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

Supporting documentation for the
conservation status assessment for the species:

S1357 - Pine marten (*Martes martes*)

SCOTLAND

IMPORTANT NOTE - PLEASE READ

- The information in this document is a country-level contribution to 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.
- The 2019 Article 17 UK Approach document provides details on how this supporting information was used to produce the UK Report.
- The UK Report on the conservation status of this species is provided in a separate document.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Explanatory notes (where provided) by the country are included at the end. These provide an audit trail of relevant supporting information.
- 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; (iii) the field was not relevant to this species (section 12 Natura 2000 coverage for Annex II species) and/or (iv) the field was only relevant at UK-level (sections 9 Future prospects and 10 Conclusions).
- For technical reasons, the country-level future trends for Range, Population and Habitat for the species are only available in a separate spreadsheet that contains all the country-level supporting information.
- The country-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 (Scotland information only)**
1.2 Species code	**1357**
1.3 Species scientific name	**Martes martes**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Pine marten

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?	No	
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

BIOGEOGRAPHICAL LEVEL

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs

Atlantic (ATL)

4.2 Sources of information

Birks. J.D.S., Messenger, J.E. & Halliwell, E. 2005. Diversity of den sites used by pine martens Martes martes: a response to the scarcity of arboreal cavities? Mammal Review 35: 313-320 http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2907.2005.00068.x/abstract.

Langley, P.J.W., & Yalden, D.W. 1977. The decline of the rarer carnivores in Great Britain during the nineteenth century. Mammal Review, 7: 95-116 http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2907.1977.tb00363.x/abstract

Balharry, D. , Jeffries, D.J. and Birks, J.D.S. (2008). Pine marten pp 447-455 in Harris, S and Yalden, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton. 799pp

Caryl, F.M. (2008). Pine marten diet and habitat use within a managed coniferous forest, PhD, University of Stirling.

Croose, E., Birks, J.D.S., Schofield, H.W. & O'Reilly, C. 2014. Distribution of the pine marten (Martes martes) in southern Scotland in 2013. Scottish Natural Heritage Commissioned Report No. 740.

Croose, E., Birks, J.D.S. & Schofield, H.W. 2013. Expansion zone survey of pine marten (Martes martes) distribution in Scotland. Scottish Natural Heritage Commissioned Report No. 520.

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.

Kubasiewicz, L.M. (2014). Monitoring European pine martens (Martes martes) in Scottish forested landscapes, PhD, University of Stirling.

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5. Range

5.1 Surface area (km²)		
5.2 Short-term trend Period		
5.3 Short-term trend Direction	Increasing (+)	
5.4 Short-term trend Magnitude	a) Minimum	b) Maximum
5.5 Short-term trend Method used		
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) b) Operator c) Unknown d) Method	
5.11 Change and reason for change in surface area of range	Genuine change Improved knowledge/more accurate data The change is mainly due to:	Genuine change
5.12 Additional information		

6. Population

6.1 Year or period	2016-2017	
6.2 Population size (in reporting unit)	a) Unit b) Minimum c) Maximum d) Best single value	number of individuals (i) 1600 8900
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	2007-2018	
6.8 Short-term trend Direction	Increasing (+)	
6.9 Short-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval	

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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
6.16 Change and reason for change in population size	Genuine change Improved knowledge/more accurate data The change is mainly due to: Genuine change
6.17 Additional information	

7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (to maintain the species at FCS)?	Yes
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	
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	2007-2018	
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		

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Logging without replanting or natural regrowth (B05)	M
Clear-cutting, removal of all trees (B09)	H
Forest management reducing old growth forests (B15)	M
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	M

Illegal shooting/killing (G10)	H
Poisoning of animals (excluding lead poisoning) (G13)	M

Threat	Ranking
Logging without replanting or natural regrowth (B05)	M
Clear-cutting, removal of all trees (B09)	H
Forest management reducing old growth forests (B15)	M
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	M
Illegal shooting/killing (G10)	H
Poisoning of animals (excluding lead poisoning) (G13)	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

b) Population

c) Habitat of the species

10.2 Additional information

11. Conclusions

11.1. Range

11.2. Population

11.3. Habitat for the species

11.4. Future prospects

11.5 Overall assessment of Conservation Status

11.6 Overall trend in Conservation Status

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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	

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	
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

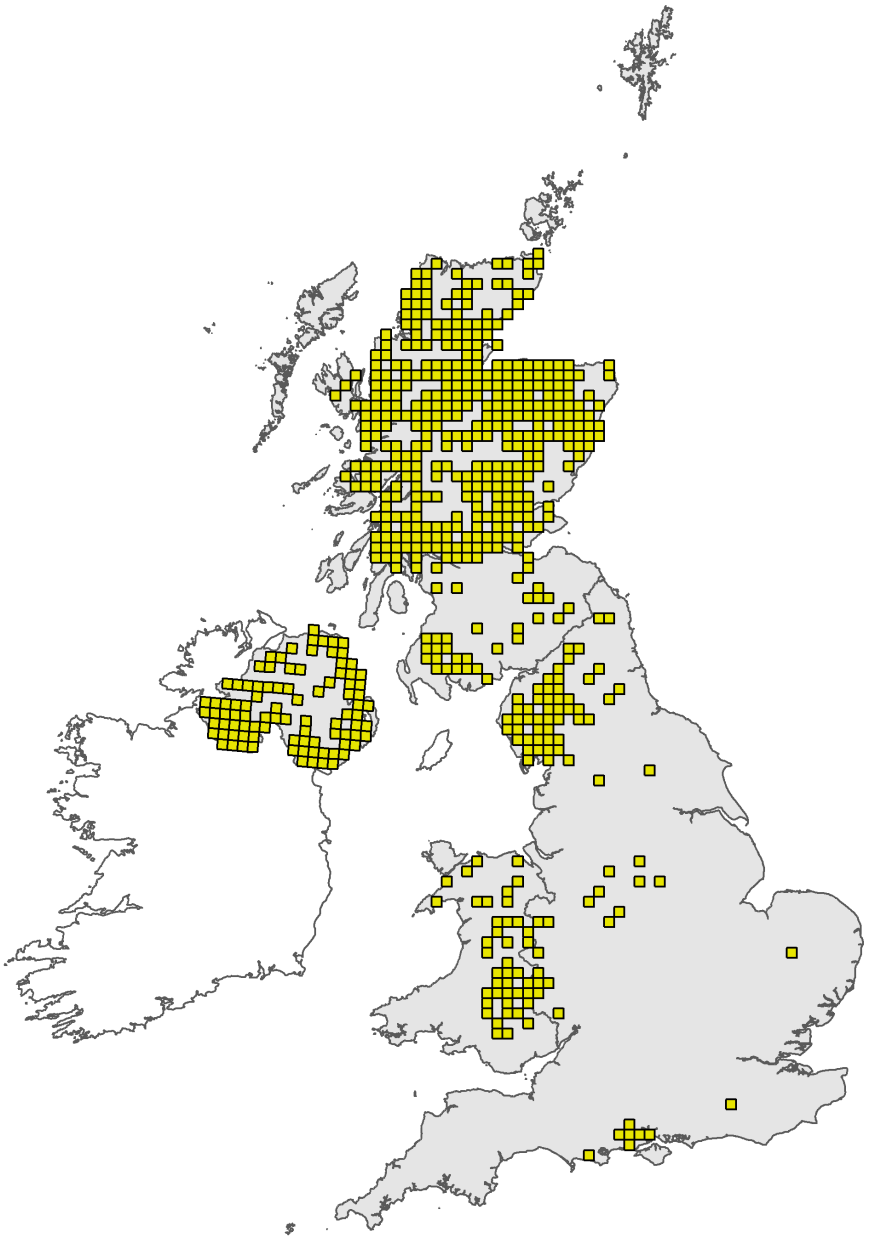

Figure 1: UK distribution map for S1357 - Pine marten (*Martes martes*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

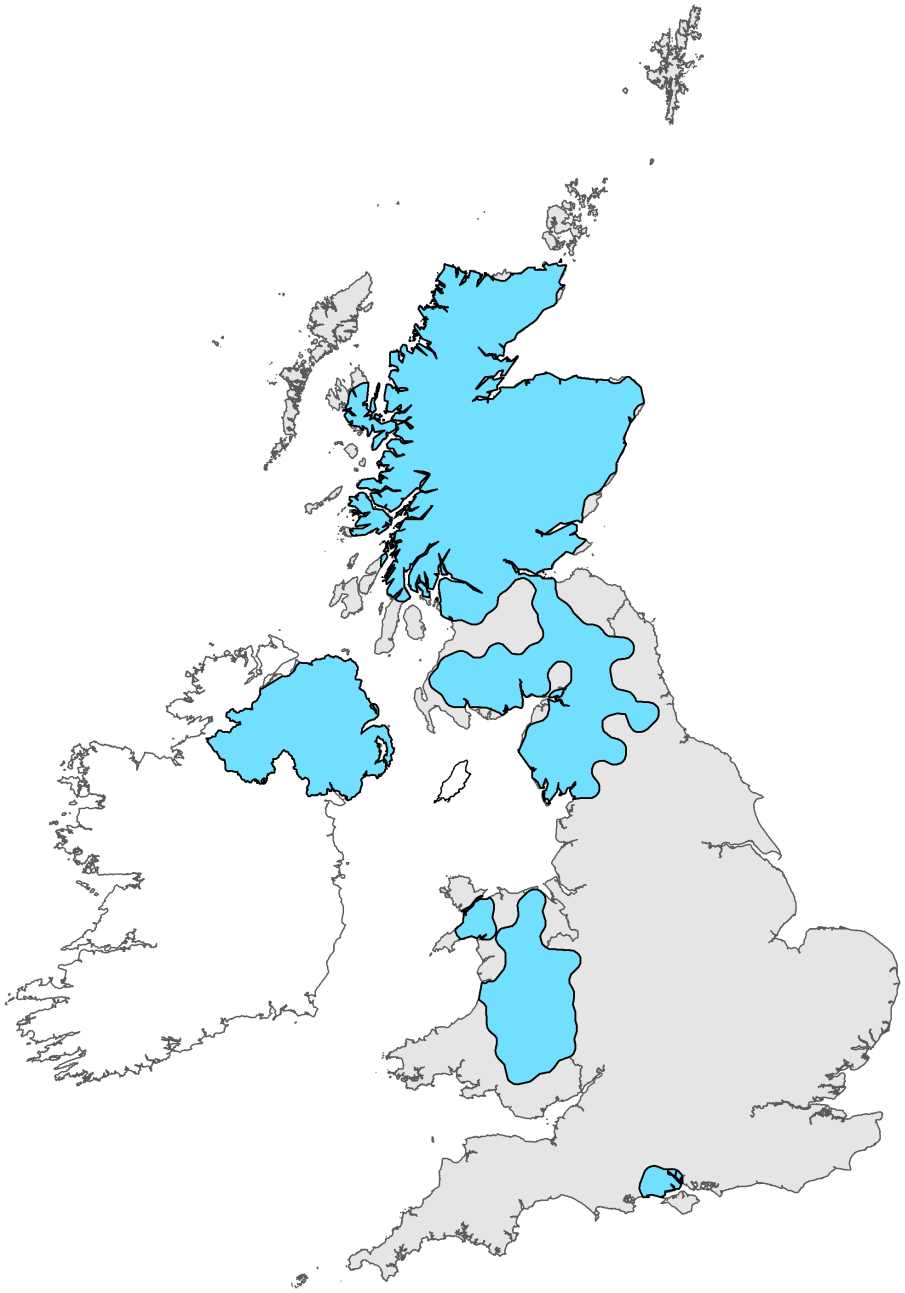

Figure 2: UK range map for S1357 - Pine marten (*Martes martes*).Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.

Explanatory Notes

Species name: Martes martes (1357)

Field label	Note
1.5 Common name	Pine martens were once prevalent throughout mainland Britain. By the late 19th century, a combination of habitat loss and persecution resulted in the survival of only a few populations in north west Scotland (Langley and Yalden, (1977), Ritchie (1921). Habitat improvement and legal protection initially through the Wildlife & Countryside Act (1981) as amended, has led to the partial recovery of the pine martens range in Scotland over the last few decades (Croose et al., 2013, Croose et al., 2014) combined with re-introductions in Dumfries & Galloway and releases elsewhere.

Species name: Martes martes (1357) Region code: ATL

Field label	Note
5.3 Short term trend; Direction	There has been substantial and sustained increase in the range of pine martens in Scotland since the 1990s, as docmented in Croose et al (2013) and Croose et al (2014).
5.11 Change and reason for change in surface area of range	Range 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 range has been taken from Mathews et al (2018), whereby an alpha hull value of 20km was drawn around the presence records, which represented the best balance between the inclusion of unoccupied sites (i.e. where records are sparse but close enough for inclusion) and the exclusion of occupied areas due to gaps in the data (i.e. where records exist but are too isolated for inclusion). An additional 10km buffer was addesd to the final hull polygon to provide smoothing to the hull and to ensure that the hull covered the areas recorded rather than intersecting them. This differs from the approach taken in 2013 and 2007 whereby a 45km alpha hull value was used for all species with a starting range unit of individual 10km squares. The new method has led to much finer detail maps being produced underpinned by data gathered at a much finer resolution.
6.2 Population size	A revised population estimate of 3,700 is given in Mathews et al (2018), with the upper and lower confidence limits as shown in columns 6.2b and 6.2c. This estimate is very similar to previous estimates including that given in Harris et al (1995), but given the substantial increase in range since the 1995 estimate, the value of 3,700 is considered conservative and Mathews et al (2018) note that the true figure may be nearer the upper confidence limit value of 8,900.
6.8 Short term trend; Direction	An increase in the population is inferred due to substantial increase in the range of pine martens since the 1990s as reported in Croose et al (2013) and Croose et al (2014).
6.16 Change and reason for change in population size	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 in range. The population is expected to increase as the range increases.
7.1 Sufficiency of area and quality of occupied habitat	There is ample available habitat for pine martens, as demonstrated by the progressive expansion of the species south and eastwards since the 1990s - see Croose et al (2013) and Croose et al (2014).
7.4 Short term trend; Direction	The trend in available habitat is assessed as stable although, given the overall trend towards more native woodland regeneration, there could actually be an increase in the available habitat.
8.1 Characterisation of pressures/ threats	Based on anecdotal information, experience and local knowledge. Many martens are found dead on roads and assumed to be road traffic accidents, but there are no reliable data.

10.1 Future prospects of parameters	Previous increases of <=1% per year on average are indicated for both range and population, but the actual rate of increase for both parameters is not known with certainty. Further increases are expected in future, based on this trend.