European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC)

Fourth Report by the United Kingdom under Article 17

on the implementation of the Directive
from January 2013 to December 2018

Conservation status assessment for the species:

S1358 - Polecat (*Mustela putorius*)

UNITED KINGDOM

IMPORTANT NOTE - PLEASE READ

- The information in this document represents the UK Report on the conservation status of this species, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.
- It is based on supporting information provided by the geographically-relevant Statutory Nature Conservation Bodies, which is documented separately.
- The 2019 Article 17 UK Approach document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Maps showing the distribution and range of the species are included (where available).
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the UK assessments. Further underpinning explanatory notes are available in the related country-level 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 Natura 2000 coverage for Annex II species).
- The UK-level reporting information for all habitats and species is also available in spreadsheet format.

Visit the JNCC website, https://jncc.gov.uk/article17, for further information on UK Article 17 reporting.

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

NATIONAL LEVEL

1. General information

1.1 Member State	**UK**
1.2 Species code	**1358**
1.3 Species scientific name	**Mustela putorius**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Polecat

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1995-2016
2.3 Distribution map	Yes
2.4 Distribution map Method used	Based mainly on extrapolation from a limited amount of data
2.5 Additional maps	No

3. Information related to Annex V Species (Art. 14)

3.1 Is the species taken in the wild/exploited?	Yes	
3.2 Which of the measures in Art. 14 have been taken?	a) regulations regarding access to property	No
	b) temporary or local prohibition of the taking of specimens in the wild and exploitation	No
	c) regulation of the periods and/or methods of taking specimens	No
	d) application of hunting and fishing rules which take account of the conservation of such populations	No
	e) establishment of a system of licences for taking specimens or of quotas	No
	f) regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens	No
	g) breeding in captivity of animal species as well as artificial propagation of plant species	No
	h) other measures	No

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

a) Unit

b) Statistics/ quantity taken	Provide statistics/quantity per hunting season or per year (where season is not used) over the reporting period					
	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
Min. (raw, ie. not rounded)						
Max. (raw, ie. not rounded)						
Unknown	No	No	No	No	No	No

3.4. Hunting bag or quantity taken in the wild Method used

3.5. Additional information

Although the polecat's initial recovery was driven by a reduction in trapping pressure in the early 20th century (Langley & Yalden, 1977), there are still pressures from trapping and secondary rodenticide poisoning. Records from traps set for other species were received for both the 2004-2006 and 2014-2015 surveys (Birks, 2008; Croose, 2016).

BIOGEOGRAPHICAL LEVEL

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs

Atlantic (ATL)

4.2 Sources of information

England

Mathews, F., Kubasiewicz, L.M., Gurnell, J., Harrower, C., McDonald, R.A., Shore, R.F (2018). A review of the population and conservation status of British Mammals. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage.
Langley, P.J.W. and Yalden, D.W. (1977). Decline of rarer carnivores in Great Britain during 19th century. Mammal Review, 7 (3-4), 95-116.
Birks, J.D.S. (2008). The Polecat Survey of Britain 2004-2006. A report on the Polecat's distribution, status and conservation. The Vincent Wildlife Trust.
Croose, E. (2016). The Distribution and Status of the Polecats (Mustela putorius) in Britain 2014-2015. The Vincent Wildlife Trust.
Birks, J.D.S. (2015). Polecats. Whittet Books Ltd.
Harris, S.J., Massimino, D., Newson, S.E., Eaton, M.A., Balmer, D.E., Noble, D.G., Noble, D.G., Musgrove, A.J., Gillings, S., Proctor, D. and Pearce-Higgins, J.W. (2015). The Breeding Bird Survey 2014. BTO Research Report 673. British Trust for Ornithology.

Scotland

Mathews, F., Kubasiewicz, L.M., Gurnell, J., Harrower, C., McDonald, R.A., Shore, R.F (2018). A review of the population and conservation status of British Mammals. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage.

Langley, P.J.W. and Yalden, D.W. (1977). Decline of rarer carnivores in Great Britain during 19th century. Mammal Review, 7 (3-4), 95-116.
Birks, J.D.S. (2008). The Polecat Survey of Britain 2004-2006. A report on the Polecat's distribution, status and conservation. The Vincent Wildlife Trust.
Croose, E. (2016). The Distribution and Status of the Polecats (Mustela putorius) in Britain 2014-2015. The Vincent Wildlife Trust.
Birks, J.D.S. (2015). Polecats. Whittet Books Ltd.
Costa, Mafalda, Fernandes, C., Birks, J. D. S., Kitchener, A. C., Santos-Reis, M. and Bruford, Michael William (2013) The genetic legacy of the 19th-century decline of the British polecat: evidence for extensive introgression from feral ferrets. Molecular Ecology 22 (20) , pp. 5130-5147. 10.1111/mec.12456
Wales
Birks, JDS. 2008. The polecat survey of Britain 2004-2006. Vincent Wildlife Trust, Ledbury
Birks, JDS. 2015. Polecats. Whittet Books Ltd.
Birks J, Kitchener A. 1999. Ecology of the polecat in lowland England. The distribution and status of the polecat Mustela putorius in Britain in the 1990s. London.
Costa M, Fernandes C, Birks JDS, Kitchener AC, Santos-Reis M, & Bruford MW. 2013.The genetic legacy of the 19th-century decline of the British polecat: evidence for extensive introgression from feral ferrets. Molecular Ecology, 22, 5130-5147.
Croose E. 2016. The distribution and status of the polecat (Mustela putorius) in Britain 2014-2015. The Vincent Wildlife Trust.
Langley PJW & Yalden DW. 1977. The decline of the rarer carnivores in Great Britain during the nineteenth century. Mammal Review 7: 95-116.
Mathews F, Kubasiewicz LM, Gurnell J, Harrower C, McDonald RA, Shore RF. 2018. A review of the population and conservation status of British Mammals. A report by The Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough. ISBN 978-1-78354-494-3.
Sainsbury KA, Shore RF, Schofield H, Croose E, Pereira MG, Sleep D, Kitchener AC, Hantke G, McDonald RA. 2018. Long-term increase in secondary exposure to anticoagulant rodenticides in European polecats Mustela putorius in Great Britain. Environmental Pollution 236: 689-698.

5. Range

5.1 Surface area (km²)	109229	
5.2 Short-term trend Period	2013-2018	
5.3 Short-term trend Direction	Increasing (+)	
5.4 Short-term trend Magnitude	a) Minimum	b) Maximum
5.5 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data	
5.6 Long-term trend Period		
5.7 Long-term trend Direction		
5.8 Long-term trend Magnitude	a) Minimum	b) Maximum
5.9 Long-term trend Method used		
5.10 Favourable reference range	a) Area (km²)	109229
	b) Operator	

	c) Unknown	
	d) Method	The FRR has changed since 2013. The new value is considered to be large enough to support a viable population and no lower than the range estimate when the Habitats Directive came into force in the UK. For further information see the 2019 Article 17 UK Approach document. The 2013 FRR value has been revised and is equal to the current range. The current range surface area has been calculated using the method outlined in Mathews et al. (2018) and is based on presence data collected between 1995-2016. Areas that contain very isolated records may not have been included in the area of distribution. The new, more robust method of calculating range has reduced estimated range size for this species since 2013. This does not represent a real reduction in range.
5.11 Change and reason for change in surface area of range	Genuine change Improved knowledge/more accurate data Use of different method	
	The change is mainly due to:	Use of different method
5.12 Additional information	Short term trend in range has been assessed by using the 2019 distribution data and the 2013 method for calculating range and comparing the result with range surface area in 2013. For further information see the 2019 Article 17 UK Approach document and country assessments.	

6. Population

6.1 Year or period	1995-2016	
6.2 Population size (in reporting unit)	a) Unit	number of individuals (i)
	b) Minimum	67945
	c) Maximum	99483
	d) Best single value	83600
6.3 Type of estimate	95% confidence interval	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	
	b) Minimum	
	c) Maximum	
	d) Best single value	
6.5 Type of estimate		
6.6 Population size Method used	Based mainly on extrapolation from a limited amount of data	
6.7 Short-term trend Period	2004-2016	
6.8 Short-term trend Direction	Increasing (+)	

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6.9 Short-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval	
6.10 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data	
6.11 Long-term trend Period		
6.12 Long-term trend Direction		
6.13 Long-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval	
6.14 Long-term trend Method used		
6.15 Favourable reference population (using the unit in 6.2 or 6.4)	a) Population size b) Operator c) Unknown d) Method	83600 with unit number of individuals (i) The FRP has changed since 2013. The new value is considered to be large enough to support a viable population and no less than the population estimate when the Habitats Directive came into force in the UK. For further information see the 2019 Article 17 UK Approach document. The FRP has been changed to the new best estimate of population size calculated in Mathews et al. (2018), plus an additional Scottish population estimate based on Birks (2008) and Birks et al. (1999). The previous FRP was thought to be an underestimate of the population currently and when the Habitats Directive came into force in the UK
6.16 Change and reason for change in population size	Genuine change Improved knowledge/more accurate data Use of different method The change is mainly due to:	 Genuine change
6.17 Additional information	Estimates of population size for England and Wales have been taken from Mathews et. al., (2018) and are considered to be more robust than the estimates used in 2013. The estimate from Scotland is based on previous estimates (Birks 2008, Birks et al 1999). Although there has been a change in methodology, the current upper confidence limit for the population estimate represents a significant increase in population size which appears to reflect a genuine increase. The current population is considered to be approximately equal to the FRP.	

7. Habitat for the species

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7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (for long-term survival)?	Yes
	b) Is there a sufficiently large area of unoccupied habitat of suitable quality (for long-term survival)?	
7.2 Sufficiency of area and quality of occupied habitat Method used	Based mainly on extrapolation from a limited amount of data	
7.3 Short-term trend Period	2004-2015	
7.4 Short-term trend Direction	Stable (0)	
7.5 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data	
7.6 Long-term trend Period		
7.7 Long-term trend Direction		
7.8 Long-term trend Method used		
7.9 Additional information	The habitable area has been taken from Mathews et. al., (2018), which, given the generalist nature of this species, defined the area of suitable habitat as the total range size minus the area of urban and garden habitats.	

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Conversion from one type of agricultural land use to another (excluding drainage and burning) (A02)	M
Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.) (A05)	H
Use of plant protection chemicals in agriculture (A21)	H
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	M
Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions) (F01)	M
Illegal shooting/killing (G10)	H
Poisoning of animals (excluding lead poisoning) (G13)	H
Other invasive alien species (other then species of Union concern) (I02)	M

Threat	Ranking
Conversion from one type of agricultural land use to another (excluding drainage and burning) (A02)	M
Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.) (A05)	H
Use of plant protection chemicals in agriculture (A21)	H
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	M

Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions) (F01)	M
Illegal shooting/killing (G10)	H
Poisoning of animals (excluding lead poisoning) (G13)	H
Other invasive alien species (other then species of Union concern) (I02)	M

8.2 Sources of information

8.3 Additional information

9. Conservation measures

9.1 Status of measures

a) Are measures needed? No

b) Indicate the status of measures

9.2 Main purpose of the measures taken

9.3 Location of the measures taken

9.4 Response to the measures

9.5 List of main conservation measures

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters

a) Range	Good
b) Population	Good
c) Habitat of the species	Good

10.2 Additional information

Future trend in Range is Positive - increasing <=1% (one percent or less) per year on average; Future trend in Population is Positive - increasing <=1% (one percent or less) per year on average; and Future trend in Habitat for the species is Overall stable. For further information on how future trends inform the Future Prospects conclusion see the 2019 Article 17 UK Approach document.

11. Conclusions

11.1. Range	Favourable (FV)
11.2. Population	Favourable (FV)
11.3. Habitat for the species	Favourable (FV)
11.4. Future prospects	Favourable (FV)
11.5 Overall assessment of Conservation Status	Favourable (FV)
11.6 Overall trend in Conservation Status	Improving (+)

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11.7 Change and reasons for change in conservation status and conservation status trend

a) Overall assessment of conservation status

No change

The change is mainly due to:

b) Overall trend in conservation status

No change

The change is mainly due to:

11.8 Additional information

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

Conclusion on Population reached because: (i) the short-term trend direction in Population size is increasing; and (ii) the current Population size is approximately equal to the Favourable Reference Population.

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

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

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

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

Overall assessment of conservation status is the same as in 2013.

Overall trend in conservation status was not reported for this species in 2013. However, from the information available the overall trend would have been increasing in 2013 and so there has been no change since the last reporting round.

12. Natura 2000 (pSCIs, SCIs and SACs) coverage for Annex II species

12.1 Population size inside the pSCIs, SCIs and SACs network (on the biogeographical/marine level including all sites where the species is present)

a) Unit

b) Minimum

c) Maximum

d) Best single value

12.2 Type of estimate

12.3 Population size inside the network Method used

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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 Additional information

13. Complementary information

13.1 Justification of % thresholds for trends

13.2 Trans-boundary assessment

13.3 Other relevant Information

Distribution Map

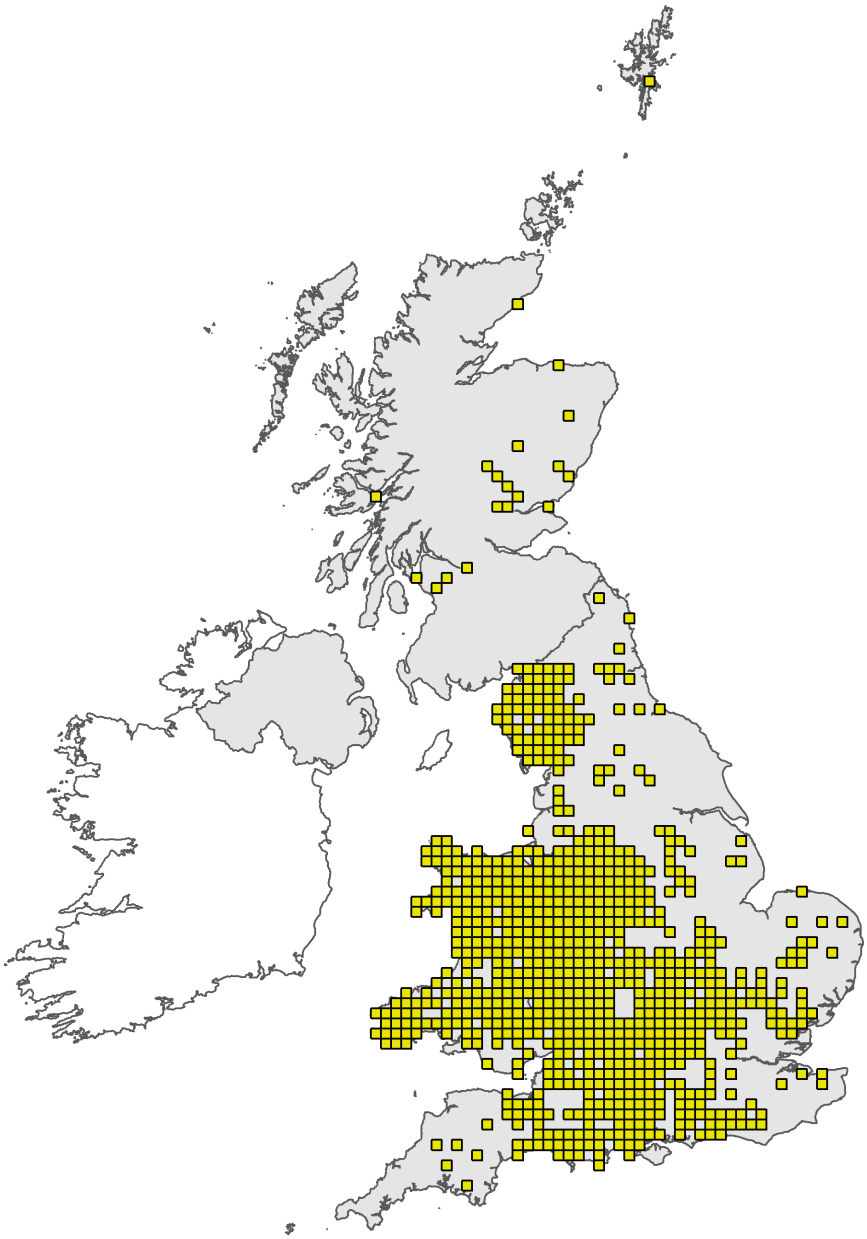

Figure 1: UK distribution map for S1358 - Polecat (*Mustela putorius*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available species records within the current reporting period. For further details see the 2019 Article 17 UK Approach document.

Range Map

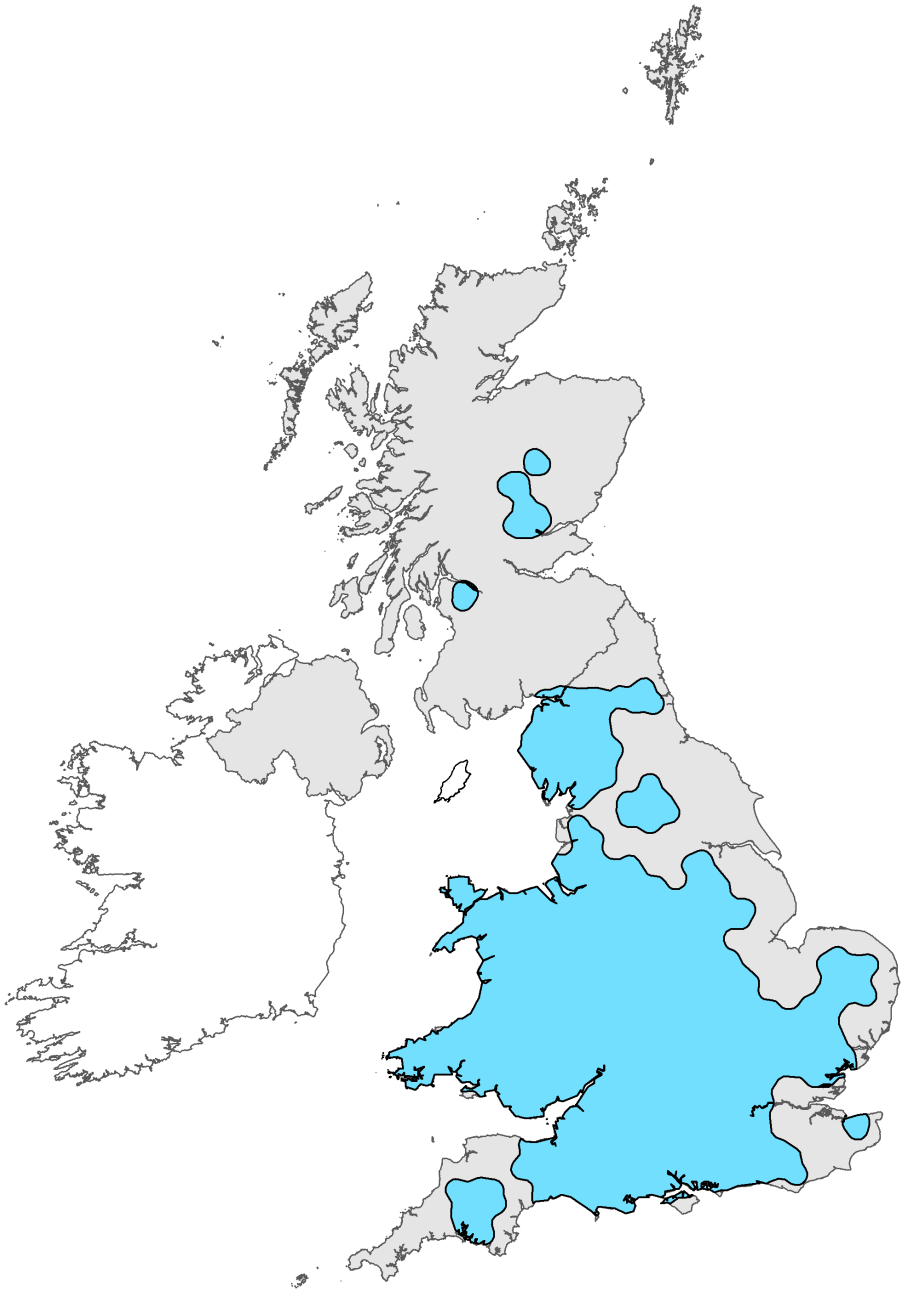

Figure 2: UK range map for S1358 - Polecat (*Mustela putorius*).Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The range map has been produced by The Mammal Society applying a range mapping tool as outlined in Matthews et al. (2018), to the 10km grid square distribution map presented in Figure 1. The alpha value for this species was 20km. For further details see the 2019 Article 17 UK Approach document.