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:

S1083 - Stag beetle (*Lucanus cervus*)

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.

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NATIONAL LEVEL

1. General information

1.1 Member State	**UK**
1.2 Species code	**1083**
1.3 Species scientific name	**Lucanus cervus**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Stag beetle

2. Maps

2.1 Sensitive species	No
2.2 Year or period	2001-2018
2.3 Distribution map	Yes
2.4 Distribution map Method used	Complete survey or a statistically robust estimate
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

England
Fremlin, M. 2013. Results of the 'Stag Beetle 'larval incidents' in private gardens' survey, Essex Naturalist (New Series) 30, 94-108.
People's Trust for Endangered Species Great Stag Hunt dataset: 1998-2017.
HARVEY DJ and GANGE AC (2011) The stag beetle: a collaborative conservation study across Europe, Insect Conservation and Diversity (2011) 4, 2-3.
Hawes, C, (2009) Radio-telemetric monitoring of stag beetles Lucanus cervus at two sites in the United Kingdom: limited dispersal and its implications for conservation, in 2nd meeting of the European Stag Beetle Group December 5th 2009, Leiden, http://www.repository.naturalis.nl/document/157904.
Rink M, and Sinsch U, (2007) Radio-telemetric monitoring of dispersing stag beetles: implications for conservation, Journal of Zoology, Volume 272, Issue 3, pages 235-243, July 2007.
London Wildlife Trust (2011) Staggering Gains: Report of the 2011 survey of stag beetle in Greater London.
http://www.wildlondon.org.uk/stag-beetle-survey-2011-12
Percy. C et al (1999) Findings of the 1998 National Stag Beetle Survey. PTES.
https://ptes.org/wp-content/uploads/2014/06/Great-Stag-Hunt-1998.pdf
Lane & Mann (2016) A review of the status of the beetles of Great Britain The stag beetles, dor beetles, dung beetles, chafers and their allies - Lucanidae, Geotrupidae, Trogidae and Scarabaeidae. Species Status No.31. Natural England.
Wales
Anon. 2002. Welsh invasion starts in Cardiff. Urbio(1): 4.
Clark, J.T. 1966. The distribution of Lucanus cervus (L.) (Col., Lucanidae) in Britain. Entomologist's Monthly Magazine102: 199-204.

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Donisthorpe, H. 1941. The distribution of Lucanus cervus L. (Col., Lucanidae) in Britain. Entomologist's Monthly Magazine77: 198-199.
Fowles, A.P. 2013. 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: S1083 - Stag Beetle (Lucanus cervus).
Hall, D.G. 1969. Lucanus cervus (L.) (Col., Lucanidae) in Britain. Entomologist's Monthly Magazine105: 183-184.
Lane, S.A. & Mann, D.J. 2016. A review of the status of the beetles of Great Britain: the stag beetles, dor beetles, dung beetles, chafers and their allies - Lucanidae, Geotrupidae, Trogidae and Scarabaeidae. Species Status No.31. Natural England, Peterborough.
Smith, M. 2003. National stag beetle survey 2002. People's Trust for Endangered Species.
Tomlin, J.R.L.B. 1915. The Coleoptera of Glamorgan. Transactions of the Cardiff Naturalists' Society47: 13-33.
Whitehead, P.F. 2013. NRW surveys of saproxylic invertebrate fauna at 1) Pwl-Mawr and 2) Livox Wood SSSI Graig Wood SSSI and Troy Park Wood Penallt Monmouthshire July-August 2013. Unpublished draft report for Natural Resources Wales.

5. Range

5.1 Surface area (km²)	45330.79	
5.2 Short-term trend Period	2007-2018	
5.3 Short-term trend Direction	Stable (0)	
5.4 Short-term trend Magnitude	a) Minimum	b) Maximum
5.5 Short-term trend Method used	Complete survey or a statistically robust estimate	
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	Approximately equal to (≈)
	c) Unknown	
	d) Method	The FRR is the same as in 2013 and is approximately equal to the current range. An FRR operator has been used because it has not been possible to calculate the exact FRR. The FRR is considered to be sufficient to maintain a viable population and is no less that when the Habitats Directive came into force in the UK. For further details see the 2019 Article 17 UK Approach document.
5.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data	
	The change is mainly due to:	Improved knowledge/more accurate data
5.12 Additional information		

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6. Population

6.1 Year or period	2001-2018	
6.2 Population size (in reporting unit)	a) Unit	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	
	c) Maximum	
	d) Best single value	3503
6.3 Type of estimate	Minimum	
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	Complete survey or a statistically robust estimate	
6.7 Short-term trend Period	2001-2018	
6.8 Short-term trend Direction	Stable (0)	
6.9 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
6.10 Short-term trend Method used	Complete survey or a statistically robust estimate	
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	Approximately equal to (≈)
	c) Unknown	
	d) Method	The FRP has changed since 2013. An FRP operator has been used because it has not been possible to calculate the exact FRP. The FRP is considered to be large enough to maintain a viable population and is no less that when the Habitats Directive came into force in the UK. For further details see the 2019 Article 17 UK Approach document.
6.16 Change and reason for change in population size	Improved knowledge/more accurate data	
	The change is mainly due to:	Improved knowledge/more accurate data
6.17 Additional information		

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7. Habitat for the species

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	2001-2017	
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	There is no systematic way of assessing the habitat for the species required by stag beetles. This is due to the species' preference for damp, decaying timber subterranean habitats upto 50cm underground, mainly in broadleaved woodlands, and urban locations generally not open for scrutiny (such as decaying wood of artifical structures/fence posts and in compost heaps in gardens). Despite this, expert opinion suggests that the area and quality of occupied habitat for the species is sufficient.	

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Removal of dead and dying trees, including debris (B07)	H
Construction or modification (e.g. of housing and settlements) in existing urban or recreational areas (F02)	H

Threat	Ranking
Removal of dead and dying trees, including debris (B07)	M
Construction or modification (e.g. of housing and settlements) in existing urban or recreational areas (F02)	H

8.2 Sources of information

8.3 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	Only outside Natura 2000	

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9.4 Response to the measures	Medium-term results (within the next two reporting periods, 2019-2030)
9.5 List of main conservation measures	

Other measures related to residential, commercial, industrial and recreational infrastructures, operations and activities (CF12)

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 of Range is Overall stable; Future trend of Population is Overall stable; and Future trend of 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	Stable (=)
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 stable; 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 stable; and (ii) the current Population size is not less than 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 of habitat is stable. Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Population are good; and (iii) the Future prospects for Habitat for the species are good.

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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 - stable, Population - stable, and Habitat for the species - stable.
Overall assessment of Conservation Status has not changed since 2013.
Overall trend in Conservation Status has not changed since 2013.

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	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	
	c) Maximum	
	d) Best single value	323
12.2 Type of estimate		Best estimate
12.3 Population size inside the network Method used		Based mainly on extrapolation from a limited amount of data
12.4 Short-term trend of population size within the network Direction		Stable (0)
12.5 Short-term trend of population size within the network Method used		Based mainly on extrapolation from a limited amount of data
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

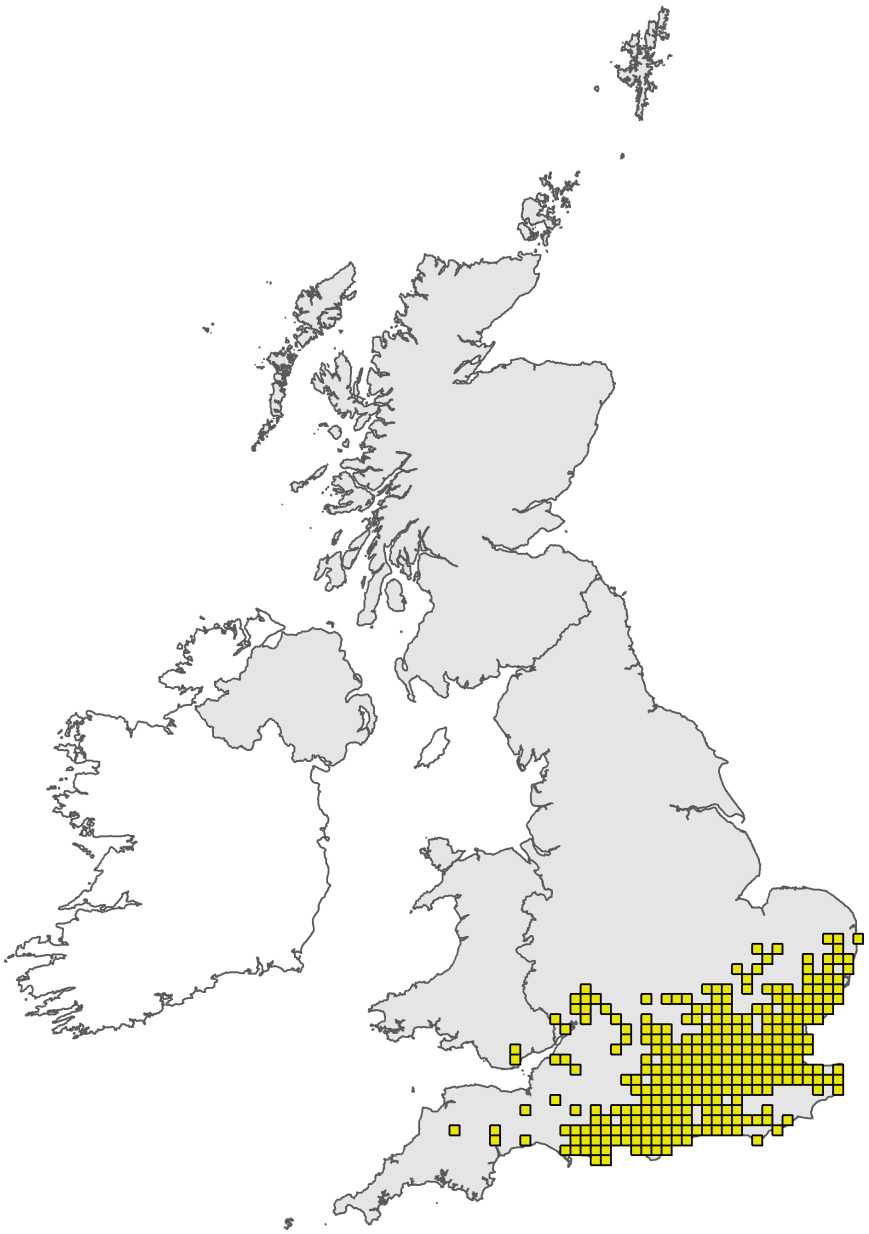

Figure 1: UK distribution map for S1083 - Stag beetle (*Lucanus cervus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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 S1083 - Stag beetle (*Lucanus cervus*). 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 applying a bespoke range mapping tool for Article 17 reporting (produced by JNCC) 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.