Reporting under the Habitat Regulations (as amended)[1]

2019-2024

Conservation status assessment for the species:

S1223 - Leatherback turtle

(*Dermochelys coriacea*)

United Kingdom

JNCC

NATURAL ENGLAND

NatureScot
Scotland's Nature Agency
Buidheann Nàdair na h-Alba

Cyfoeth Naturiol Cymru
Natural Resources Wales

Department of Agriculture, Environment and Rural Affairs
An Roinn Talmhaíochta, Comhshaoil agus Gnóthaí Tuaithe
Depairtment o' Fairmin, Environment an' Kintra Matthers
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NIEA Northern Ireland Environment Agency
Gníomhaireacht Comhshaoil Thuaisceart Éireann
Norlin Airlan Environment Agency

[1] **Habitat Regulations (as amended):**

- The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended), Regulation 6A
- Report under The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), regulation 3ZA
- The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), regulation 3ZA

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This report was produced by JNCC in collaboration with the UK Country Nature Conservation Bodies (CNCBs) and country governments.

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Important note - Please read

- The information in this document represents the United Kingdom Reporting under the Habitat Regulations (as amended)[1], for the period 2019-2024.
- It is based on supporting information provided by Joint Nature Conservation Committee and UK Country Nature Consevation Bodies (CNCBs), which is documented separately.
- The Habitats Regulations reporting 2019-2024 Approach Document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- Map showing the distribution of the species is included.
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the assessments. Further underpinning explanatory notes are available in the related country reports.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; and/or (iii) the field was not relevant to this species (section 12 National Site Network coverage for Annex II species).

Further details on the approach to the Habitats Regulations Reporting 2019-2024 are available on the JNCC website.

Assessment Summary: Leatherback turtle

Distribution Map

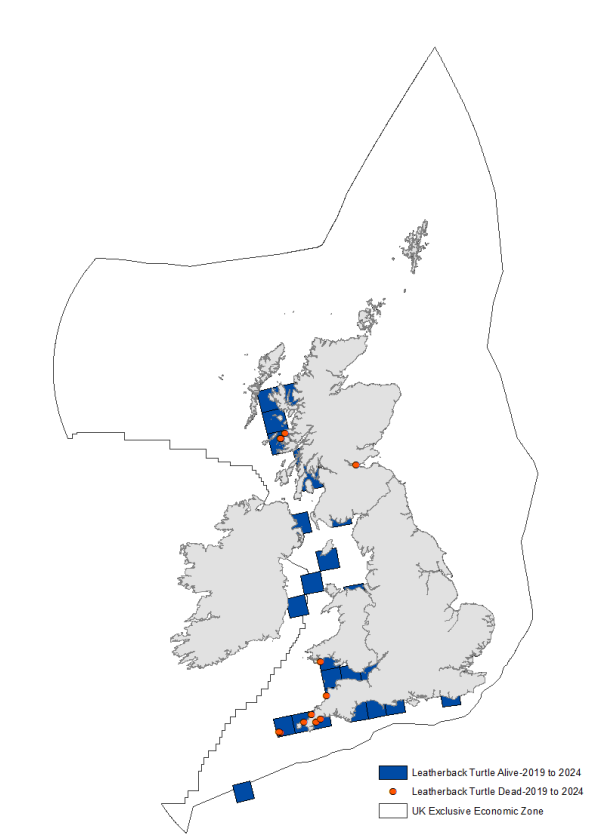

Figure 1: United Kingdom map for S1223 - Leatherback turtle (*Dermochelys coriacea*). The map is based on available species records within the current reporting period.

Table 1: Table summarising the conservation status for S1223 - Leatherback turtle (*Dermochelys coriacea*). Overall conservation status for species is based on assessments of range, population, habitat for the species, and future prospects.

Overall Conservation Status (see section 11)

Unknown (XX)

Breakdown of Overall Conservation Status

Range (see section 5)	**Unknown (XX)**
Population (see section 6)	**Unknown (XX)**
Habitat for the species (see section 7)	**Unknown (XX)**
Future prospects (see section 10)	**Unknown (XX)**

List of Sections

National Level

1. General information

1.1 Country	United Kingdom
1.2 Species code	S1223
1.3 Species scientific name	*Dermochelys coriacea*
1.4 Alternative species scientific name	
1.5 Common name	Leatherback turtle
Annex(es)	IV

2. Maps

2.1 Sensitive species	No
2.2 Year or period	2019-2024
2.3 Distribution map	Yes
2.4 Distribution map; Method used	Based mainly on expert opinion with very limited data

2.5 Additional information

No additional information

3. Information related to Annex V Species

3.1 Is the species taken in the wild / exploited?

3.2 What measures have been taken?

a) Regulations regarding access to property
b) Temporary or local prohibition on the taking of specimens in the wild and exploitation
c) Regulation of the periods and/or methods of taking specimens
d) Application of hunting and fishing rules which take account of the conservation of such populations

e) Establishment of a system of licences for taking specimens or of quotas

f) Regulation of the purchase, sale, offering for sale, keeping for sale, or transport for sale of specimens

g) Breeding in captivity of animal species as well as artificial propagation of plant species

Other measures

Other measures description

3.3: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish)

a) Unit

Table 2: Quantity taken from the wild during the reporting period (see 3.3a for units). For species with defined hunting seasons, Season 1 refers to 2018/2019 (autumn 2018 to spring 2019), and Season 6 to 2023/2024. For species without hunting seasons, data are reported by calendar year: Year 1 is 2019, and Year 6 is 2024.

	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
b) Minimum	-	-	-	-	-	-
c) Maximum	-	-	-	-	-	-
d) Unknown	-	-	-	-	-	-

3.4: Hunting bag or quantity taken in the wild; Method used

3.5: Additional information

No additional information

Biogeographical Level

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs	ATL

4.2 Sources of information

See section 14 References

5. Range

5.1 Surface area (km²)	335,391
5.2 Short-term trend; Period	
5.3 Short-term trend; Direction	Unknown
5.4 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
5.5 Short-term trend; Method used	Insufficient or no data available
5.6 Long-term trend; Period	
5.7 Long-term trend; Direction	Unknown
5.8 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Rate of decrease	

5.9 Long-term trend; Method used	Insufficient or no data available

5.10 Favourable Reference Range (FRR)

a) Area (km²)	335,391
b) Pre-defined increment	
c) Unknown	No
d) Method used	Expert opinion
e) Quality of information	low

5.11 Change and reason for change in surface area of range

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

5.12 Additional information

Range estimated for the current period matches the range given in the 4th reporting round (2019) however, trends in range is considered unknown due to the quantity and quality of available data on which to base an assessment.

6. Population

6.1 Year or period

6.2 Population size (in reporting unit)

a) Unit	number of individuals
b) Minimum	

c) Maximum	
d) Best single value	
6.3 Type of estimate	
6.4 Quality of extrapolation to reporting unit	
6.5 Additional population size (using population unit other than reporting unit)	
a) Unit	
b) Minimum	
c) Maximum	
d) Best single value	
e) Type of estimate	
6.6 Population size; Method used	Insufficient or no data available
6.7 Short-term trend; Period	
6.8 Short-term trend; Direction	Unknown
6.9 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
6.10 Short-term trend; Method used	Insufficient or no data available
6.11 Long-term trend; Period	
6.12 Long-term trend; Direction	Unknown

6.13 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Confidence interval	
d) Rate of decrease	
6.14 Long-term trend; Method used	Insufficient or no data available

6.15 Favourable Reference Population (FRP)

ai) Population size	
aii) Unit	
b) Pre-defined increment	
c) Unknown	Yes
d) Method used	
e) Quality of information	

6.16 Change and reason for change in population size

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

6.17 Additional information

There are no dedicated surveys for leatherback turtle in the UK due to their, largely, seasonal presence and low density.

Although in the 3rd reporting round (2013) the population unit was based on presence/ absence in grid squares from the distribution data, this information has limited value with regards comparability for a highly mobile species given the lack of data associated with each 50x50km grid square. The guidance has requested numbers of individuals for the 4th and 5th reporting round (2019 and 2025), however, due to lack of data there are no population values for leatherback turtle in UK waters.

6.18 Age structure, mortality and reproduction deviation	Unknown

7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat (for long-term survival)

a) Is area of occupied habitat sufficient?	Unknown
b) Is quality of occupied habitat sufficient?	Unknown
c) If No or Unknown, is there a sufficiently large area of unoccupied habitat of suitable quality?	Unknown

7.2 Sufficiency of area and quality of occupied habitat; Method used

a) Sufficiency of area of occupied habitat; Method used	Based mainly on expert opinion with very limited data
b) Sufficiency of quality of occupied habitat; Method used	Based mainly on expert opinion with very limited data

7.3 Short-term trend; Period	
7.4 Short-term trend; Direction	Unknown
7.5 Short-term trend; Method used	Insufficient or no data available
7.6 Long-term trend; Period	
7.7 Long-term trend; Direction	Unknown

7.8 Long-term trend; Method used	Insufficient or no data available

7.9 Additional information

Direct evidence of habitat quality is limited as presently, a comprehensive understanding of the key elements important to the species is undetermined. In some cases, conclusions for species range and population could be indicative of habitat quality by proxy, however confidence in assessment outputs would be low.

The occurrence of leatherback turtle in UK EEZ appears to be unchanged over the last decade, based on reported sightings. But there is insufficient evidence to be able to determine the quality or sufficiency of habitat for the species.

8. Main pressures

8.1 Characterisation of pressures

Table 3: Pressures affecting the species, including timing and importance/impact ranking. Pressures are defined as factors acting currently and/or during the reporting period (2019–2024). Rankings are: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Pressure	Timing	Ranking
PK02: Mixed source marine water pollution (marine and coastal)	Ongoing and likely to be in the future	Medium (M)
PX02: Threats and pressures from outside the Member State	Ongoing and likely to be in the future	Medium (M)
PJ12: Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change	Ongoing and likely to be in the future	Medium (M)

8.2 Sources of information

See section 14 References

8.3 Additional information

No additional information

9. Conservation measures

9.1: Status of measures

a) Are measures needed?	Yes
b) Indicate the status of measures	Measures identified and taken
9.2 Main purpose of the measures taken	Maintain the current range, population and/or habitat for the species
9.3 Location of the measures taken	Both inside and outside National Site Network
9.4 Response to measures	Medium-term results (within the next two reporting periods, 2025–2036)

9.5 List of main conservation measures

Table 4: Key conservation measures addressing current pressures and/or anticipated threats during the next two reporting periods (2025–2036). Measures are ranked by importance/impact: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Conservation measure	Ranking
MG05: Reduce bycatch and incidental killing of non-target species	High (H)
MG04: Control/eradication of illegal killing, fishing and harvesting of wild plants, fungi and anmals	High (H)

9.6 Additional information

This species is not an Annex II species and therefore the designation of SACs is not required, as stipulated in the Habitats Regulations. However, as a European Protected Species, protection is provided throughout UK waters and it is an offence to kill, injure or disturb. The UK funds strandings surveillance system through the Cetaceans Strandings Investigation Programme and the Scottish Marine Animal Strandings Scheme, ongoing since 1990, which aims to: collate, analyse and report data for all cetacean, seal, turtle and shark strandings around the coast of the UK: determine the causes of death in stranded animals, including bycatch and physical trauma and; undertake surveillance on the incidence of disease in stranded animals in order to identify any substantial new threats to their conservation status. Furthermore, the UK Marine Wildlife Bycatch Mitigation Initiative (published August 2022) aims to improve our understanding of bycatch and entanglement of sensitive marine species through monitoring and scientific

research, identify ‘hotspot” or high-risk areas/gear types/fisheries in which to focus monitoring and mitigation, and develop and implement effective measures to minimise bycatch/entanglement.

10. Future prospects

10.1a Future trends of parameters

ai) Range	Unknown
bi) Population	Unknown
ci) Habitat for the species	Unknown

10.1b Future prospects of parameters

aii) Range	Unknown
bii) Population	Unknown
cii) Habitat for the species	Unknown

10.2 Additional information

These results are based on the current conservation status for each parameter combined with the future trend for each parameter. The future trend is an estimate of how the parameter is likely to progress into the future, using the current trend as a baseline and considering the balance between threats and measures to assess how these are likely to affect that trend over the next two reporting cycles (12 years). For leatherback turtle, the future trend and consequently the future prospects for all parameters are assessed as Unknown; this is due to there being insufficient data to establish current trends for these parameters.

11. Conclusions

11.1 Range	Unknown (XX)
11.2 Population	Unknown (XX)
11.3 Habitat for the species	Unknown (XX)
11.4 Future prospects	Unknown (XX)
11.5 Overall assessment of Conservation Status	Unknown (XX)

11.6 Overall trend in Conservation Status	Unknown

11.7 Change and reason for change in conservation status

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

11.7 Change and reason for change in conservation status trend

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

11.8 Additional information

Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is unknown; and (ii) the Favourable Reference Range is unknown.

Conclusion on Population reached because: (i) the FRP is unknown; and (ii) the short-term trend direction in Population size is unknown; and (iii) the current Population size is unknown.

Conclusion on Habitat for the species reached because: (i) the area of habitat is unknown and (ii) the habitat quality is unknown for the long-term survival of the species; and (iii) the short-term trend in area and sufficiency of habitat is unknown.

Conclusion on Future prospects reached because: (i) the Future prospects for Range are unknown; (ii) the Future prospects for Population are unknown; and (iii) the Future prospects for Habitat for the species are unknown.

Overall assessment of Conservation Status is Unknown because all of the conclusions are Unknown.

Overall trend in Conservation Status is based on the combination of the short-term trends for Range - unknown, Population - unknown, and Habitat for the species - unknown.

12. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex II species

12.1 Population size inside the pSCIs, SCIs and SACs network

a) Unit	
b) Minimum	
c) Maximum	
d) Best single value	
12.2 Type of estimate	
12.3 Population size inside the network; Method used	
12.4 Short-term trend of population size within the network; Direction	
12.5 Short-term trend of population size within the network; Method used	
12.6 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Direction	
12.7 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Method used	

12.8 Additional information

No additional information

13. Complementary information

13.1 Justification of percentage thresholds for trends

No justification information

13.2 Trans-boundary assessment

No trans-boundary assessment information

13.2 Other relevant information

No other relevant information

14. References

Biogeographical and marine regions

4.2 Sources of information

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Main pressures

8.2 Sources of information

No sources of information

15. Explanatory Notes

Field label	Note
8.1: Characterisation of pressures	PK02 Mixed source marine water pollution (marine and coastal). Plastic pollution in the ocean is of concern for leatherback turtles, as floating plastic could be confused for their main prey, jellyfish (Mrosovsky et al., 2009; Baudouin & Claro, 2020; Reyes-Lopez et al., 2021). There is little evidence from UK waters but results of historical analysis of debris ingestion by leatherback turtles globally show a long-term increase in ingestion frequency (Mrosovsky et al., 2009; Schuyler et al., 2013). Plastic ingestion in leatherback turtles has been known to result in ulcers, blocking in digestive tract, and potentially fatal intestinal or gastric issues (Barreiros et al., 2001; Baudouin & Claro, 2020). Entanglement in plastic debris and abandoned, lost and discarded fishing gear (ALDFG) also poses a threat, with increasing reports of entanglement in all extant sea turtle species, globally (Peake, 2020; Oros et al., 2021; Reyes-Lopez et al., 2021; Baudouin & Claro, 2020), including reports in UK waters (Penrose & Westfield, 2023). Entanglement in plastic debris and ALDFG can result in limb damage, decreased foraging ability, or fatality through drowning (Peake, 2020; Oros et al., 2021; Reyes-Lopez et al., 2021; Baudouin & Claro, 2020). Evidence of organochlorine contaminants (OCs), polycyclic aromatic hydrocarbons (PAHs) and persistent organic populations (POPs) have been found in leatherback turtles across the North Atlantic, including evidence of maternal transfer of pollutants to eggs (Guirlet et al., 2010; Stewart et al., 2011; Oros et al., 2021). With possible bioaccumulation, contaminants could pose a significant threat to the species however, there is little knowledge on the impacts in UK waters or the wider OSPAR region (Baudouin & Claro, 2020). Contaminants could increase risk of disease through immunosuppression. There are reports of other marine pollutants also accumulating in this species, which are known to be carcinogenic to humans, but the impact on

	marine species is not yet established (Speer et al, 2018). However, the extent to which these are present in animals visiting UK waters, and exactly how contaminants affect leatherback turtles is largely unknown.
8.1: Characterisation of pressures	PX02 Threats and pressures from outside member states. Leatherback turtles travel long distances (Bailey et al., 2012) and as a result, face a variety of pressures outside of UK waters that are likely to impact populations. For example, leatherback turtles are exposed to a wide variety of different fishing types and gears and thus bycatch across the mid and north Atlantic pose a significant risk (Baudouin & Claro, 2020; Garzon et al., 2023; Lewison et al., 2004; Reyes-Lopez et al., 2021; Mashkour et al., 2020). Pollution and climate change also pose threats globally, with details of the potential impacts highlighted in text associated with pressures PK02 and PJ12. In addition, leatherback turtle populations are also affected by direct take from humans (of either animals or eggs for human consumption or commercial products), and coastal developments affecting critical turtle habitats (e.g. human alteration of coastal environments due to construction, dredging, light pollution or beach modification) (Pheasey et al., 2021; Garzon et al., 2023; Reyes-Lopez et al., 2021). Boat strikes may also be increasing globally (Baudouin & Claro, 2020; Mashkour et al., 2020; Oros et al., 2021).
8.1: Characterisation of pressures	PJ12 Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiot, etc.) due to climate change. Evidence for current effects of climate change on related species and the subsequent impact on leatherback turtles is still limited, particularly for in UK waters. The diet of leatherback turtles consists predominantly of gelatinous zooplankton: cnidarians, ctenophores, molluscs and tunicates (salps and pyrosomes) that are infrequently found in high densities (Bailey et al., 2012). Availability of these is thought to drive the movements of leatherback turtles (Houghton et al., 2006; Botterell et al., 2020) and changes in climate affecting availability of these aggregations of food will likely

	impact distribution of leatherback turtles. Direct evidence for changes in distribution in UK waters is limited but records from strandings indicate a recent decrease of reports for this species and although the driver behind this is not clear, changes to prey availability is one hypothesis (Botterrell et al., 2020). It has been suggested that the migratory nature of marine turtles and their ability to move considerable distances in short period of times should increase their resilience to changes in prey abundance due to climate change (Poloczanska, Limpus and Hays, 2009). Leatherbacks are also able to regulate their temperature through various mechanisms, which may support the ability to widen their foraging range and reduce impact of reduction on food availability in their current range (James and Mrosovsky, 2004). Other potential impacts of climate change on the species include: changing ocean currents impacting on migration routes (Hays, 2017; Mashkour et al., 2020); rising temperatures influencing sex ratio and nesting habitat loss through sea level rise, heavier precipitation, and increased storms (Hawkes et al, 2009; Mashkour et al., 2020; Reyes-Lopez et al., 2021); changes in timing of nesting due to increasing environmental temperatures (Laloe & Hays, 2023); changes in ocean currents, heavier precipitation and increasing run off, and rising sea surface temperatures increasing occurrence of harmful algal blooms (HABs) (Reyes-Lopez et al., 2021).
9.5: List of main conservation measures	MG04 Control/eradication of illegal killing, fishing and harvesting: The Habitats Directive is transposed into UK law under the Habitat Regulations (HR) for England and Wales (as amended) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended), which make it an offence to kill, injure, capture or disturb European marine protected species. Similar legislation exists for Scottish and Northern Irish inshore waters.
9.5: List of main conservation measures	MG05 Reduce bycatch and incidental killing of non-target species: The UK is implementing the EU Technical Conservation Measures Regulation transposed into UK regulations which lays down measures concerning

incidental catches of vulnerable species in fisheries, and more generally the bycatch obligations within the Habitats Regulations. Since 2004, a dedicated bycatch monitoring programme has been in place, with both dedicated and non-dedicated onboard observers collecting data on bycatch numbers. These data inform implementation and potential effectiveness of measures such as pingers. Inshore Vessel Monitoring System (iVMS) devices are being implemented for under-12 metre fishing vessels, allowing data on latitude, longitude, course and speed to be recorded and help improve the management and sustainability of the marine environment. Legislation to make iVMS mandatory on under-12 metre vessels is expected to come into effect in 2024 in England. In Scotland, consultation on the introduction mandatory electronic tracking for under-12 metre vessels was carried out in late 2023. Legislation requiring iVMS for under-12 metre vessels operating in Welsh waters has been in place since 2022. Since February 2022 it has been mandatory for under-10 metre fishing vessels in English and Welsh waters to create and submit a catch record for every fishing trip through the Catch Recording Application (Catch App or Record your Catch). Data is collected on vessel, trip, gear, area fished and catch and can be used to inform on fishing activity by gear type and species. Furthermore, the UK Marine Wildlife Bycatch Mitigation Initiative (published August 2022) aims to improve our understanding of bycatch and entanglement of sensitive marine species through monitoring and scientific research, identify 'hotspot" or high-risk areas/gear types/fisheries in which to focus monitoring and mitigation, and develop and implement effective measures to minimise bycatch/entanglement. Currently work is progressing towards development of a bycatch risk framework across all PET species to apply all available evidence and support targeted monitoring.