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

Supporting documentation for the
Third Report by the United Kingdom under
Article 17

on the implementation of the Directive
from January 2007 to December 2012
Conservation status assessment for

Species:

S1357 - Pine marten (*Martes martes*)
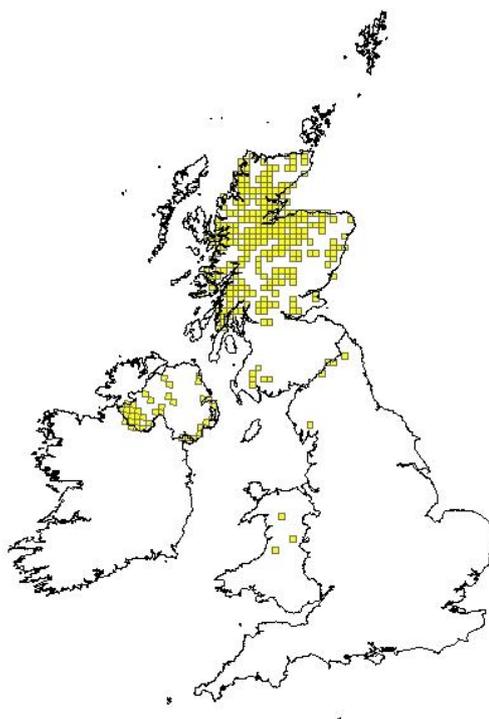

IMPORTANT NOTE – PLEASE READ

- The country-level reporting information contained in this document is a <u>contribution</u> to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Natural England** and refers <u>only</u> to the state of the habitat/species in **England**   - it does <u>not</u> constitute an assessment for the whole of the UK.
- The Article 17 UK Approach document provides details on how this information has been used and, combined with information supplied by other Statutory Nature Conservation Bodies
- The format of the document is closely aligned to that set out by the European Commission for Member State reporting – as a result, some of the fields are not applicable at a country-level and have deliberately been left blank – in addition, the content of most fields is constrained by the EC reporting categories.

**Reporting format on the 'main results of the surveillance under Article 11'
for Annex II, IV & V species**

Field name	Brief explanations	
0.2 Species	**0.2.1 Species code**	S1357
	0.2.2 Species scientific name	*Martes martes*
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	**Pine marten**

1.1 Maps			
1.1.1 Distribution map		**Sensitive**	**False**

1.1.2 Method used - map	**Complete survey/Complete survey or a statistically robust estimate**
	Only distribution points from corpses or DNA-verified scats are reported. This differs from the previous reporting round, when sightings were also included. DNA-verification of scats is now accepted as the most reliable survey method for very low density populations (Messenger et al 2010).
	Collation of sightings records from 1996-2007 (Birks & Messenger 2010) suggests that the distribution of pine martens in England could be much wider. However, high quality sightings reports are now usually followed up with a scat hunt in an attempt to provide DNA-verified evidence of the

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	presence of pine martens. More general scat hunts have also been completed in areas with a high concentration of sightings between 2008 and 2009 (Messenger et al 2010) but to date none of these have returned positive records. Method used for distribution is recorded as '3', as only verified records are used, with no extrapolation or modelling. Data quality considered to be 'moderate' but further survey work is needed to clarify the distribution of the species.
1.1.3 Year or period	**2007-2012**
	The previous report used a date range of 1990-2006. The date range used in this report has been selected to reflect the period when DNA-verification of scats became established as a survey technique.
1.1.4 Additional distribution map	**False**
1.1.5 Range map	

2.1 Biogeographical region & marine regions	**ATL**
2.2 Published sources	**"BIRKS, J. & MESSENGER, J. 2010. Evidence of pine martens in England and Wales 1996-2007. The Vincent Wildlife Trust, Ledbury.** **BIRKS, J.D.S., MESSENGER, J.E., BRAITHWAITE, A.C., DAVIDSON, A., BROOKES, R.C. & STRACHAN, C. 2004. Are scat surveys a reliable method for assessing distribution and population status of pine martens? In HARRISON, D.J., FULLER, A.K. & PROULX, G. (eds). Martens and fishers (Martes) in human-altered environments: an international perspective. Pages 235-252. Springer Science, New York, USA.** **BRIGHT, P. 2001. Should Pine Marten's be Re-introduced to England? In: Poland Bowen, C. (ed.) 2003 Conference Proceedings 2001-2002: The Return of the Native – The Reintroduction of Native Species Back into their Natural Habitat. p10. People's Trust for Endangered Species/Mammal Trust UK.** **BRIGHT, P.W. & SMITHSON, T.J. 1997. Species Recovery Programme for the Pine Marten in England: 1995-96. English Nature Research Reports 240: 1-64. English Nature, Peterborough** **CROSSE, E. 2011. The Vincent Wildlife Trust. Final Report on the Vincent Wildlife Trusts Prospects for Pine Martens Project. October 2008 - April 2011.** **JORDAN, N. 2011. A strategy for restoring the pine marten to England and Wales. The Vincent Wildlife Trust, Ledbury.** **JORDAN, N.R., MESSENGER, J., TURNER, P., BIRKS, J.D.S., CROOSE, E. & O'REILY, C., 2012. Molecular comparison of historical and contemporary pine marten (Martes martes) populations in the British Isles: evidence of differing origins and fates, and implications for conservation management. Conservation Genetics, 13 (5), pp. 1195-1212.** **LANGLEY, P.J.W., & YALDEN, D.W. 1977. The decline of rarer**

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carnivores in Great Britain during the nineteenth century. Mammal Review, 7: 95-116

MACDONALD, D.W. & BAKER S. 2005. The state of Britain's Mammals 2005. Mammals Trust UK/WildCRU.

MACDONALD, D.W. & TATTERSALL, F.T. 2001. Britain's Mammals: The Challenge for Conservation. Mammals Trust UK/WildCRU.

MESSENGER, J., CROOSE, E., PETER TURNER, P. & O'REILLY, C. 2010. The Vincent Wildlife Trust and Waterford Institute of Technology Pine Marten Scat DNA Survey of England and Wales 2008-2009. Vincent Wildlife Trust, Ledbury.

STRACHAN, C., JEFFERIES, D.J. & CHANIN, P.R.F. 1996. Pine marten survey of England and Wales 1987–1988. Joint Nature Conservation Committee.

BATTERSBY, J (ed.) & TRACKING MAMMALS PARTNERSHIP. 2005. UK Mammals: Species Status and Population Trends. Joint Nature Conservation Committee/Tracking Mammals Partnership.

QUINE et al (2011). Chapter 8 - Woodlands. In: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP -WCMC, Cambridge. Http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx

HARRIS, S., MORRIS, P., WRAY, S. AND YALDEN, D. 1995. A Review of British Mammals. Joint Nature Conservation Committee

VELANDER, K.A. 1983. Pine marten survey of Scotland, England and Wales 1980-1982. Vincent Wildlife Trust, London.

NBN data"

2.3 Range	
2.3.1 Surface area Range	
2.3.2 Method used Surface area of Range	**Estimate based on expert opinion with no or minimal sampling**
	Only distribution points from corpses or DNA-verified scats are reported. This differs from the previous reporting round, when sightings were also included. DNA-verification of scats is now accepted as the most reliable survey method for very low density populations (Messenger et al 2010).
	Collation of sightings records from 1996-2007 (Birks & Messenger 2010) suggests that the distribution of pine martens in England could be much wider. However, high quality sightings reports are now usually followed up with a scat hunt in an attempt to provide DNA-verified evidence of the presence of pine martens. More general scat hunts have also been completed in areas with a high concentration of sightings between 2008 and 2009 (Messenger et al 2010) but to date none of these have returned positive records.

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	Method used for distribution is recorded as '3', as only verified records are used, with no extrapolation or modelling. Data quality considered to be 'moderate' but further survey work is needed to clarify the distribution of the species.
2.3.3 Short-term trend Period	
	The decision to include only records with physical validation (corpses, DNA) has resulted in an apparent loss of range. This is clearly due to the change in the method used. The conservation status of the species in both countries remains very poor and the true extent of pine martens in England is unknown due to their likely very low density making detection difficult. The decision to use only records from corpses or DNA verified scats means that it is not possible to report a trend.
2.3.4 Short term trend Trend direction	**unknown**
	Only distribution points from corpses or DNA verified scats have been included, which differs from the previous reporting round which also included sightings. This appears to show an apparent contraction in range. DNA verification of scats is now accepted as the most reliable survey method for very low density populations. Further survey work is needed to clarify the distribution of the species.
2.3.5 Short-term trend Magnitude	**a) Minimum**
	Unknown
	b) Maximum
	Unknown
2.3.6 Long-term trend Period	
	Unknown, due to lack of data.
2.3.7 Long-term trend Trend direction	**unknown**
	MESSENGER, J., CROOSE, E., TURNER, P & O'REILLY, C. 2010. The Vincent Wildife Trust and Waterford Institute of Technology Pine Marten Scat DNA Survey of England and Wales 2008-2009. Vincent Wildife Trust, Ledbury STRACHAN, C., JEFFERIES, D.J. & CHANIN, P.R.F. 1996. Pine marten survey of England and Wales 1987-1988. joint NATURE Conservation Committee Velander's (1983) survey revealed no evidence of populations in England and Wales. However, a field sign survey (without DNA-validation of scats) in 1987-88 found evidence of M. martes at several locations in north Wales and northern England (Strachan et al. 1996). Despite persistent sightings of pine martens in these areas since 1995 (Birks and Messenger 2010), a DNA-validated scat-based survey of 10 areas in 2008-9 failed to find any unambiguous evidence of pine marten presence (Messenger et al., 2010). However, further survey work located two DNA-positive scats in the north of England (VWT, 2011).

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2.3.8 Long-term trend Magnitude	a) Minimum	
Optional		
	b) Maximum	
2.3.9 Favourable reference range	a) Value in km²	
	b) Operator for FRR	
	c) FRR is unknown (indicated by "true")	False
	d) Method used to set FRR	
2.3.10 Reason for change Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to…	a) Genuine change?	False
	b) Improved knowledge/more accurate data?	True
	Only distribution points from corpses or DNA-verified scats have been reported. This differs from the previous reporting round, when sightings were also included. DNA-verification of scats is now accepted as the most reliable survey method for very low density populations. The status of M. martes in England has been the subject of continuing debate, with lack of clarity about the validity of records. The introduction of DNA-testing should help to resolve this issue.	
	c) Use of different method (e.g. "Range tool")?	True
	Only distribution points from corpses or DNA-verified scats have been reported. This differs from the previous reporting round, when sightings were also included. DNA-verification of scats is now accepted as the most reliable survey method for very low density populations. The status of M. martes in England has been the subject of continuing debate, with a lack of clarity about the validity of records. The introduction of DNA-testing should help to resolve this issue.	

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2.4 Population		
2.4.1 Population size estimation (using individuals or agreed exceptions where possible)	**a) Unit**	**number of individuals**
	b) Minimum	
	c) Maximum	
2.4.2 Population size estimation (using population unit other than individuals) Optional *(if 2.4.1 filled in)*	**a) Unit**	
	b) Minimum	
	c) Maximum	
2.4.3 Additional information on population estimates / conversion Optional	**a) Definition of "locality"**	
	b) Method to convert data	
	c) Problems encountered to provide population size estimation	**Pine marten population sizes can be estimated using pine marten occurence and density estimates in different habitat tyoes. However, the likely very low M. martes density and the small number of verified records, means that these methods cannot be applied.**
2.4.4 Year or period	**2012-**	
2.4.5 Method used Population size	**Absent data**	
2.4.6 Short-term trend Period	**2001-2012**	
2.4.7 Short-term trend Trend direction	**unknown** The likely very low density of pine martens in England makes it very difficult to estimate population sizes.	
2.4.8 Short-term trend Magnitude	**a) Minimum**	
	b) Maximum	

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	c) Confidence interval	
2.4.9 Short-term trend Method used	**Absent data**	
2.4.10 Long-term trend – Period		
2.4.11 Long-term trend Trend direction	**unknown**	
2.4.12 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used	**0**	
2.4.14 Favourable reference population	**a) Number of individuals/agreed exceptions/other units**	
	b) Operator	
	c) FRP is unknown indicated by "true"	**False**
	d) Method used to set FRP	**Population size estimates in England are unknown, though likely to be very low. Birks (unpublished data, 2004) assumed that there are 120 M. martes in England, although improved verification of records suggests these figures are probably an overestimate.**

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2.4.15 Reason for change Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to:	a) Genuine change?	False
	The status of M. martes is unclear.	
	b) Improved knowledge/more accurate data?	True
	c) Use of different method (e.g. "Range tool")?	False

2.5 Habitat for the species		
2.5.1 Area estimation	**200**	
	M. martes is found primarily in deciduous and coniferous forest and occassionally rocky areas (where woodland is scarce or fragmented); it strongly avoids open areas. It can also live alongside human habitation, occupying wood stacks, farm buildings and the lofts of dwelling houses. Scarcity of arboreal cavities may result in a shortage of suitable den sites and could in turn limit populations (Balharry et al 2008). The figure of 2km here represents the 1km squares where the pine marten DNA analysed scats have been verified and is not a true reflection of the area that they are likely to occupy in the immediate vicinity wher the scats were found. It is unknown whether the amount of habitat in the UK is sufficient to support a viable population of the species.	
2.5.2 Year or period	**2007-2012**	
2.5.3 Method used Habitat for the species	**Estimate based on expert opinion with no or minimal sampling**	
2.5.4 Quality of the habitat	**a) Habitat quality**	**Unknown**
	b) Assessment method	**M. martes shows no clear preference for coniferous over deciduous woodland or mature native forest over commercial plantations; diversity of structure and availability of prey appear to be more important (Balharry et al, 2008).** **It is not currently possible to assess the quality of the habitat available to the species.**

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2.5.5 Short-term trend Period		
2.5.6 Short-term trend Trend direction	**unknown**	
2.5.7 Long-term trend Period		
2.5.8 Long-term trend Trend direction		
2.5.9 Area of suitable habitat for the species	**a) Value in km²**	**7570**
	Total ancient woodland 341,000ha, Total semi-natural woodland 416,000ha. Pine marten are adapted to exploit structurally complex, 3D habitats, especially woodland, though they can exist in more open ground provided there are some pockets of tree or scrub cover i.e. The Burren, Ireland. Woodland area in the UK currently amounts to 2.84 million hectraes and approximately 9% of England is wooded. Atlantic woodland dominated by oak and birch occurs in wetter and cooler noirth and west areas, with Scottish native Scots pine woodland on nutrient-poor acid soils. In the south and east of the UK, the dominant native woodland habitat is mixed lowland broadleaved woodland consisting of oak and ash with localised beech and hornbeam. Wet woodlands of alder, willows and birch occur in sites with regularly wet soils. The area of suitable habitat for the pine marten has been calculated from the extent of ancient and semi-natural woodland present in England, Forestry Commission (2009a) based on data from Pryor and Peterken (2001) and doesn't necessarily include coniferous woodland which may be available for the pine marten to use.	
	b) Absence of data indicated as '0'	
2.5.10 Reason for change Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to	**a) Genuine change?**	**False**
	b) Improved knowledge/more accurate data?	**False**
	c) Use of different method (e.g. "Range tool")?	**False**

2.6 Main pressures

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a) Pressure	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
B02: Forest and Plantation management & use	M	
D01: Roads, paths and railroads	M	
F03: Hunting and collection of wild animals (terrestrial)	M	
K03: Interspecific faunal relations	M	
K05: reduced fecundity/ genetic depression	M	

The unclear status of M. martes means that pressures cannot easily be assessed. However, Jordan (2011) has considered the factors likely to be limiting pine marten recovery in England.

Pine martens need habitat that provides sufficient foraging and breeding/resting sites. Pine martens have a relatively catholic diet and have adapted to a range of habitat types and associated prey availability. However, the availability of suitable arboreal den sites and hence removal of dead and dying trees, may be a limiting factor (Birks et al 2005).

Individuals may well be at risk of road traffic accidents where territories encompass busy highways.

The historical decline in pine marten populations has been attributed to persecution by gamekeepers. It has been suggested that competition with the more generalist fox (Vulpes vulpes) may be a factor in the lack of recovery of pine marten populations and thus increased fox numbers resulting from habitat changes and insufficient fox control may also be a pressure on remnant pine marten populations.

Fragmentation and clearance of woodland may have benefited fox populations resulting in greater competition with pine martens (Jordan 2011).

The probable very low density of pine martens is likely to have resulted in reduced genetic diversity and may be limiting the ability of the population to recover.

In the absence of more reliable information on the factors limiting pine marten populations in England, all pressures have been ranked as 'medium importance'.

2.6.1 Method used – Pressures	based only on expert judgements

2.7 Threats		
a) Threat	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
B02: Forest and Plantation management & use	M	
D01: Roads, paths and railroads	M	
F03: Hunting and collection of wild animals (terrestrial)	M	

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K03: Interspecific faunal relations	M	
K05: reduced fecundity/ genetic depression	M	

Illegal persecution or accidental capture/killing may be a threat if the population of M. martes does increase, possibly bringing it into conflict with hunting interests.

2.7.1 Method used – Threats	**expert opinion**

2.8 Complementary information

2.8.1 Justification of % thresholds for trends	
2.8.2 Other relevant information	
2.8.3 Trans-boundary assessment	

2.9 Conclusions _(assessment of conservation status at end of reporting period)_
Please refer to the United Kingdom assessment for this species.

3 Natura 2000 coverage & conservation measures - Annex II species _(only applies to species listed under Annex II of the Directive)_

3.1 Population		
3.1.1 Population size Estimation of population size included <u>in the SAC network</u>	**a) Unit**	
	b) Minimum	
	c) Maximum	
3.1.2 Method used		

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3.1.3 Trend of population size within the network (short-term trend)	

3.2 Conservation measures

Conservation measures taken (i.e. already being implemented) within the reporting period and provided information about their importance, location and evaluation.

3.2.1 Measure	3.2.2 Type					3.2.3 Ranking H = high importance M = medium importance L = low importance	3.2.4 Location where the measure is PRIMARILY applied			3.2.5 Broad evaluation of the measure					
	a) Legal/statutory	b) Administrative	c) Contractual	d) Recurrent	e) One-off		a) Inside	b) Outside	c) Both inside & outside	a) Maintain	b) Enhance	c) Long term	d) No effect	e) Unknown	f) Not evaluated

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