winter	A614-A	*Limosa limosa limosa*	Black-tailed Godwit	Breeding
A002	*Gavia arctica*	Black-throated Diver	Breeding	A616	*Limosa limosa islandica*	Black-tailed Godwit	Breeding
A002	*Gavia arctica*	Black-throated Diver	Winter	A157	*Limosa lapponica*	Bar-tailed Godwit	Winter
A003	*Gavia immer*	Great Northern Diver	Winter	A158	*Numenius phaeopus*	Whimbrel	Breeding
A502	*Gavia adamsii*	White-billed Diver	Passage	A158	*Numenius phaeopus*	Whimbrel	Passage
A004	*Tachybaptus ruficollis*	Little Grebe	Breeding	A768	*Numenius arquata arquata*	Eurasian Curlew	Winter
A004	*Tachybaptus ruficollis*	Little Grebe	Winter	A768	*Numenius arquata arquata*	Eurasian Curlew	Breeding
A005	*Podiceps cristatus*	Great Crested Grebe	Breeding	A161	*Tringa erythropus*	Spotted Redshank	Winter
A005	*Podiceps cristatus*	Great Crested Grebe	Winter	A162	*Tringa totanus*	Common Redshank	Winter
A006	*Podiceps grisegena*	Red-necked Grebe	Winter	A162	*Tringa totanus*	Common Redshank	Breeding
A007	*Podiceps auritus*	Horned Grebe	Breeding	A164	*Tringa nebularia*	Common Greenshank	Winter
A007	*Podiceps auritus*	Horned Grebe	Winter	A164	*Tringa nebularia*	Common Greenshank	Breeding
A008	*Podiceps nigricollis*	Black-necked Grebe	Breeding	A165	*Tringa ochropus*	Green Sandpiper	Winter
A008	*Podiceps nigricollis*	Black-necked Grebe	Winter	A165	*Tringa ochropus*	Green Sandpiper	Breeding
A009	*Fulmarus glacialis*	Fulmar	Breeding	A166	*Tringa glareola*	Wood Sandpiper	Breeding
A013	*Puffinus puffinus*	Manx Shearwater	Breeding	A168	*Actitis hypoleucos*	Common Sandpiper	Breeding
A693	*Puffinus mauretanicus*	Balearic Shearwater	Passage	A168	*Actitis hypoleucos*	Common Sandpiper	Winter
A014	*Hydrobates pelagicus*	European Storm-petrel	Breeding	A169	*Arenaria interpres*	Ruddy Turnstone	Winter
A854	*Hydrobates leucorhous*	Leach's Storm-petrel	Breeding	A170	*Phalaropus lobatus*	Red-necked Phalarope	Breeding
A016	*Morus bassanus*	Northern Gannet	Breeding	A173	*Stercorarius parasiticus*	Arctic Skua	Breeding
A391	*Phalacrocorax carbo*	Great Cormorant	Breeding	A175	*Catharacta skua*	Great Skua	Breeding
A683	*Phalacrocorax carbo*	Great Cormorant	Winter	A176	*Larus melanocephalus*	Mediterranean Gull	Breeding
A391	*Phalacrocorax carbo*	Great Cormorant	Breeding	A176	*Larus melanocephalus*	Mediterranean Gull	Winter
A391	*Phalacrocorax carbo*	Great Cormorant	Winter	A862	*Hydrocoloeus minutus*	Little Gull	Winter
AB02	*Gulosus aristotelis aristotelis*	European Shag	Breeding	A179	*Larus ridibundus*	Black-headed Gull	Breeding
AB02	*Gulosus aristotelis aristotelis*	European Shag	Winter	A179	*Larus ridibundus*	Black-headed Gull	Winter
A021	*Botaurus stellaris*	Great Bittern	Breeding	A182	*Larus canus*	Mew Gull	Breeding
A021	*Botaurus stellaris*	Great Bittern	Winter	A182	*Larus canus*	Mew Gull	Winter
A025	*Bubulcus ibis*	Cattle Egret	Breeding	A489	*Larus fuscus*	Lesser Black-backed Gull	Breeding

Species code	Species scientific name	Species common name	Season	Species code	Species scientific name	Species common name	Season
A025	*Bubulcus ibis*	Cattle Egret	Winter	A489	*Larus fuscus*	Lesser Black-backed Gull	Winter
A026	*Egretta garzetta*	Little Egret	Breeding	A895	*Larus argentatus argenteus*	Herring Gull	Breeding
A026	*Egretta garzetta*	Little Egret	Winter	A895	*Larus argentatus argenteus*	Herring Gull	Winter
A773	*Ardea alba*	Great White Egret	Winter	A185	*Larus glaucoides*	Iceland Gull	Winter
A773	*Ardea alba*	Great White Egret	Breeding	A186	*Larus hyperboreus*	Glaucous Gull	Winter
A028	*Ardea cinerea*	Grey Heron	Breeding	A187	*Larus marinus*	Great Black-backed Gull	Breeding
A028	Ardea cinerea	Grey Heron	Winter	A187	*Larus marinus*	Great Black-backed Gull	Winter
A034	*Platalea leucorodia*	Eurasian Spoonbill	Breeding	A188	*Rissa tridactyla*	Black-legged Kittiwake	Breeding
A034	Platalea leucorodia	Eurasian Spoonbill	Winter	A863	*Thalasseus sandvicensis*	Sandwich Tern	Breeding
A036	*Cygnus olor*	Mute Swan	Breeding	A863	*Thalasseus sandvicensis*	Sandwich Tern	Passage
A036	Cygnus olor	Mute Swan	Winter	A863	Thalasseus sandvicensis	Sandwich Tern	Winter
A037	*Cygnus columbianus bewickii*	Tundra Swan	Winter	A192	*Sterna dougallii*	Roseate Tern	Breeding
A038	*Cygnus cygnus*	Whooper Swan	Breeding	A193	*Sterna hirundo*	Common Tern	Breeding
A045-B	*Branta leucopsis*	Barnacle Goose	Winter	A194	*Sterna paradisaea*	Arctic Tern	Breeding
A045-X	*Branta leucopsis*	Barnacle Goose	Breeding	A885	*Sternula albifrons*	Little Tern	Breeding
A045-X	*Branta leucopsis*	Barnacle Goose	Winter	A887	*Uria aalge*	Common Guillemot	Breeding
A675	*Branta Bernicla Bernicla*	Brent Goose	Winter	A200	*Alca torda*	Razorbill	Breeding
A674-A	*Branta Bernicla hrota*	Brent Goose	Winter	A202	*Cepphus grylle*	Black Guillemot	Breeding
A674-B	*Branta Bernicla hrota*	Brent Goose	Winter	A203	*Alle alle*	Little Auk	Winter
A748-X	*Alopochen aegyptiaca*	Egyptian Goose	Breeding	A204	*Fratercula arctica*	Atlantic Puffin	Breeding
A748-X	*Alopochen aegyptiaca*	Egyptian Goose	Winter	A206	*Columba livia*	Rock Pigeon	Breeding
A397-X	*Tadorna ferruginea*	Ruddy Shelduck	Breeding	A206-X	*Columba livia*	Feral Pigeon	Breeding
A048	*Tadorna tadorna*	Common Shelduck	Breeding	A207	*Columba oenas*	Stock Dove	Breeding
A048	*Tadorna tadorna*	Common Shelduck	Winter	A687	*Columba palumbus palumbus*	Common Wood-pigeon	Breeding
A751-X	*Cairina moschata*	Muscovy Duck	Breeding	A209	*Streptopelia decaocto*	Eurasian Collared-dove	Breeding
A749-X	*Aix sponsa*	Wood Duck	Breeding	A210	*Streptopelia turtur*	European Turtle-dove	Breeding
A553-X	*Aix galericulata*	Mandarin Duck	Breeding	A760-X	*Psittacula krameri*	Rose-ringed Parakeet	Breeding
A855	*Mareca penelope*	Eurasian Wigeon	Winter	A212	*Cuculus canorus*	Common Cuckoo	Breeding
A855	*Mareca penelope*	Eurasian Wigeon	Breeding	A213	*Tyto alba*	Barn Owl	Breeding
A889	*Mareca strepera*	Gadwall	Winter	A215-X	*Bubo bubo*	Eagle Owl	Breeding
A889	*Mareca strepera*	Gadwall	Breeding	A218-X	*Athene noctua*	Little Owl	Breeding
A052	*Anas crecca*	Common Teal	Breeding	A219	*Strix aluco*	Tawny Owl	Breeding
A052	*Anas crecca*	Common Teal	Winter	A221	*Asio otus*	Long-eared Owl	Breeding
A053	*Anas platyrhynchos*	Mallard	Breeding	A222	*Asio flammeus*	Short-eared Owl	Breeding
A053	*Anas platyrhynchos*	Mallard	Winter	A224	*Caprimulgus europaeus*	Eurasian Nightjar	Breeding

Species code	Species scientific name	Species common name	Season	Species code	Species scientific name	Species common name	Season
A054	*Anas acuta*	Northern Pintail	Breeding	A226	*Apus apus*	Common Swift	Breeding
A054	*Anas acuta*	Northern Pintail	Winter	A229	*Alcedo atthis*	Common Kingfisher	Breeding
A856	*Spatula querquedula*	Garganey	Breeding	A233	*Jynx torquilla*	Eurasian Wryneck	Breeding
A857	*Spatula clypeata*	Northern Shoveler	Winter	A866	*Picus viridis s. str.*	Eurasian Green Woodpecker	Breeding
A857	*Spatula clypeata*	Northern Shoveler	Breeding	A658	*Dendrocopos major all others*	Great Spotted Woodpecker	Breeding
A058-X	*Netta rufina*	Red-crested Pochard	Breeding	A869	*Dryobates minor*	Lesser Spotted Woodpecker	Breeding
A058-X	*Netta rufina*	Red-crested Pochard	Winter	A246	*Lullula arborea*	Wood Lark	Breeding
A059	*Aythya ferina*	Common Pochard	Winter	A247	*Alauda arvensis*	Eurasian Skylark	Breeding
A059	*Aythya ferina*	Common Pochard	Breeding	A249	*Riparia riparia*	Sand Martin	Breeding
A061	*Aythya fuligula*	Tufted Duck	Breeding	A251	*Hirundo rustica*	Barn Swallow	Breeding
A061	*Aythya fuligula*	Tufted Duck	Winter	A738	*Delichon urbicum*	Northern House-martin	Breeding
A062	*Aythya marila*	Greater Scaup	Breeding	A256	*Anthus trivialis*	Tree Pipit	Breeding
A062	*Aythya marila*	Greater Scaup	Winter	A257	*Anthus pratensis*	Meadow Pipit	Breeding
A063	*Somateria mollissima*	Common Eider	Winter	A666	*Anthus petrosus*	Rock Pipit	Breeding
A063	*Somateria mollissima*	Common Eider	Breeding	A260	*Motacilla flava*	Yellow Wagtail	Breeding
A064	*Clangula hyemalis*	Long-tailed Duck	Winter	A261	*Motacilla cinerea*	Grey Wagtail	Breeding
A900	*Melanitta nigra s. str.*	Common Scoter	Winter	A262	*Motacilla alba*	White Wagtail	Breeding
A900	*Melanitta nigra s. str.*	Common Scoter	Breeding	A264	*Cinclus cinclus*	White-throated Dipper	Breeding
A066	*Melanitta fusca*	Velvet Scoter	Winter	-	*Troglodytes troglodytes fridariensis*	Winter Wren	Breeding
A067	*Bucephala clangula*	Common Goldeneye	Winter	-	*Troglodytes troglodytes hirtensis*	Winter Wren	Breeding
A067	*Bucephala clangula*	Common Goldeneye	Breeding	A676	*Troglodytes troglodytes all others*	Winter Wren	Breeding
A767	*Mergellus albellus*	Smew	Winter	A266	*Prunella modularis*	Hedge Accentor	Breeding
A069	*Mergus serrator*	Red-breasted Merganser	Breeding	A269	*Erithacus rubecula*	European Robin	Breeding
A069	*Mergus serrator*	Red-breasted Merganser	Winter	A271	*Luscinia megarhynchos*	Common Nightingale	Breeding
A070	*Mergus merganser*	Common Merganser	Winter	A273	*Phoenicurus ochruros*	Black Redstart	Breeding
A070	*Mergus merganser*	Common Merganser	Breeding	A274	*Phoenicurus phoenicurus*	Common Redstart	Breeding
A750-X	*Oxyura jamaicensis*	Ruddy Duck	Breeding	A275	*Saxicola rubetra*	Whinchat	Breeding
A750-X	*Oxyura jamaicensis*	Ruddy Duck	Winter	A276	*Saxicola torquatus*	Common Stonechat	Breeding
A072	*Pernis apivorus*	European Honey-buzzard	Breeding	A277	*Oenanthe oenanthe*	Northern Wheatear	Breeding
A074	*Milvus milvus*	Red Kite	Breeding	A282	*Turdus torquatus*	Ring Ouzel	Breeding
A075	*Haliaeetus albicilla*	White-tailed Eagle	Breeding	A283	*Turdus merula*	Eurasian Blackbird	Breeding
A081	*Circus aeruginosus*	Western Marsh-harrier	Breeding	A284	*Turdus pilaris*	Fieldfare	Breeding
A082	*Circus cyaneus*	Hen Harrier	Breeding	A285	*Turdus philomelos*	Song Thrush	Breeding
A082	*Circus cyaneus*	Hen Harrier	Winter	A286	*Turdus iliacus*	Redwing	Breeding
A084	*Circus pygargus*	Montagu's Harrier	Breeding	A287	*Turdus viscivorus*	Mistle Thrush	Breeding

Species code	Species scientific name	Species common name	Season	Species code	Species scientific name	Species common name	Season
A899	*Accipiter gentilis all others*	Northern Goshawk	Breeding	A288	*Cettia cetti*	Cetti's Warbler	Breeding
A898	*Accipiter nisus all others*	Eurasian Sparrowhawk	Breeding	A290	*Locustella naevia*	Common Grasshopper-warbler	Breeding
A847-X	*Parabuteo unicinctus*	Harris's Hawk	Breeding	A292	*Locustella luscinioides*	Savi's Warbler	Breeding
A846-X	*Buteo jamaicensis*	Red-tailed Hawk	Breeding	A294	*Acrocephalus paludicola*	Aquatic Warbler	Passage
A087	*Buteo buteo*	Common Buzzard	Breeding	A295	*Acrocephalus schoenobaenus*	Sedge Warbler	Breeding
A091	*Aquila chrysaetos*	Golden Eagle	Breeding	A296	*Acrocephalus palustris*	Marsh Warbler	Breeding
A094	*Pandion haliaetus*	Osprey	Breeding	A297	*Acrocephalus scirpaceus*	Eurasian Reed-warbler	Breeding
A096	*Falco tinnunculus*	Common Kestrel	Breeding	AB09	*Curruca undata*	Dartford Warbler	Breeding
A098	*Falco columbarius*	Merlin	Breeding	AB21	*Curruca curruca*	Lesser Whitethroat	Breeding
A098	*Falco columbarius*	Merlin	Winter	AB14	*Curruca communis*	Common Whitethroat	Breeding
A099	*Falco subbuteo*	Eurasian Hobby	Breeding	A310	*Sylvia borin*	Garden Warbler	Breeding
A103	*Falco peregrinus*	Peregrine Falcon	Breeding	A311	*Sylvia atricapilla*	Blackcap	Breeding
A463	*Lagopus lagopus hiBernica*	Willow Ptarmigan	Breeding	A314	*Phylloscopus sibilatrix*	Wood Warbler	Breeding
-	*Lagopus lagopus scotica*	Willow Ptarmigan	Breeding	A572	*Phylloscopus collybita s. str.*	Common Chiffchaff	Breeding
A891	*Lagopus muta all others*	Rock Ptarmigan	Breeding	A316	*Phylloscopus trochilus*	Willow Warbler	Breeding
-	*Lyrurus tetrix britannicus*	Black Grouse	Breeding	A317	*Regulus regulus*	Goldcrest	Breeding
A659	*Tetrao urogallus all others*	Western Capercaillie	Breeding	A318	*Regulus ignicapilla*	Firecrest	Breeding
A110-X	*Alectoris rufa*	Red-legged Partridge	Breeding	A319	*Muscicapa striata*	Spotted Flycatcher	Breeding
A644	*Perdix perdix all others*	Grey Partridge	Breeding	A322	*Ficedula hypoleuca*	European Pied Flycatcher	Breeding
A113	*Coturnix coturnix*	Common Quail	Breeding	A323	*Panurus biarmicus*	Bearded Parrotbill	Breeding
A558-X	*Syrmaticus reevesii*	Reeves's Pheasant	Breeding	A324	*Aegithalos caudatus*	Long-tailed Tit	Breeding
A115-X	*Phasianus colchicus*	Common Pheasant	Breeding	A493	*Poecile palustris*	Marsh Tit	Breeding
A557-X	*Chrysolophus pictus*	Golden Pheasant	Breeding	A492	*Poecile montanus*	Willow Tit	Breeding
A755-X	*Chrysolophus amherstiae*	Lady Amherst's Pheasant	Breeding	A497	*Lophophanes cristatus*	Crested Tit	Breeding
A757-X	*Numida meleagris*	Helmeted Guineafowl	Breeding	A472	*Periparus ater all others*	Coal Tit	Breeding
A460-X	*Meleagris gallopavo*	Wild Turkey	Breeding	A483	*Cyanistes caeruleus s. str.*	Blue Tit	Breeding
A118	*Rallus aquaticus*	Water Rail	Breeding	A330	*Parus major*	Great Tit	Breeding
A119	*Porzana porzana*	Spotted Crake	Breeding	A332	*Sitta europaea*	Wood Nuthatch	Breeding
A122	*Crex crex*	Corncrake	Breeding	A334	*Certhia familiaris*	Eurasian Treecreeper	Breeding
A123	*Gallinula chloropus*	Common Moorhen	Breeding	A337	*Oriolus oriolus*	Eurasian Golden Oriole	Breeding
A123	*Gallinula chloropus*	Common Moorhen	Winter	A338	*Lanius collurio*	Red-backed Shrike	Breeding
A125	*Fulica atra*	Common Coot	Winter	A342	*Garrulus glandarius*	Eurasian Jay	Breeding
A125	*Fulica atra*	Common Coot	Breeding	A343	*Pica pica*	Black-billed Magpie	Breeding
A127	*Grus grus*	Common Crane	Breeding	A346	*Pyrrhocorax pyrrhocorax*	Red-billed Chough	Breeding
A127	*Grus grus*	Common Crane	Winter	A346	*Pyrrhocorax pyrrhocorax*	Red-billed Chough	Winter

Species code	Species scientific name	Species common name	Season	Species code	Species scientific name	Species common name	Season
A129	*Otis tarda*	Great Bustard	Breeding	A347	*Corvus monedula*	Eurasian Jackdaw	Breeding
A130	*Haematopus ostralegus*	Eurasian Oystercatcher	Winter	A348	*Corvus frugilegus*	Rook	Breeding
A130	*Haematopus ostralegus*	Eurasian Oystercatcher	Breeding	A349	*Corvus corone*	Carrion Crow	Breeding
A131	*Himantopus himantopus*	Black-winged Stilt	Breeding	A350	*Corvus corax*	Common Raven	Breeding
A132	*Recurvirostra avosetta*	Pied Avocet	Breeding	A351	*Sturnus vulgaris*	Common Starling	Breeding
A132	*Recurvirostra avosetta*	Pied Avocet	Winter	A620	*Passer domesticus s. str.*	House Sparrow	Breeding
A133	*Burhinus oedicnemus*	Eurasian Thick-knee	Breeding	A356	*Passer montanus*	Eurasian Tree Sparrow	Breeding
A136	*Charadrius dubius*	Little Ringed Plover	Breeding	A657	*Fringilla coelebs all others*	Eurasian Chaffinch	Breeding
A137	*Charadrius hiaticula*	Common Ringed Plover	Winter	A360	*Fringilla montifringilla*	Brambling	Breeding
A137	*Charadrius hiaticula*	Common Ringed Plover	Breeding	A363	*Chloris chloris*	European Greenfinch	Breeding
A727	*Eudromias morinellus*	Eurasian Dotterel	Breeding	A364	*Carduelis carduelis*	European Goldfinch	Breeding
A140	*Pluvialis apricaria*	Eurasian Golden Plover	Winter	A478	*Spinus spinus*	Eurasian Siskin	Breeding
A140	*Pluvialis apricaria*	Eurasian Golden Plover	Breeding	A476	*Linaria cannabina*	Eurasian Linnet	Breeding
A141	*Pluvialis squatarola*	Grey Plover	Winter	A477	*Linaria flavirostris*	Twite	Breeding
A142	*Vanellus vanellus*	Northern Lapwing	Breeding	A474	*Acanthis flammea*	Common Redpoll	Breeding
A142	*Vanellus vanellus*	Northern Lapwing	Winter	A369	*Loxia curvirostra*	Red Crossbill	Breeding
A143	*Calidris canutus*	Red Knot	Winter	-	*Loxia scotica*	Scottish Crossbill	Breeding
A144	*Calidris alba*	Sanderling	Winter	A370	*Loxia pytyopsittacus*	Parrot Crossbill	Breeding
A146	*Calidris temminckii*	Temminck's Stint	Breeding	A372	*Pyrrhula pyrrhula*	Eurasian Bullfinch	Breeding
A148	*Calidris maritima*	Purple Sandpiper	Breeding	A373	*Coccothraustes coccothraustes*	Hawfinch	Breeding
A148	*Calidris maritima*	Purple Sandpiper	Winter	A375	*Plectrophenax nivalis*	Snow Bunting	Breeding
A149	*Calidris alpina*	Dunlin	Winter	A376	*Emberiza citrinella*	Yellowhammer	Breeding
A466-A	*Calidris alpina schinzii*	Dunlin	Breeding	A377	*Emberiza cirlus*	Cirl Bunting	Breeding
A861	*Calidris pugnax*	Ruff	Winter	A381	*Emberiza schoeniclus*	Reed Bunting	Breeding
A861	*Calidris pugnax*	Ruff	Breeding	A383	*Emberiza calandra*	Corn Bunting	Breeding
A152	*Lymnocryptes minimus*	Jack Snipe	Winter	A761-X	*Myiopsitta monachus*	Monk Parakeet	Breeding
A153	*Gallinago gallinago*	Common Snipe	Winter	A747-X	*Cygnus atratus*	Black Swan	Breeding
A153	*Gallinago gallinago*	Common Snipe	Breeding	A756-X	*Pavo cristatus*	Indian Peafowl	Breeding
A155	*Scolopax rusticola*	Eurasian Woodcock	Breeding	A848-X	*Agapornis roseicollis*	Rosy-faced Lovebird	Breeding
A155	*Scolopax rusticola*	Eurasian Woodcock	Winter				

Appendix 5: Maerl Approach for 2019–2024 Habitats Regulations Reporting

Appendix 5 details the approach to reporting Maerl in the 2019–2024 Habitats Regulations reporting.

Background

Maerl is a habitat-forming coralline algae and can form extensive calcareous beds of unattached algae that are an important and unique habitat for a diverse range of marine organisms (Hall-Spencer & Moore, 2000). Under Habitats Regulations 9A reporting and the former Habitats Directive Article 17 reporting, there is a requirement that reporting must be completed on two species of maerl (S1376 - *Lithothamnion corallioides* and S1377 - *Phymatolithon calcareum*). However genetic testing suggests there are at least four species of maerl in UK waters and these species are very difficult to tell apart without expert examination using a microscope or through genetic testing (Perry and Tyler-Walters, 2018).

Under the current round of Habitats Regulations reporting (2019–2024), the two species of maerl will be reported as a single habitat – “Maerl Beds”. This document details the rationale and methods underlying this approach.

The fourth UK Habitats Directive Report (Article 17 2019) approach

During the 2019 Article 17 UK Habitats Directive reporting, maerl was reported as a species. This meant that *Lithothamnion corallioides* and *Phymatolithon calcareum* were reported separately, however, identical reports were submitted for both species (JNCC, 2019a. JNCC, 2019b). This was due to previous identification of maerl species in surveys being considered unreliable, meaning that, as the two species of maerl could not be distinguished, they could not be considered separately. Records used for the UK assessment spanned from 1995–2017.

Range in km^2 was calculated using 10 km x 10 km grid squares containing maerl species records. The population size parameter was calculated using 1 km x 1 km grid squares. This included single point records. A lack of definition of habitat suitable for the species hindered assessment of the parameter “Habitat for the Species” and differed by country. FRVs were unknown (JNCC, 2019c).

Rationale for assessing as a habitat

Due to the difficulties involved in identifying maerl to species-level in-situ a combined assessment is more appropriate than reporting on singular species. Furthermore, maerl are important habitat-forming species capable of forming extensive beds. Reporting maerl beds as a habitat therefore ensures a more accurate and appropriate method for reporting.

Maerl bed reporting under Habitats Regulations (2019–2024)

Currently, there is no universal definition of a maerl bed and each nation adheres to their own definitions. For Scotland, their definition is incorporated into the habitat's legal status as a Priority Marine Feature (Tyler-Walters *et al.* 2016). Natural England has been working on updating their own definition to fill gaps identified during casework (Axelsson, 2023).

For reporting as a habitat, only maerl beds were considered during this Habitats Regulations reporting round. In the absence of a universally agreed definition of maerl beds, the below definition (Table A5A) was used as guidance and as a basis for reporting under Habitats Regulations during the current reporting round. These guidelines may have been adapted depending upon specific country requirements. Single point records were excluded unless they fit the definition of a maerl bed.

Table A5A. The parameters used to define maerl beds in the 2019–2024 Habitat Regulations Reporting.

Parameter	Definition
Physical size	25 m^2 (5 m by 5 m)
Structure	Patch or continuous
2D/3D definition	A three-dimensional (3D) maerl bed structure is a maerl habitat with length, width and depth comprising a minimum of a double-layer (vertically) of maerl, resulting in laterally and vertically connected repeat units of maerl thalli (each unit ≥1 cm thickness).
Live/dead maerl	≥10% dead maerl over a qualifying area and any proportion of live maerl as this could be considered a degraded but recoverable maerl habitat.

It is expected that for future reporting rounds, a universal definition will be adopted by all nations, however this will require further discussion.

By reporting as a habitat instead of a species, "Population" and "Habitat for the Species" will no longer be reported, instead the equivalent "Area" and "Structure and functions" parameters will be reported respectively.

"Area" was reported as the actual area in km^2 from all records. The 1 km x 1 km grid squares used to report Population were not used.

From habitat records, the 10 km x 10 km grid squares were used to create the range and distribution maps, from which the "Range" parameter was calculated in km^2.

The approach to assessing Structure and Function was not formalised, although it is understood each country considered similar information to inform assessment. This will include using percentage of live maerl, endemic taxa tagged to maerl beds, and assessments of diversity of the associated macrofauna, epibiota and infauna.

Appendix 6: Technical Note on Mapping

Appendix 6 details the approach to mapping taken in the 2019–2024 Habitats Regulations Reporting.

A: Overview of Mapping approaches

The concepts and definition of range and distribution used in this reporting follows the Bern approach, and further detail can be found in the Bern guidance.

Summary of Approaches

Table A6A. Summary of the approaches taken to feature mapping for terrestrial features, marine habitats, and marine species (mammals and turtles).

Stage	Stage detail	Feature approach for		
		Terrestrial features	**Marine Habitats**	**Marine mammals and turtles**
1	JNCC collected and QA'd required information for feature mapping	1) JNCC provided CNCBs with a) Mapping guidance b) Blank mapping reporting pro-formas 2) CNCBs completed the above and returned to JNCC	1) JNCC provided CNCBs with mapping guidance for providing marine habitat spatial data 2) CNCBs (for inshore areas) and JNCC (for offshore area): a) Collated and formatted spatial data on the extent and distribution of the habitats, for their respective areas of statutory responsibility b) Sent to JNCC for quality control (as shapefiles)	1) JNCC collated and formatted spatial data on the extent and distribution through an open data call. 2) JNCC completed mapping pro-forma for marine mammals and turtles

			3) JNCC checked the data and CNCBs made corrections if necessary, before returning the corrected data to JNCC	
2	JNCC calculated required information for reporting and produced feature maps	1) JNCC calculated range figures for each feature using the range mapping tool (Sections B and C) 2) JNCC created distribution maps for each feature	For each country and each habitat JNCC a) Created the Distribution Database, Gridded Distribution Dataset and Distribution Map b) Where different to the Distribution counterpart, created the Range Dataset, Gridded Range Dataset, and Range Map	JNCC calculated range figures for marine mammal and turtle features JNCC created distribution maps for marine mammal and turtle features
3	JNCC sent CNCBs required information for reporting and maps	3) JNCC sent range figures and distribution maps to CNCBs	JNCC sent all datasets (above) and maps to CNCBs	4) JNCC sent range figures and distribution maps the Interagency Marine Mammal Working Group (IAMMWG) for review. 5) JNCC finalised range figures and distribution maps and sent to CNCBs.
4	CNCBs incorporated information into their reporting pro-formas and reports	6) CNCBs integrated range figures into feature reporting pro-formas	For each habitat a. CNCBs calculated Surface Area (5.1) for their respective country (combined inshore and offshore)	6) CNCBs included marine mammal and turtle assessments in their reports

			b. JNCC calculated Range Surface Area (4.1) for each country	

Mapping pro-forma detail

For all terrestrial features and marine species, mapping data was gathered via the Mapping reporting pro-formas. The fields in these proformas were:

- UK country (England/ Scotland/ Wales/ Northern Ireland - completed by JNCC)
- Habitat/ Species code
- Habitat/ Species name
- Grid square code
    - *All terrestrial features:* 10 x 10 km grid cells based on:
        - British National Grid (OSGB36) for Great British terrestrial areas
        - Irish National Grid (TM65) for Northern Irish terrestrial areas
    - *Marine mammals and turtles*: 50x50 km grid cells based on EEA Reference grid (ETRS89_LAEA5210)
- Start Year and End Year for when the survey(s) was/were conducted to produce the distribution information.
    - if the information was collected within a single year, please put the same year in both fields.
- Source organisation(s) to which the data is attributed.
- Licence restrictions (if any apply)

All personal data was removed from the file before sending. Files could be sent as a csv file for each feature separately, or multiple features combined into one file (preferred option). For both terrestrial habitats and species, spatial data was analysed using the alpha range mapping tool (see Section B).

Further detail on Marine Habitats approach

Following agreement on data formats and procedures, JNCC provided CNCBs with guidance on data formats and projections to use for their data collation exercise.

Each CNCB was responsible for compiling a comprehensive dataset on the extent and distribution of the habitats in inshore country waters from all available sources. The exception to this on this occasion, was inshore Scotland, which NatureScot and JNCC collaborated on.

Following data submission from CNCBs, JNCC checked the data to ensure:

1. Standard attribute tables,
2. Standard projection: ETRS89-Lambert Azimuthal Equal Area (LAEA) also known as EPSG:3035,
3. Valid geometries,
4. No overlaps.

CNCBs made corrections, if necessary and returned the data to JNCC for aggregation and preparation of the data for maps and area calculation.

B: Distribution Maps and Surface Area Calculation

JNCC produced static distribution maps for each feature in each country. These were produced as outlined in the sections below, and were shared as a PNG file maps for visual display.

Habitats

The data fields used to gather information for this section can be found in table A6B.

Table A6B. Habitats data collection fields for Section B as listed in the UK Guidance (Habitats), and the documents that should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ Required field	Approach to completing field	
			See Bern Guidance	See Approach doc
2. Maps	2.1: Distribution map Year or period	Required	✓	×
	2.2: Distribution map	Required	×	✓
	2.3: Distribution map Method used	Required	✓	×
	2.4: Additional information	Optional	✓	×

Terrestrial

Distribution maps were created to show the occurrence of habitats or species at a 10 km^2 scale. For terrestrial and inshore areas, these were based on the British National Grid (OSGB36) (England, Scotland, Wales) and Irish National Grid (TM65) (Northern Ireland) projections. For each feature, CNCBs provided JNCC with a spreadsheet summarising: the 10 km^2 data, the date range of data sourced, licencing restrictions, and data sources for the mapping.

Marine

Following QC and corrections, JNCC used the data compiled by CNCBs and JNCC, to prepare the data and maps related to Habitat Distribution:

Create the Distribution Datasets

For each country, this was a combination of the inshore and offshore point, line and/or polygon data for each habitat, to be used as the data source for the Gridded Distribution Dataset and the calculation of Surface Area (5.1) for the relevant country.

Mapping was created to country boundary at an inshore scale, offshore scale, and combined inshore/offshore per country, allowing each country to use the relevant information appropriately depending on their reporting preferences.

For UK offshore reporting, point, line, and/or polygon data for each habitat, was used as the data source for the Gridded Distribution Dataset and the calculation of Surface Area (5.1).

Create the Gridded Distribution Datasets

A country-specific Gridded Distribution Dataset was created for each habitat by intersecting the Distribution Dataset with a modified EEA 10x10 km reference grid, which was cut along territorial sea boundaries, resulting in some partial squares. This allowed for a partial square where a habitat was present on one side of a national boundary and not on the other.

Additionally, a UK Gridded Distribution Dataset was created for each habitat that used the standard EEA 10x10 km reference grid, to be used for the UK report maps.

Create the Distribution Maps

For each habitat, in each country, this was the image of the Gridded Distribution Dataset alongside a coastline and maritime administrative boundaries, projected to ETRS89-LAEA.

A combined UK Distribution Map was also created for each habitat, which used the standard 10x10 km reference grid.

Calculate Surface Area (5.1)

Finally, the spatial data was then sent to CNCBs for onward analysis. For each habitat, the Surface Area was calculated as the sum of the area of the polygons in the Distribution Dataset.

Species

The data fields used to gather information for this section can be found in table A6C.

Table A6C. Species data collection fields for Section B as listed in the UK Guidance (Species), and the documents that should be referred for further information on the approach taken to completing these fields.

Section	UK reporting field (as in UK guidance)	Optional/ required	Approach to completing field	
			See Bern Guidance	See Approach doc
2. Maps	2.1: Sensitive species	Required	✓	×
	2.2: Distribution map Year or Period	Required	✓	×
	2.3: Distribution map	Required	×	✓
	2.4: Distribution map Method used	Required	✓	×
	2.5: Distribution map Additional information	Optional	✓	×

Terrestrial

Distribution maps were created to show to occurrence of species at a 10 km^2 scale. For terrestrial and inshore areas, these were based on the British National Grid (OSGB36) and Irish National Grid (TM65) projections. For each feature, CNCBs provided JNCC with a spreadsheet summarising: the 10 km^2 data, the date range of data sourced, licencing restrictions, and data sources. JNCC then produced the PNG file maps for visual display.

B.2.2 Marine mammals and turtles

Marine mammal and turtle range and distribution has been mapped on a 50 km^2 grid. This follows the approach taken for previous Article 17 reporting and reflects the highly mobile nature of marine mammals and turtles, which makes mapping on a larger grid more appropriate. Unlike previous reporting, data for mapping range and distribution came from multiple sources through an open data call for any relevant marine mammal sightings data between 2019 and 2024.

C: Range Maps and Surface Area Calculation

Habitats

See table 4 for detail on Habitat Range fields. This section relates to calculating the value for field 5.1 (Range) Surface area.

Terrestrial habitats

Range surface area for terrestrial habitats was calculated using: (i) the 10 km^2 distribution data (see above), (ii) a range mapping tool, and (iii) range surface area clipped to UK coastline for terrestrial habitats. The range mapping tool generated a set of 'best-fitting' polygons around each grouping of 10 km squares. The range polygons were then clipped to the country boundary, and terrestrial habitats were clipped along the coastline to exclude areas of sea. A specific clipping was applied to coastal habitats (H1210 to H2250, excluding H1340) to exclude any areas more than 10 km inland from the coastline. The range surface area was based on the total area enclosed by these polygons

The range surface area calculations are highly dependent on the quality of the distribution data and the modelling method used. To compensate for these 'gaps', an adjustable 'gap distance' parameter of 'alpha' was used to determine how tightly the polygons are fitted. An Alpha was set at 25 km for all terrestrial habitats, meaning that gaps of over 50 km in the distribution were required to create separate polygons This was the same gap distance and scales used in previous reporting rounds, and allowed direct comparison between reports. The range tool output all range polygons in British National Grid projection. For Northern Ireland, these unclipped polygons were then transformed to Irish National Grid projection, before being clipped to country boundary.

Base maps used for country and coastline boundaries

- For country range maps: The UK coastline boundary is derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source) layer under Open Government Licence v3 (OGL), with attribution: Contains data © 2017 Oil & Gas Authority. The base map contains the four UK countries as multi-polygons, as well as Ireland and Isle of Man. This boundary is used to create both the UK and country distribution and range maps.

Marine habitats

The Alpha-Shape range tool used for terrestrial habitats does not work for marine features, as the 10x10 km grids (based off OSGB36) used to calculate range technically do not extend beyond the coastline. Therefore, marine features were assessed using an alternative approach to that used for terrestrial features.

For each country, and each habitat, JNCC prepared the data and maps related to Habitat Range:

Create the Range Dataset

The Range Dataset for each habitat refers to data source for the Gridded Range Dataset and the calculation of Range Surface Area (4.1). For all except three marine habitats, this was identical to the Distribution Dataset. For the other three habitats, JNCC prepared additional polygon data to supplement the Distribution Dataset to create a Range Dataset that was more likely to capture all areas that could be included in the wider definition of 'range' for that habitat. See the 'Approach to creating the Range Dataset' column in Table C for details.

Create the Gridded Range Dataset

A country-specific Gridded Range Dataset was created for each habitat by intersecting the Range Dataset with the modified EEA 10x10 km reference grid, the was cut along territorial sea boundaries (see B.2.2).

Additionally, a UK Gridded Range Dataset was created for each habitat that used the standard EEA 10x10 km reference grid, to be used for the UK report maps.

Create the Range Map

For each habitat, in each country, this was the image of the Gridded Range Dataset alongside a coastline and maritime administrative boundaries, projected to ETRS89-LAEA.

A combined UK Range Map was also created for each habitat, which used the standard 10 x 10 km reference grid.

Calculate Range Surface Area (4.1)

Finally, the spatial data was then sent to CNCBs for onward analysis. For all except two habitats, the Range Surface Area was calculated as the sum of the area of the polygons in the Range Dataset. The exceptions were H8330 Submerged or partially submerged sea caves and the new Maerl beds habitat, which used the Gridded Range Dataset – see Table A6D for details.

Table A6D. Detail on approach to mapping and calculating marine habitat range for this reporting round.

Habitat Name	Habitat code	Approach to creating the Range Dataset	Approach to calculating Range Surface Area (4.1)
Sandbanks which are slightly covered by seawater all the time	H1110	Distribution Dataset, supplemented by additional areas of sandy sediment down to 60m that were connected to polygons from the Distribution Dataset. This method was the same as the previous reporting round. However, an updated sandy sediment layer was used	Sum of the area of polygons in the Range Dataset

		as an input, resulting in a different output. Sandy sediment was extracted from the BGS (2025) UK predictive seabed sediment model output.	
Estuaries	H1130	Same as Distribution Dataset	Sum of the area of polygons in the Range Dataset (which is the same as the Distribution Dataset; therefore Range Surface Area (4.1) = Surface Area (5.1))
Mudflats and sandflats not covered by seawater at low tide	H1140		
Coastal lagoons	H1150		
Large shallow inlets and bays	H1160		
Submarine structures made by leaking gases	H1180	Distribution Dataset, supplemented by additional areas where the feature may occur, which included shallow gas (gas in the sediments close to the seabed), gas seeps, and seabed features associated with gas seepage (pockmarks, mud volcanoes etc.). This dataset was not updated since the previous reporting round.	Sum of the area of polygons in the Range Dataset
Reefs	H1170	**Scotland:** Distribution Dataset, supplemented by areas of iceberg plough marks off Northwest Scotland. This was the same approach as the previous reporting round.	**Scotland**: Sum of the area of polygons in the Range Dataset
		England, Wales, Northern Ireland: same as Distribution Dataset.	**England, Wales, Northern Ireland:** Sum of the area of polygons in the Range Dataset (which is the same as the Distribution Dataset; therefore Range Surface Area (4.1) = Surface Area (5.1))

Submerged or partially submerged sea caves	H8330	Same as Distribution Dataset. This was a different approach to the previous reporting round, which included all areas of intertidal rock.	Sum of the area of the 10x10 km grid squares from the Gridded Range Dataset. This was the same approach to the previous reporting round as it accounts for the fact that the spatial extent of sea caves is largely unknown and unmapped. .
Maerl beds	S1376-S1377	Same as Distribution Dataset.	Sum of the area of the 10x10 km grid squares from the Gridded Range Dataset. This is the first time an area value has been calculated for Maerl beds.

Species

See Table 18 for detail on species Range fields. This section relates to calculating the value for field 4.1 (Range) Surface area.

Terrestrial species

Range surface area for terrestrial species was calculated using: (i) the 10 km square distribution data provided by the CNCBs; (ii) a range mapping tool, (iii) range surface area clipped to UK coastline for terrestrial species (see Box 1). The range mapping tool generated a set of ‘best-fitting’ polygons around each grouping of 10 km squares. The range polygons were then clipped to the country boundary. The range surface area was based on the total area enclosed by these polygons.

The range surface area calculations are highly dependent on the quality of the distribution data and the modelling method used. To compensate for these ‘gaps’, an adjustable ‘gap distance’ parameter of ‘alpha’ was used to determine how tightly the polygons are fitted. Alpha values varied between species (but were consistent across the countries), and values can be found in Table A6E. The gap distance and scales were the same as used in previous reporting rounds,and allowed direct comparison between reports. The range tool outputted all range polygons in British National Grid projection. For Northern Ireland, these unclipped polygons were then transformed to Irish National Grid projection, before being clipped to country boundary. Further detail on range figure calculations using an alpha value can be found in the Bern guidance.

Marine mammals and turtles

Mobile marine species were assessed by JNCC. For mobile marine species, the surface area (or envelope) enclosed the species range at a 50 km ETRS square resolution. Mapping of the range used a similar approach to similar Article 17 reporting where the range from the

previous report was compared against current information on range and the distribution of sightings for this species and only updated where appropriate. This meant that the range was based on expert opinion taking into account the distribution and frequency of records throughout UK waters and information within the published literature. Range is a difficult parameter to define for this group of species, which are highly mobile with distribution that varies considerably in time and space. However, the range area was estimated to convey the maximum extent of the range, taking into account seasonal variability. The four country conservation agencies were consulted to help assess whether an apparent change in the map was genuine or due to differences in recording effort/data availability. The long-term monitoring programme of UK seal populations, as reported on annually through the Special Committee on Seals, were used as the source of trend information for both grey and harbour seals.

Table A6E. Species Range mapping alpha hull values. Only resident species were mapped (using the AlphaShape tool) so vagrant species are not included the table below. *Bruchia vogesiaca* was not present in any 10 km grid square, so does not have a range map or alpha hull value. *Orthotrichum rogeri* was only present in one 10 km grid square so did not require an alpha hull value to generate a range map.

Code	Species scientific name	Species common name	Taxonomic group	Alpha value (km)
S6284	*Epidalea calamita*	Natterjack toad	Amphibian	20
S6981	*Pelophylax lessonae*	Pool frog	Amphibian	35
S1213	*Rana temporaria*	Common frog	Amphibian	35
S1166	*Triturus cristatus*	Great crested newt	Amphibian	34
S1034	*Hirudo medicinalis*	Medicinal leech	Annelid	20
S1092	*Austropotamobius pallipes*	White-clawed crayfish	Arthropod	25
S1044	*Coenagrion mercuriale*	Southern damselfly	Arthropod	20
S1065	*Euphydryas aurinia*	Marsh fritillary butterfly	Arthropod	20
S6199	*Euplagia quadripunctaria*	Jersey tiger moth	Arthropod	20
S4035	*Gortyna borelii lunata*	Fisher's estuarine moth	Arthropod	20
S1079	*Limoniscus violaceus*	Violet click beetle	Arthropod	20
S1083	*Lucanus cervus*	Stag beetle	Arthropod	20
S1058	*Maculinea arion*	Large blue butterfly	Arthropod	20
S1102	*Alosa alosa*	Allis shad	Fish	25
S1103	*Alosa fallax*	Twaite shad	Fish	25
S5085	*Barbus barbus*	Barbel	Fish	25
S6963	*Cobitis taenia*	Spined loach	Fish	25
S2492	*Coregonus albula*	Vendace	Fish	25
S5076	*Coregonus autumnalis pollan*	Pollan	Fish	25
S6353	*Coregonus lavaretus*	Whitefish	Fish	25
S6965	*Cottus gobio*	Bullhead	Fish	25
S1099	*Lampetra fluviatilis*	River lamprey	Fish	25
S1096	*Lampetra planeri*	Brook lamprey	Fish	25
S1095	*Petromyzon marinus*	Sea lamprey	Fish	25
S1106	*Salmo salar*	Atlantic salmon	Fish	25
S1109	*Thymallus thymallus*	Grayling	Fish	25
S1385	*Bruchia vogesiaca*	*Bruchia* moss	Lower plant	No alpha value
S1386	*Buxbaumia viridis*	Green shield-moss	Lower plant	20
S1378	*Cladonia* subgenus *Cladina*	*Cladonia* subgenus *Cladina* (subgenus of lichens)	Lower plant	20

Code	Species scientific name	Species common name	Taxonomic group	Alpha value (km)
S6216	*Hamatocaulis vernicosus*	Slender green feather- moss	Lower plant	20
S1400	*Leucobryum glaucum*	Large white-moss	Lower plant	20
S1390	*Marsupella profunda*	Western rustwort	Lower plant	50
S1387	*Orthotrichum rogeri*		Lower plant	No alpha value
S1395	*Petalophyllum ralfsii*	Petalwort	Lower plant	20
S1409	*Sphagnum* spp.	Bog-mosses	Lower plant	18
S1345	*Megaptera novaeangliae*	Humpback whale	Marine mammal	No alpha value; 50x50 km gridded distribution and range map used
S1349	*Tursiops truncatus*	Bottlenose dolphin	Marine mammal	
S1350	*Delphinus delphis*	Common dolphin	Marine mammal	
S1351	*Phocoena phocoena*	Harbour porpoise	Marine mammal	
S1364	*Halichoerus grypus*	Grey seal	Marine mammal	
S1365	*Phoca vitulina*	Common seal	Marine mammal	
S2027	*Orcinus orca*	Killer whale	Marine mammal	
S2029	*Globicephala melas*	Long-finned pilot whale	Marine mammal	
S2030	*Grampus griseus*	Risso's dolphin	Marine mammal	
S2031	*Lagenorhynchus acutus*	Atlantic white-sided dolphin	Marine mammal	
S2032	*Lagenorhynchus albirostris*	White-beaked dolphin	Marine mammal	
S2618	*Balaenoptera acutorostrata*	Minke whale	Marine mammal	
S2621	*Balaenoptera physalus*	Fin whale	Marine mammal	
S2624	*Physeter macrocephalus*	Sperm whale	Marine mammal	
S2034	*Stenella coeruleoalba*	Striped dolphin	Marine mammal	
S2625-S2035-S5034-S2038-S2037-S5033	*Ziphiidae*	Beaked whale	Marine mammal	
S4056	*Anisus vorticulus*	Little ramshorn whirlpool snail	Mollusc	20
S1026	*Helix pomatia*	Roman snail	Mollusc	20
S1029	*Margaritifera margaritifera*	Freshwater pearl mussel	Mollusc	25
S1014	*Vertigo angustior*	Narrow-mouthed whorl snail	Mollusc	20
S1015	*Vertigo genesii*	Round-mouthed whorl snail	Mollusc	20
S1013	*Vertigo geyeri*	Geyer's whorl snail	Mollusc	20
S1016	*Vertigo moulinsiana*	Desmoulin's whorl snail	Mollusc	20
S1223	*Dermochelys coriacea*	Leatherback turtle	Reptile	No alpha value; 50x50 km gridded distribution and range map used
S1283	*Coronella austriaca*	Smooth snake	Reptile	25
S1261	*Lacerta agilis*	Sand lizard	Reptile	25
S1308	*Barbastella barbastellus*	Barbastelle	Terrestrial mammal	20
S1337	*Castor fiber*	Beaver	Terrestrial mammal	20
S1327	*Eptesicus serotinus*	Serotine	Terrestrial mammal	20
S1363	*Felis silvestris*	Wildcat	Terrestrial mammal	40
S1334	*Lepus timidus*	Mountain hare	Terrestrial mammal	25
S1355	*Lutra lutra*	Otter	Terrestrial mammal	20
S1357	*Martes martes*	Pine marten	Terrestrial mammal	20
S1341	*Muscardinus avellanarius*	Common dormouse	Terrestrial mammal	20

Code	Species scientific name	Species common name	Taxonomic group	Alpha value (km)
S1358	*Mustela putorius*	Polecat	Terrestrial mammal	20
S5003	*Myotis alcathoe*	Alcathoe bat	Terrestrial mammal	20
S1323	*Myotis bechsteinii*	Bechstein's bat	Terrestrial mammal	20
S1320	*Myotis brandtii*	Brandt's bat	Terrestrial mammal	45
S1314	*Myotis daubentonii*	Daubenton's bat	Terrestrial mammal	20
S1330	*Myotis mystacinus*	Whiskered bat	Terrestrial mammal	45
S1322	*Myotis nattereri*	Natterer's bat	Terrestrial mammal	20
S1331	*Nyctalus leisleri*	Leisler's bat	Terrestrial mammal	20
S1312	*Nyctalus noctula*	Noctule	Terrestrial mammal	20
S1317	*Pipistrellus nathusii*	Nathusius' pipistrelle	Terrestrial mammal	20
S1309	*Pipistrellus pipistrellus*	Common pipistrelle	Terrestrial mammal	20
S5009	*Pipistrellus pygmaeus*	Soprano pipistrelle	Terrestrial mammal	20
S1326	*Plecotus auritus*	Brown long-eared bat	Terrestrial mammal	20
S1329	*Plecotus austriacus*	Grey long-eared bat	Terrestrial mammal	20
S1304	*Rhinolophus ferrumequinum*	Greater horseshoe bat	Terrestrial mammal	20
S1303	*Rhinolophus hipposideros*	Lesser horseshoe bat	Terrestrial mammal	20
S1614	*Apium repens*	Creeping marshwort	Vascular plant	20
S1902	*Cypripedium calceolus*	Lady's-slipper orchid	Vascular plant	20
S1654	*Gentianella anglica*	Early gentian	Vascular plant	20
S1903	*Liparis loeselii*	Fen orchid	Vascular plant	20
S1831	*Luronium natans*	Floating water-plantain	Vascular plant	20
S1413	*Lycopodium* spp.	Clubmosses	Vascular plant	20
S1833	*Najas flexilis*	Slender naiad	Vascular plant	20
S1441	*Rumex rupestris*	Shore dock	Vascular plant	20
S1849	*Ruscus aculeatus*	Butcher's broom	Vascular plant	20
S1528	*Saxifraga hirculus*	Marsh saxifrage	Vascular plant	20
S6985	*Vandenboschia speciosa*	Killarney fern	Vascular plant	20

Appendix 7: Nitrogen Critical Load Exceedance in Terrestrial Habitats

Appendix 7 details the approach taken to assessing Nitrogen Critical Load Exceedance in terrestrial habitats in the 2019–2024 Habitat Regulations reporting.

Introduction

Exceedance of Nutrient Nitrogen Critical Loads (N CL) can have damaging impacts on the condition of a wide range of terrestrial habitat types (Emmett *et al.,* 2011). To take account of this, N CL exceedance was systematically considered in a number of the Article 9A/3Z terrestrial habitat reports (Table A7A).

Methodology

The habitats included were those known to be sensitive to N deposition, and which had a good equivalence to a European Nature Information System (EUNIS) habitat type that already had an assigned N CL. Additionally, countries have included, at their discretion, additional habitats where broader habitat type or proxy habitat N CL data was available, as detailed below:

England

England's methodology for assessing the impact of nitrogen deposition was developed in collaboration with JNCC, other SNCBs, and Natural England Data Services. It compared modelled nitrogen deposition data with established critical loads and examined the area of exceedance. Annex 1 habitat inside SACs were chosen to reflect the methodology used for the range and area calculations in the rest of the FCS assessment process.

JNCC proposed critical loads for 45 Annex I habitats – 40 of which are present in England. These "cross-referenced" directly from the EUNIS codes (to which critical loads are originally assigned), as presented in Bobbink *et al.*, 2022. A further 32 habitat types were not allocated a critical load by JNCC. Of these, 13 were present in England and considered to be sensitive to nitrogen deposition but had no critical load assigned in the Bobbink review. This was likely because these Annex 1 habitats did not directly map to a single EUNIS code or covered several EUNIS codes across Europe. Whilst acknowledging uncertainties, it was considered inappropriate to exclude these 13 habitats from the assessment. Therefore "proxy" critical loads for these Annex 1 habitats were identified by habitat and air quality specialists in the SNCBs using critical loads outlined in the UK Air Pollution Information System (APIS - Bealey *et al.*, 2003). As the proxy habitats in some cases differed between countries, JNCC did not consider all these proxy habitats had sufficient national evidence to apply in UK-level reporting. However, JNCC agreed that this approach could be used in country level reporting, as the decisions were made in collaboration with country habitat specialists, reflecting slight differences in the ecological structure of the Annex 1 habitat within protected sites in each country.

Critical loads are expressed as a range, representing variation in sensitivity within the habitat and uncertainty in ecosystem responses (Bobbink *et al.* 2022). In the UK it is considered most appropriate to apply the lower end of the critical load range for all habitats, unless there

is local evidence suggesting otherwise (Rowe & Hina 2023). Such local modifying factors are not appropriate to apply nationally and therefore were not applied in this assessment.

The Concentration Based Estimated Deposition (CBED) model (Environmental Information Data Centre, 2025) for nitrogen deposition was used to provide background levels across England in 1 km x 1 km grid squares. Deposition values for 'moorland' (short vegetation) were applied to all non-woodland Annex 1 habitats (e.g. bogs, heaths, semi-natural grasslands), and deposition values for the forest land cover type were applied to all woodland Annex 1 habitats. Grid average deposition values were applied to one habitat (coastal lagoons) reflecting the lower rate of deposition onto water compared to terrestrial habitats (estimated at 63 % of the deposition rate onto moorland – APIS 2025).

SAC boundaries of Annex 1 habitat types developed for the FCS reporting were overlaid onto the grid of N deposition values. Natural England developed a model in ArcGIS to calculate the area within each SAC boundary with a nitrogen deposition value assigned, and the percentage of that area at or above the relevant critical load. The following points should be noted regarding Natural England's modelling approach.

- The CBED model does not provide deposition values for the entire boundary of the UK. For example, the model does not calculate deposition where more than half the grid square is water. Therefore, some designated areas do not have nitrogen deposition values across the whole site, especially marine and coastal sites.
- The extent of habitats within sites are not recorded. It is therefore assumed that each Annex 1 habitat is present across the site's full area.
- The nitrogen deposition across the area of a 1 km grid square is assumed to be the modelled nitrogen load at the centre point of that grid square.
- The percentage of each Annex 1 habitat above the critical load is as a percentage of the SAC area for which nitrogen deposition data is available , rather than the full SAC area.
- The coordinate reference system being used for this analysis is British National Grid.

The assessment calculated the percentage area of each Annex 1 habitat type in exceedance of its critical load and was used in assessments of pressures, structure and functions and future prospects.

Northern Ireland

Feature specific Critical Loads used in the analysis were sourced from a list provided by JNCC. Where a feature was not on the list, the Air Pollution Information System (APIS) was referred to and the relevant Critical Load was applied. This approach identified some rocky habitats (H8110, H8120, H8210 H8220, H8240) and freshwater habitats (H3160) that NI consider to be sensitive at a country level over and above those that JNCC consider to be sensitive at a UK level. The NI reports consider the impacts of nitrogen deposition on these features at a country level, whilst at a UK level the impact is not considered.

Where a habitat is not sensitive or has no established Critical Load, assessment was not undertaken.

Critical Load calculations were based on the habitat extent knowledge mainly within the SAC network, but also within the wider countryside where known. Calculations were based on three options depending on the available data:

Option 1: The mapped location of the habitat within SACs was considered for this approach. Annex I habitat maps were overlaid with the CBED 1 km x 1 km 2022-22 deposition data. Where a feature was not fully exceeded, it was referred to GIS specialists to assess what area of the feature exceeded critical loads.

Option 2: Mapping data was overlaid with the CBED 1 km x 1 km 2020-22 deposition data to assess what area of each feature exceeded critical loads. For this option, the results represent an assessment of the full extent of the habitat in NI, i.e. within SACs plus the wider countryside. There were few habitats where this method was possible, but it was chosen where possible as the best available data for reporting on the feature.

Option 3: This method follows the assumption that each feature falls across the entire area of the SAC. Exceedance was calculated using average deposition values from APIS. This option was used where Options 1 and 2 were not possible due to Annex I habitat mapping not being completed or the CBED 1 km x 1 km dataset not extending to SAC edges.

Scotland

All habitats in Table A7A were included along with their N CL values used in assessment.

The method used was the following:

GIS option 1: This method was applied to features for which we have relatively complete country-wide Annex I habitat data (mostly coastal and woodland habitats). Analysis was undertaken by one of SNH's GIS Specialists (Carmen Mayo). The Annex I habitat maps were overlaid with N deposition data for 2020-22 to assess what percentage of each feature exceeds the critical load value for nutrient nitrogen. For this option, the result represents an assessment for the full extent of the habitat within Scotland, i.e. within SACs plus also the wider countryside.

GIS option 2: This option used the same GIS approach with the only difference being that it was applied to **SACs only**, (i.e. not wider countryside). For these habitats we have good Annex I data but mainly from within designated sites, so the actual (mapped) location/distribution of habitats within the SAC was also used in this approach.

There were 4 habitats (H5130. H6410. H6520 and H91A0) where there was insufficient mapping data to apply either method.

Wales

All these habitats, and details of the N CL values used in the assessment of exceedance, are shown in Table A7A.

The approach taken to assess the scale of N CL exceedance relied on N deposition mapping data for 2020-2022 from the Air Pollution Information System (APIS), which was based on the CBED model (Levy *et al.,* 2024). Approaches to mapping N deposition against habitat distribution differed between countries based on data availability and confidence in distribution data. Information on each countries approach, to mapping N deposition exceedance are detailed below

The APIS data provided a N CL range for each habitat. It was decided that the precautionary principle should be applied, and the lowest figure in the range should be used as the N CL exceedance threshold. The ranges and chosen N CL threshold value can be found in Table A7A.

Explanation of the use of the lowest point in critical load range rather than modifying factors

Critical loads are expressed as a range of N deposition values at which harm may occur to sensitive ecosystems. The range represents variation in sensitivity within the habitat (across Europe for example), and also uncertainty in both ecosystem response and N addition rate in the studies that were considered.

In the 2019 Article 17 report, standard modifying factors were assumed to apply to all UK examples of certain habitats, to indicate where on that range UK habitats would sit. For example, all UK saltmarshes were assumed to sit at the upper end of the critical load range– meaning they were less vulnerable to atmospheric N deposition. However, a Europe-wide review of N deposition critical loads, published in 2022 (Bobbink *et al*. 2022) resulted in a) changes(mainly decreases) to the upper and lower ends of the ranges for many habitats, b) increased confidence in the stated critical load ranges for some habitat types and c) changes to the habitat types for which critical load ranges were provided – for example, providing separate ranges for mid/upper saltmarsh from low/pioneer saltmarsh.

A UK Expert Group was convened in autumn 2022 to consider how to address these changes, to feed into the Air Pollution Trends Report 2023 (Rowe *et al.* 2023)– an annual report providing key information to track the effects on ecosystems of policies aimed at meeting national and international air pollution targets, e.g. under the UK Government's Clean Air Strategy 2019 (CAS), the National Emission Ceilings Regulations (NECR), and the United Nations-Economic Commission for Europe Convention on Long-range Transboundary Air Pollution (CLRTAP). This group concluded it was most appropriate to apply the lower end of the range for all habitats, with no modifiers such as soil pH or annual precipitation. This reflects increasing evidence of decreases in species, biogeochemical changes and harm to habitats at lower N deposition levels. The discussion is described in Rowe & Hina (2023).

It was acknowledged that this approach would mean the % of the UK mapped as exceeding critical loads for N deposition would increase compared to the previous year. This is because a) the critical loads themselves had decreased in many cases and b) modifying factors to use a higher point in the critical load range were no longer used. This might make targets for non-exceedance seem unattainable, and there is an argument that more achievable targets are more likely to be addressed. However, the group reached a consensus that the mapping value / critical load must be defined solely using scientific evidence. There was also benefit in aligning to the method used by regulators and Nature Conservation Bodies in casework (outlined on APIS – that modifying factors could only be used when supported by site-specific evidence and not generically at initial "screening" stages of ecosystem assessment).

This increase in the % exceedance was mitigated in the Trends Report by results from previous years being mapped against the same mapping values throughout. This cannot be undertaken for the 2019–2024 Habitats Regulation reporting, as there is no means to compare with previous results.

Implications

The estimates of habitat N CL exceedance were used to decide:

1) if N CL exceedance should be reported as a Pressure and threat; and
2) how the future trend for Structure and functions parameter should be reported.

Reporting of pressures and threats

N CL exceedance was reported in the list of pressures and threats using the pressure code PK04 (Atmospheric N-deposition). More specific categorisation was not used because the number of pressures and threats categories that could be reported was limited (see 5.3.2); habitats with excess nitrogen deposition were affected by a variety of sources and source attribution varied between countries; and more detailed source attribution information was already being used to target site-level measures (e.g. Natural England Shared Nitrogen Action Plans).

Where >25% of the habitat area exceeded the N CL, this code was reported as a High-rank pressure and threat, and where 5-25% Area of habitat exceeded the N CL, this code was reported as a Medium-rank pressure and threat. Notes were included under field 7.3 to explain why this was done.

Reporting of Future prospects for Structure and functions

The reporting of the Future prospects for Structure and functions also depended on the level of N CL exceedance. Where the Area of habitat exceedance was >25%, it was expected that the Future prospects would be reported as Unfavourable-bad, and where exceedance was between 5-25%, the Future prospects would be reported as at least Unfavourable-inadequate. This anticipated that:

(ii) the same Area of habitat would likely be in Unfavourable condition in 2037 due to N CL exceedance; and
(ii) the future trend for Structure and functions would likely be very negative or negative, unless: (a) the condition of the habitat was already mostly Unfavourable and unlikely to deteriorate further; and/or (b) targeted measures to reduce N deposition impacts were implemented.

Notes were included under field 9.2 to explain how the Future prospects for Structure and functions considered the level of N CL exceedance.

Table A7A. Habitats for which N CL exceedance was reported, their associated N CL value range and reliability of underlying data, and the N CL value used in 2019–2024 Habitats Regulations Reporting. This table is ordered alphabetically by habitat group.

Habitat code	Habitat name	Habitat group	N CL used for assessment (kgN/ha/yr)	N CL Assessment undertaken by			
				ENG	NI	SCO	WLS
H2110	Embryonic shifting dunes	Coastal sand dunes and continental dunes	10	Y	N	N	Y
H2120	Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`)	Coastal sand dunes and continental dunes	10	N	N	Y	N
H2130	Fixed dunes with herbaceous vegetation (`grey dunes`)	Coastal sand dunes and continental dunes	5	Y	Y	Y	Y
H2150	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)	Coastal sand dunes and continental dunes	10	Y	Y	Y	Y
H2190	Humid dune slacks	Coastal sand dunes and continental dunes	5	Y	Y	Y	Y
H2330	Inland dunes with open *Corynephorus* and *Agrostis* grasslands	Coastal sand dunes and continental dunes	5	Y	N	N	N
H2140	Decalcified fixed dunes with *Empetrum nigrum*	Coastal sand dunes and continental dunes	10	Y	Y	Y	Y
H21A0	Machairs	Coastal sand dunes and continental dunes	5	Y	Y	Y	Y
H2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	Coastal sand dunes and continental dunes	5	Y	N	N	N
H9180	*Tilio-Acerion* forests of slopes, screes and ravines	Forests	15	Y	Y	Y	Y
H91A0	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	Forests	10	Y	Y	Y	Y
H91D0	Bog woodland	Forests	5	Y	Y	Y	Y
H9120	Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)	Forests	10	Y	Y	Y	Y
H9130	*Asperulo-Fagetum* beech forests	Forests	10	Y	N	N	Y
H9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*	Forests	15	Y	Y	Y	Y
H9190	Old acidophilous oak woods with *Quercus robur* on sandy plains	Forests	10	Y	Y	Y	Y
H91J0	*Taxus baccata* woods of the British Isles	Forests	10	Y	Y	Y	Y
H91C0	Caledonian forest	Forests	5	Y	Y	Y	Y
H1130	Estuaries	Marine, coastal and halophytic habitats	10	Y	Y	Y	Y
H1150	Coastal lagoons	Marine, coastal and halophytic habitats	20	Y	N	N	Y
H1310	*Salicornia* and other annuals colonising mud and sand	Marine, coastal and halophytic habitats	20	Y	N	Y	N
H1320	Spartina swards (*Spartinion maritimae*)	Marine, coastal and halophytic habitats	10	N	N	Y	Y

Habitat code	Habitat name	Habitat group	N CL used for assessment (kgN/ha/yr)	N CL Assessment undertaken by			
				ENG	NI	SCO	WLS
H1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	Marine, coastal and halophytic habitats	10	Y	Y	Y	Y
H1420	Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	Marine, coastal and halophytic habitats	10	Y	Y	Y	Y
H6150	Siliceous alpine and boreal grasslands	Natural and semi-natural grassland formations	5	Y	Y	Y	Y
H6210	Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)	Natural and semi-natural grassland formations	10	Y	Y	Y	Y
H6230	Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe)	Natural and semi-natural grassland formations	6	Y	N	N	N
H6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	Natural and semi-natural grassland formations	10	N	N	Y	N
H6510	Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)	Natural and semi-natural grassland formations	10	Y	Y	Y	Y
H6520	Mountain hay meadows	Natural and semi-natural grassland formations	10	Y	Y	Y	Y
H6170	Alpine and subalpine calcareous grasslands	Natural and semi-natural grassland formations	5	Y	N	N	N
H7110	Active raised bogs	Raised bogs and mires and fens	5	N	N	Y	N
H7120	Degraded raised bogs still capable of natural regeneration	Raised bogs and mires and fens	5	Y	Y	Y	Y
H7130	Blanket bogs	Raised bogs and mires and fens	5	Y	Y	Y	Y
H7140	Transition mires and quaking bogs	Raised bogs and mires and fens	5	Y	Y	Y	Y
H7150	Depressions on peat substrates of the *Rhynchosporion*	Raised bogs and mires and fens	5	Y	Y	Y	Y
H7210	Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	Raised bogs and mires and fens	15	Y	N	N	Y
H7230	Alkaline fens	Raised bogs and mires and fens	15	Y	N	N	Y
H7240	Alpine pioneer formations of the *Caricion bicoloris-atrofuscae*	Raised bogs and mires and fens	15	Y	Y	Y	Y
H7220	Petrifying springs with tufa formation (Cratoneurion)	Raised bogs and mires and fens	15	Y	N	Y	N
H5130	*Juniperus communis* formations on heaths or calcareous grasslands	Sclerophyllous scrub (matorral)	5	Y	Y	N	Y
H4030	European dry heaths	Temperate heath and scrub	5	Y	N	N	N

Habitat code	Habitat name	Habitat group	N CL used for assessment (kgN/ha/yr)	N CL Assessment undertaken by			
				ENG	NI	SCO	WLS
H4060	Alpine and Boreal heaths	Temperate heath and scrub	5	Y	N	N	N
H4010	Northern Atlantic wet heaths with *Erica tetralix*	Temperate heath and scrub	5	Y	Y	Y	Y
H4020	Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*	Temperate heath and scrub	5	Y	N	Y	Y
H4040	Dry Atlantic coastal heaths with *Erica vagans*	Temperate heath and scrub	5	Y	Y	Y	Y
H4080	Sub-Arctic *Salix* spp. scrub	Temperate heath and scrub	5	Y	N	Y	Y

Appendix 8: Pressure and Threat Reporting Categories and Codes

Appendix 8 details the Pressure and threat reporting categories used in the 2019–2024 Habitats Regulations reports (table A8A).

Table A8A. Pressure and threat reporting categories used in the 2019–2024 Habitats Regulations reports. This list of pressures has been adopted by Bern for Resolution 8 reporting, and therefore has been adopted for UK Habitats Regulations reporting by the four countries to provide consistency. The codes and pressures have been updated since the previous reporting round. The list was used to complete fields 7.1 and 8.1 of habitat and species reporting respectively.

Pressure/ threat code 2019–2024	Pressure/threat name 2019–2024
PA	**Agriculture related practices**
PA01	Conversion into agricultural land (excluding drainage and burning)
PA02	Conversion from one type of agricultural land use to another (excluding drainage and burning)
PA03	Conversion from mixed farming and agroforestry systems to specialised (e.g. single crop) production
PA04	Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.)
PA05	Abandonment of management/use of grasslands and other agricultural and agroforestry systems (e.g. cessation of grazing, mowing or traditional farming)
PA06	Mowing or cutting of grasslands
PA07	Intensive grazing or overgrazing by livestock
PA08	Extensive grazing or undergrazing by livestock
PA09	Burning for agriculture
PA10	Livestock farming (without grazing)
PA11	Soil management practices in agriculture (e.g. ploughing)
PA12	Harvesting of crops and cutting of croplands
PA13	Application of natural or synthetic fertilisers on agricultural land
PA14	Use of plant protection chemicals in agriculture
PA15	Use of other pest control methods in agriculture (excluding tillage)
PA16	Introduction and spread of new organisms (including GMOs)
PA17	Agricultural activities generating pollution to surface or ground waters (including marine)
PA18	Agricultural activities generating air pollution
PA19	Agricultural activities generating soil pollution
PA20	Live stock farming generating pollution
PA21	Active abstraction of water for agriculture
PA22	Drainage for use as agricultural land
PA23	Physical alteration of water bodies (including dams, channels, etc.)
PA24	Agricultural crops for renewable energy production
PA25	Agriculture activities not referred to above
PB	**Forestry related practices**

PB01	Conversion to forest from other land uses, or afforestation (excluding drainage)
PB02	Conversion from one type of forestry land use to another
PB03	Introduction and spread of new species for forestry purposes (including GMOs)
PB04	Abandonment of traditional forest management
PB05	Logging without replanting or natural regrowth
PB06	Logging or thinning (excluding clear cutting)
PB07	Removal of dead and dying trees (including debris)
PB08	Removal of old trees (excluding dead or dying trees)
PB09	Clear-cutting, removal of all trees
PB10	Illegal logging
PB11	Exploitation of forestry products (excluding logging)
PB12	Burning for forestry
PB13	Suppression of fire for forestry
PB14	Forest management reducing old growth forests
PB15	Wood transport
PB16	Application of natural or synthetic fertilisers in forestry
PB17	Use of plant protection chemicals in forestry
PB18	Use of other pest control methods in forestry (e.g. physical plant protection)
PB19	Forestry activities generating pollution to surface or ground waters (including marine)
PB20	Forestry activities generating air pollution
PB21	Forestry activities generating soil pollution
PB22	Forestry activities generating noise pollution
PB23	Physical alteration of water bodies for forestry (including dams)
PB24	Drainage for forestry
PB25	Forest plantations for renewable energy production
PB26	Other forestry activities, excluding those relating to agro-forestry
PC	**Extraction of resources (minerals, peat, non-renewable energy resources)**
PC01	Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell)
PC02	Extraction of salt
PC03	Extraction of oil and gas (including infrastructure)
PC04	Coal mining
PC05	Peat extraction
PC06	Dumping/depositing of inert and dredged materials from terrestrial and marine extraction
PC07	Geotechnical surveying
PC08	Extraction activities generating pollution to surface or ground waters
PC09	Extraction activities generating marine pollution
PC10	Extraction activities generating soil pollution
PC11	Extraction activities generating noise, light or other forms of pollution
PC12	Abstraction of surface and ground water for resource extraction
PC13	Mining and extraction activities not referred to above
PD	**Energy production processes and related infrastructure development**
PD01	Wind, wave and tidal power (including infrastructure)
PD02	Hydropower (dams, weirs, run-off-the-river and respective infrastructure)

PD03	Solar power (including infrastructure)
PD04	Geothermal power generation (including infrastructure)
PD05	Development and operation of energy production plants (including infrastructure)
PD06	Transmission of electricity and communications (cables)
PD07	Oil and gas pipelines
PD08	Energy production and transmission activities generating pollution to surface or ground waters
PD09	Energy production and transmission activities generating air pollution
PD10	Energy production and transmission activities generating marine pollution
PD11	Energy production and transmission activities generating noise pollution
PD12	Energy production and transmission activities generating light, heat or other forms pollution
PD13	Abstraction of surface and ground water for energy production (excluding hydropower)
PD14	Energy production and transmission activities not referred to above
PE	**Development and operation of transport systems**
PE01	Roads, paths, railroads and related infrastructure
PE02	Shipping lanes and ferry lanes transport operations
PE03	Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging)
PE04	Flight paths of planes, helicopter and other non-leisure aircrafts
PE05	Land, water and air transport activities generating pollution to surface or ground waters
PE06	Land, water and air transport activities generating air pollution
PE07	Land, water and air transport activities generating marine pollution
PE08	Land, water and air transport activities generating noise, light and other forms of pollution
PE09	Land, water and air transport activities not referred to above
PF	**Development, construction and use of residential, commercial, industrial and recreational infrastructure and areas**
PF01	Conversion from other land uses to built-up areas
PF02	Construction or modification (e.g. of housing and settlements) in existing built-up areas
PF03	Creation or development of sports, tourism and leisure infrastructure
PF04	Development and maintenance of beach areas for tourism and recreation
PF05	Sports, tourism and leisure activities
PF06	Deposition and treatment of waste/rubbish from built-up areas
PF07	Residential and commercial activities and structures generating pollution to surface or ground waters
PF08	Industrial activities and structures generating pollution to surface or ground waters
PF09	Residential, commercial and industrial activities and structures generating air pollution
PF10	Residential, commercial and industrial activities and structures generating marine pollution
PF11	Residential, commercial and industrial activities and structures generating soil pollution
PF12	Residential, commercial and industrial activities and structures generating noise, light, heat or other forms of pollution
PF13	Drainage, land reclamation and conversion of wetlands, marshes, bogs, etc. for built-up areas
PF14	Modification of flooding regimes, flood protection for built-up areas
PF15	Modification of coastline, estuary and coastal conditions for built-up areas
PF16	Construction or development of reservoirs and dams for built-up areas
PF17	Active abstraction of water for built-up areas

PG	Extraction and cultivation of biological living resources (other than agriculture and forestry)
PG01	Marine fish and shellfish harvesting causing reduction of species/prey populations and disturbance of species (professional)
PG02	Marine fish and shellfish harvesting causing reduction of species/prey populations and disturbance of species (recreational)
PG03	Marine fish and shellfish harvesting activities causing physical loss and disturbance of seafloor habitats
PG04	Marine fish and shellfish processing
PG05	Marine plant harvesting
PG06	Freshwater fish and shellfish harvesting (professional)
PG07	Freshwater fish and shellfish harvesting (recreational)
PG08	Hunting
PG09	Management of fishing stocks and game
PG10	Harvesting or collecting of wild plants, fungi and animals on terrestrial land
PG11	Illegal shooting/killing
PG12	Illegal harvesting, collecting and taking of plants and fungi
PG13	Bycatch and incidental killing (due to fishing and hunting activities)
PG14	Poisoning of animals (excluding lead poisoning)
PG15	Use of lead ammunition or fishing weights
PG16	Modification of coastal conditions for marine aquaculture
PG17	Active abstraction of water bodies for aquaculture
PG18	Physical alterations of water bodies for aquaculture (including channels, weirs and dams)
PG19	Marine aquaculture generating marine pollution
PG20	Freshwater aquaculture generating pollution to surface or ground waters (including marine)
PG21	Introduction and spread of new species in aquaculture (including GMOs)
PG22	Abandonment of aquaculture
PG23	Other activities related to aquaculture and extraction or cultivation of biological living resources not referred to above
PH	**Military action, public safety measures, and other human intrusions**
PH01	Military, paramilitary or police exercises and operations on land and freshwater
PH02	Military, paramilitary or police exercises and operations in the marine environment
PH03	Abandonment of terrestrial military or similar exercises (loss of open habitats)
PH04	Vandalism or arson (incl. human-introduced wildfire)
PH05	Tree surgery, felling/removal of roadside trees and vegetation for public safety
PH06	Closure or restricted access to site/habitat
PH07	Intrusive and destructive research and monitoring activities
PH08	Other human intrusions and disturbance not mentioned above
PI	**Alien and problematic species**
PI01	Invasive alien species of Union concern
PI02	Other invasive alien species (other than species of Union concern)
PI03	Problematic native species
PI04	Plant and animal diseases, pathogens and pests
PJ	**Climate change**
PJ01	Temperature changes and extremes due to climate change
PJ02	Permafrost thawing due to climate change

PJ03	Changes in precipitation regimes due to climate change
PJ04	Sea-level rise due to climate change
PJ05	Saline intrusion
PJ06	Wave exposure changes due to climate change
PJ07	Cyclones, storms, or tornados due to climate change
PJ08	Soil degradation and erosion due to climate change
PJ09	Landslides, subsidence and solifluction due to climate change
PJ10	Change of habitat location, size, and / or quality due to climate change
PJ11	Desynchronisation of biological / ecological processes due to climate change
PJ12	Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change
PJ13	Change of species distribution (natural newcomers) due to climate change
PJ14	Other climate related changes in abiotic conditions
PK	**Mixed source pollution**
PK01	Mixed source pollution to surface and ground waters (limnic and terrestrial)
PK02	Mixed source marine water pollution (marine and coastal)
PK03	Mixed source air pollution, air-borne pollutants
PK04	Atmospheric N-deposition
PK05	Mixed source soil pollution and solid waste (excluding discharges)
PK06	Non-chemical mixed source pollution
PL	**Human-induced changes in water regimes**
PL01	Abstraction from groundwater, surface water or mixed water (mixed or unknown drivers)
PL02	Drainage (mixed or unknown drivers)
PL03	Old barriers or other obsolete infrastructures (mixed or unknown drivers)
PL04	Development and operation of dams (mixed or unknown drivers)
PL05	Modification of hydrological flow (mixed or unknown drivers)
PL06	Physical alteration of water bodies (mixed or unknown drivers)
PM	**Geological events, natural processes and catastrophes**
PM01	Storm or cyclone
PM02	Flooding
PM03	Natural wildfires
PM04	Earthquake and volcanic activity
PM05	Avalanches, landslides and collapse of terrain
PM06	Other natural catastrophes
PM07	Natural processes without direct or indirect influence from human activities or climate change
PX	**Unknown pressures, no pressures and pressures from outside the Member State**
PX01	Threats and pressures from outside the EU territory
PX02	Threats and pressures from outside the Member State
PX03	Unknown pressures or threats
PX04	No pressures or threats
PX05	No information on pressures or threats

Appendix 9: Conservation Measure Reporting Categories and Codes

Appendix 9 details the Conservation measure reporting categories used in the 2019–2024 Habitats Regulations reports (table A9A).

Table A9A. Conservation measure reporting categories used in the 2019–2024 Habitats Regulations reports. This list of conservation measures has been adopted by Bern for Resolution 8 reporting, and therefore has been adopted for UK Habitats Regulations reporting by the four countries to provide consistency. The codes and conservation measures have been updated since the previous reporting round. The list was used to complete fields 8.1 and 9.1 of habitat and species reporting respectively.

Conservation measure code 2019–2024	Conservation measure name 2019–2024
MA	**Measures related to agricultural practices and agriculture-related habitats**
MA01	Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land
MA02	Restore small landscape features on agricultural land
MA03	Maintain existing extensive agricultural practices and agricultural landscape features
MA04	Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures
MA05	Adapt mowing, grazing and other equivalent agricultural activities (e.g. burning)
MA06	Stop mowing, grazing and other equivalent agricultural activities e.g. burning (incl. restore or improve habitats)
MA07	Restoration of Annex I agricultural habitats (incl. re-establish and improve)
MA08	Adapt soil management practices in agriculture
MA09	Manage the use of natural and synthetic fertilisers as well as chemicals in agricultural for plant and animal production
MA10	Reduce/eliminate point or diffuse source pollution to surface or ground waters (including marine) from agricultural activities
MA11	Reduce/eliminate air pollution from agricultural activities
MA12	Reduce/eliminate soil pollution from agricultural activities
MA13	Manage agricultural drainage and water abstraction (incl. the restoration of drained or hydrologically altered habitats)
MA14	Other measures related to agricultural practices
MB	**Measures related to forestry practices and forest related habitats**
MB01	Prevent conversion of (semi-) natural habitats into forests and of (semi-) natural forests into intensive forest plantation
MB02	Maintain existing traditional forest management and exploitation practices
MB03	Reinstate forest management and exploitation practices
MB04	Adapt/manage reforestation and forest regeneration
MB05	Adapt/change forest management and exploitation practices
MB06	Stop forest management and exploitation practices
MB07	Measures to combat illegal logging
MB08	Restoration of Annex I forest habitats (incl. re-establish and improvement)
MB09	Manage the use of natural and synthetic fertilisers, liming and pest control in forestry

MB10	Reduce diffuse or point source pollution to surface or ground waters (incl. marine) from forestry activities
MB11	Reduce air pollution from forestry activities
MB12	Reduce other types of pollution from forestry activities (such as noise and soil pollution)
MB13	Burning of forests for nature conservation
MB14	Manage drainage and water abstraction for forestry (inc. restoration of drained or hydrologically altered habitats)
MB15	Other measures related to forestry practices
MC	**Measures related to resources extraction and energy production**
MC01	Adapt/manage extraction of non-energy resources
MC02	Adapt/manage exploitation of energy resources
MC03	Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities)
MC04	Reduce impact of hydropower operation and infrastructure (incl. the restoration of freshwater habitats)
MC05	Adapt/manage fossil energy installation, facilities and operation
MC06	Reduce impact of service corridors and networks
MC07	Habitat restoration/creation from resources, exploitation areas or areas damaged due to installation of renewable energy infrastructure
MC08	Manage/reduce/eliminate point or diffuse source pollution to surface or ground waters from resource exploitation and energy production
MC09	Manage/reduce/eliminate air pollution from resource exploitation and energy production
MC10	Manage/reduce/eliminate marine pollution from resource exploitation and energy production
MC11	Manage/reduce/eliminate pollution types related to resource exploitation and energy production, (including but not limited to noise, light, thermal and soil pollution).
MC12	Manage water abstraction for resource extraction and energy production
MC13	Other measures related to extraction and energy exploitation activities
ME	**Measures related to development and operation of transport systems**
ME01	Reduce impact of transport operation and infrastructure
ME02	Manage/reduce/eliminate pollution to surface or ground water from transport
ME03	Manage/reduce/eliminate air pollution from transport
ME04	Manage/reduce/eliminate marine pollution from transport
ME05	Manage/reduce/eliminate noise, light and other forms of pollution from transport
ME06	Habitat restoration of areas impacted by transport
ME07	Other measures related to transport
MF	**Measures related to residential, commercial, industrial and recreational infrastructures, operations and activities**
MF01	Managing the impacts of converting land for construction and development of infrastructure
MF02	Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructure, operations and activities
MF03	Reduce impact of outdoor sports, leisure and recreational activities (incl. restoration of habitats)
MF04	Reduce/eliminate pollution to surface or ground waters from commercial, residential and recreational areas and activities, and from industrial activities and structures
MF05	Reduce/eliminate air pollution from industrial, commercial, residential and recreational areas and activities

MF06	Reduce/eliminate marine pollution from industrial, commercial, residential and recreational areas and activities (incl. contamination with litter)
MF07	Reduce/eliminate pollution (incl. noise, light, heat, soil pollution) from industrial, commercial, residential and recreational areas and activities
MF08	Manage changes in hydrological and coastal systems and regimes for construction and development-(incl. restoration of habitats).
MF09	Adapt the management of water abstraction for public supply and for industrial and commercial use to reduce negative impacts on habitats and species (incl. restoration of habitats)
MF10	Other measures related to residential, commercial, industrial and recreational infrastructures, operations and activities
MG	**Measures related to the effects of extraction and cultivation of biological living resources**
MG01	Management of professional/commercial fishing, shellfish and seaweed harvesting (incl. restoration of habitats)
MG02	Management of hunting, recreational fishing, and the recreational or commercial harvesting or collection of plants and fungi (incl. restoration of habitats)
MG03	Reducing the impact of (re-) stocking for fishing and hunting, of artificial feeding and predator control
MG04	Control/eradication of illegal killing, fishing and harvesting of wild plants, fungi and animals
MG05	Reduce bycatch and incidental killing of non-target species
MG06	Reduce impact of lead poisoning
MG07	Manage changes in coastal conditions for marine aquaculture
MG08	Reduce/eliminate diffuse and point source pollution from marine aquaculture
MG09	Other measures to reduce impacts from aquaculture infrastructures and operation
MG10	Manage water abstraction and modification of hydrological conditions for marine and freshwater aquaculture
MG11	Reduce/eliminate point and diffuse source pollution to surface waters from freshwater aquaculture
MG12	Restoration of habitats to address modifications of hydrological conditions for marine and freshwater aquaculture
MG13	Other measures related to exploitation of species
MH	**Measures related to military installations and activities and other specific human activities**
MH01	Reduce impact of military installations and activities
MH02	Adapt/maintain military activities
MH03	Reduce impact of other specific human activities
MH04	Habitat restoration of areas related to military installations and activities and other specific human activities.
MI	**Measures related to alien and problematic native species**
MI01	Early detection and rapid eradication of invasive alien species of Union concern
MI02	Management, control or eradication of established invasive alien species of Union concern
MI03	Management, control or eradication of other invasive alien species
MI04	Restoration of habitats affected by invasive alien species (incl. of Union concern and others)
MI05	Management of problematic native species
MI06	Controlling and eradicating plant and animal diseases, pathogens and pests
MJ	**Measures related to climate change**

MJ01	Implement climate change mitigation measures
MJ02	Implement climate change adaptation measures
MK	**Measures related to mixed source pollution and human-induced changes in hydraulic conditions for several uses**
MK01	Reduce impact of mixed source pollution
MK02	Reduce impact of multi-purpose hydrological changes
MK03	Restoration of habitats impacted by multi-purpose hydrological changes
MK04	Other measures related to mixed source pollution.
MK05	Other measures related to multi-purpose human-induced changes in hydraulic conditions.
MM	**Measures related to natural processes, geological events and natural catastrophes**
MM01	Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes that occur without direct or indirect influence from human activities or climate change
MM02	Minimise/prevent impacts of geological and natural catastrophes
MM03	Restoration of habitats following geological and natural catastrophes
MM04	Other measures related to natural processes
MS	**Measures related to management of species from the nature directives and other native species**
MS01	Reinforce populations of species from the directives
MS02	Reintroduce species from the directives
MS03	Restoration of habitat of species from the directives
MS04	Manage-native species (incl. non-Directive species)
MX	**Measures outside the Member State**
MX01	Support conservation measures in another EU Member State
MX02	Support conservation measures in countries outside the EU