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:

S1034 - Medicinal leech (*Hirudo medicinalis*)

ENGLAND

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 (England information only)**
1.2 Species code	**1034**
1.3 Species scientific name	**Hirudo medicinalis**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Medicinal leech

2. Maps

2.1 Sensitive species	No
2.2 Year or period	
2.3 Distribution map	Yes
2.4 Distribution map Method used	
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

England has a small number of companies providing medicinal leeches for medical needs, but all farm their own leeches and there is no trade in the small, wild populations. One company farms leeches in Slovakia and imports them into the UK.

BIOGEOGRAPHICAL LEVEL

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs

Atlantic (ATL)

4.2 Sources of information

Changes to Medicinal Leech (Hirudo medicinalis) Populations from 2013 to 2016. Unpublished RSPB Dungeness Reserve report. 2018
Natural England licence return data for Schedule 5 species licensing.
https://freshwaterhabitats.org.uk/projects/million-ponds/phase-2/
Marshall. H 1999. Medicinal leech (Hirudo medicinalis) survey of Cumbria 1998-99. Report to English Nature, unpublished.
Williams. P, Biggs.J ,Crowe.A, Murphy.J, Nicolet.P, Weatherby.A & Dunbar.M (2010) CS Technical Report No. 7/07 Ponds Report from 2007.
http://nora.nerc.ac.uk/id/eprint/9622/1/N009622CR.pdf
Aqualina. R. 2016. https://www.aquilina-environmental.co.uk/Robert Aquilina newsletter 2016.pdf
Buczynski.P. et al. (2014) Occurrence of the medicinal leech (Hirudo medicinalis) in birds' nests Biologia, Volume 69, Issue 4, Pages 484-488, ISSN (Online) 1336-9563, DOI: https://doi.org/10.2478/s11756-014-0329-0.
Brian Banks, Flag Ecology, pers comms.

5. Range

5.1 Surface area (km²)

5.2 Short-term trend Period

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		
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	No change The change is mainly due to:	
5.12 Additional information		

6. Population

6.1 Year or period	2013-2018	
6.2 Population size (in reporting unit)	a) Unit	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	15
	c) Maximum	46
	d) Best single value	16
6.3 Type of estimate	Best estimate	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	number of map 10x10 km grid cells (grids10x10)
	b) Minimum	
	c) Maximum	
	d) Best single value	13
6.5 Type of estimate	Best 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	Stable (0)	
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	1995-2018	
6.12 Long-term trend Direction	Decreasing (-)	
6.13 Long-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval	

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6.14 Long-term trend Method used	Based mainly on extrapolation from a limited amount of data
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	No change The change is mainly due to:
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	Increasing (+)	
7.5 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data	
7.6 Long-term trend Period	1995-2018	
7.7 Long-term trend Direction	Decreasing (-)	
7.8 Long-term trend Method used	Based mainly on expert opinion with very limited data	
7.9 Additional information		

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Other invasive alien species (other then species of Union concern) (I02)	M
Droughts and decreases in precipitation due to climate change (N02)	M

Threat	Ranking
Other invasive alien species (other then species of Union concern) (I02)	H
Droughts and decreases in precipitation due to climate change (N02)	H

8.2 Sources of information	
8.3 Additional information	Crassula helmsi domination of leech ditches was noted, leading to localised loss of those sites for leeches (RSPB, 2018). This impact persists in some New

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Forest ponds, as noted in the 3rd report, and by Aqulina (2016) for the 4th of the 4 leech ponds there.
This local pressure has been noted in the naturally dry SE areas of the UK, especially in the Lydd area by Dungeness, where some leech ditches dry down in the absence of rainfall.

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		Restore the habitat of the species (related to 'Habitat for the species')
9.3 Location of the measures taken		Both inside and outside Natura 2000
9.4 Response to the measures		Medium-term results (within the next two reporting periods, 2019-2030)

9.5 List of main conservation measures

Reduce diffuse pollution to surface or ground waters from agricultural activities (CA11)

Manage other native species (CS04)

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

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:

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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

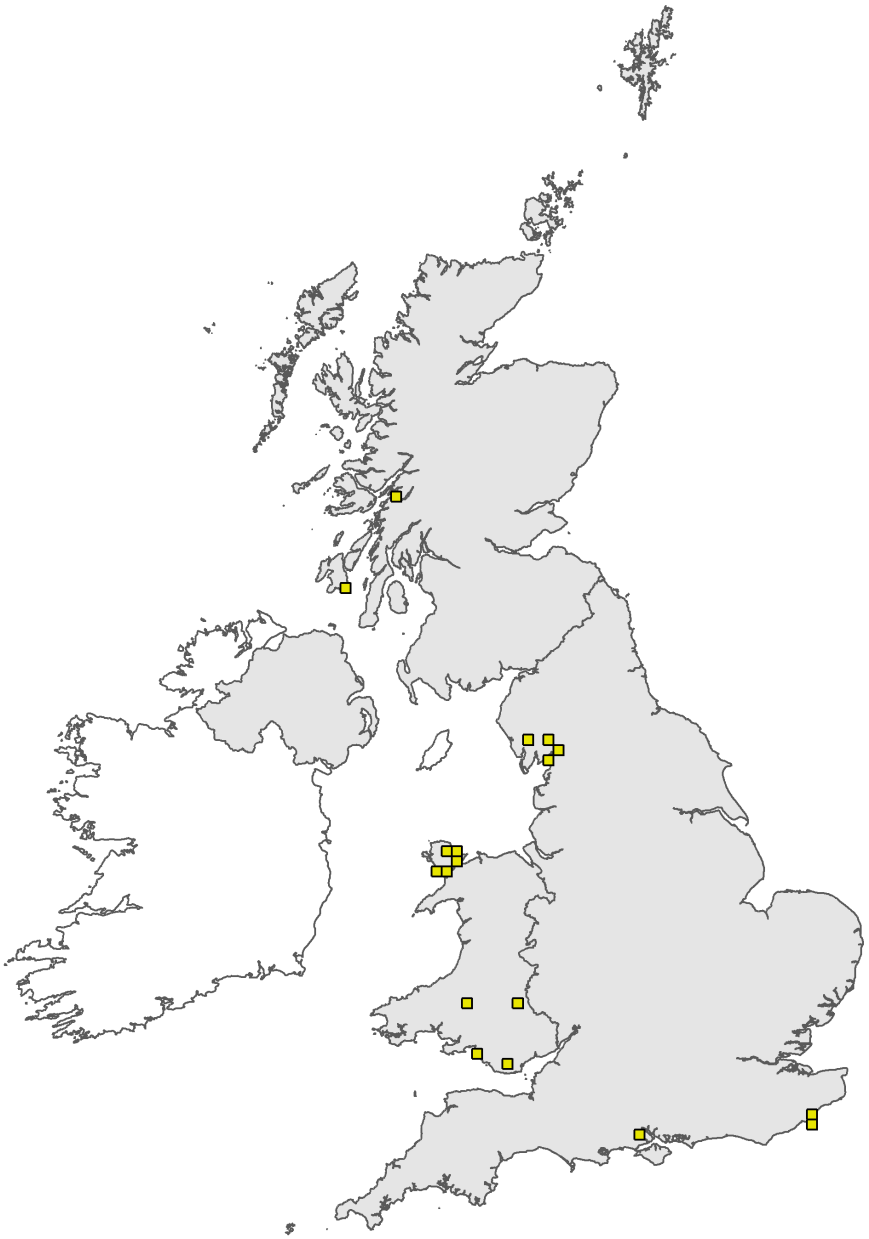

Figure 1: UK distribution map for S1034 - Medicinal leech (*Hirudo medicinalis*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

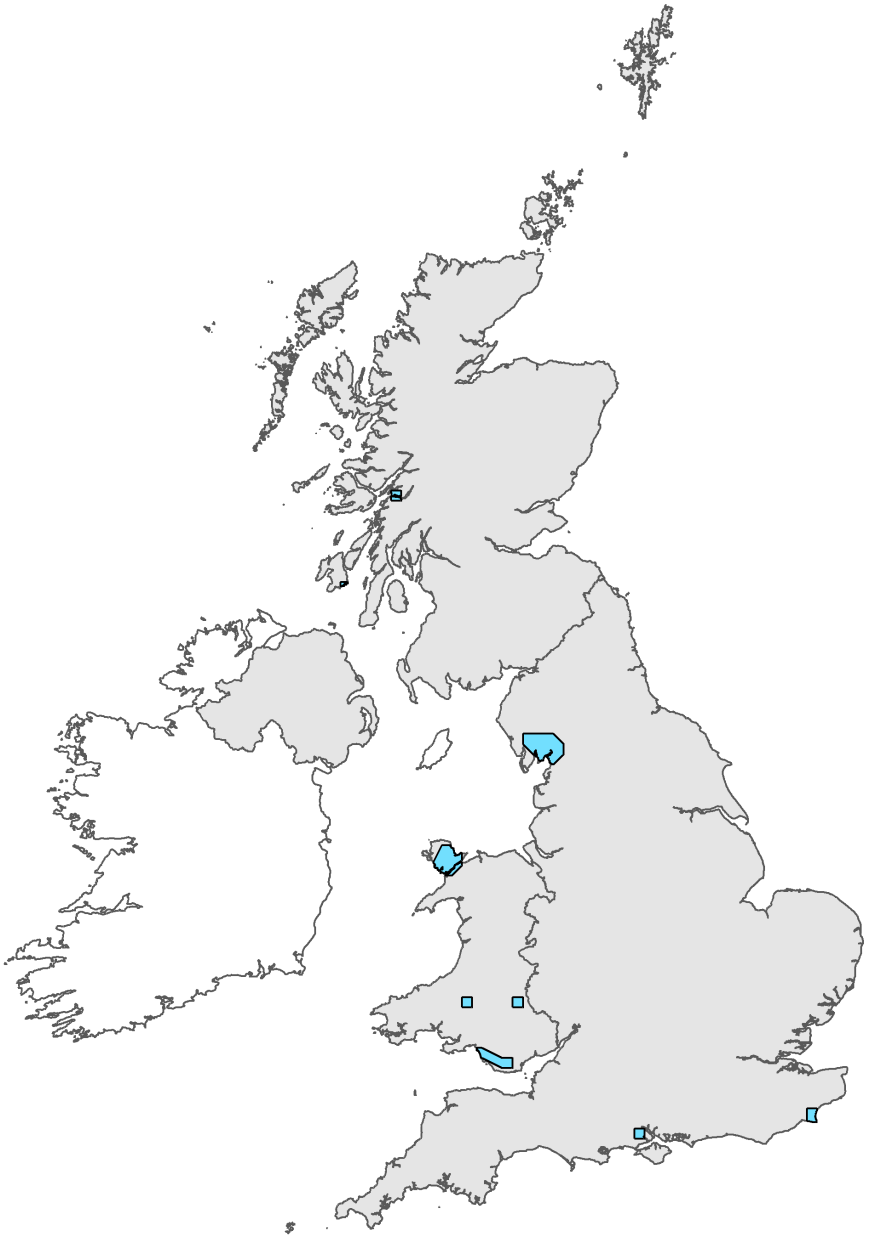

Figure 2: UK range map for S1034 - Medicinal leech (*Hirudo medicinalis*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.

Explanatory Notes

Species name: Hirudo medicinalis (1034) Region code: ATL

Field label	Note
6.2 Population size	The range span from minimum to maximum is large as the upper figure is set on the Cumbrian dataset of 2000 and the new survey 2018 report has not been made available so it is hard to assess how much of that resource is still extant. I have gone for the lower bound as a precaution.
6.3 Type of estimate	The 3 main English population centres remain, though for the 4th report we now have a better understanding of the Cumbrian population centre. This comes from tracking down earlier survey information (actually having the missing report refomulated by the authors, Marshall (1999)), as well as some updated survey information. The Dorset new Forest population pond cluster appears to be stable, though one of the 4 ponds there returned zero leeches when sampled. As this species can be difficult to survay for, this should not be taken as a true loss from this pond. The large population cluster at Dungeness remains strong and has been re-surveyed by the RSPB. Additional data from the nearby Lydd airport landscape further strengthens this area as very important for this species.
6.8 Short term trend; Direction	The two main population clusters hold ground. A suspected population in the Peak District ended up being Horse leech Haemopis sanguisuga when properly surveyed, whilst a new medicinal leech population was reported in a conversation about Gait Barrows SSSI in 2018. The large Cumbrian population cluster, comprising some 32 monads has had its report re-made after an apparent loss of the original, and the sites within it have been partially re-survyed, although these data have not been possible to access. It is considered that there has been some population stability given the nature of those sites. The New Forest ponds had a slight dip with the species not being found in one pond, though this does not equate to loss, as it remains hard to detect sometimes. The central belt of England looks free of the species, so it continues with a disjunct population.
6.12 Long term trend; Direction	This period pretty much saw the polarisation of this species into the two main population centres of Dungeness and the Cumbrian Tarns, with losses in the central English belt.
7.2 Sufficiency of area and quality of occupied habitat; Method used	Whilst the leech ponds themselves look, overall, in reasonable condition, the ability to spread to new water bodies continues to be challenging with respect to water quality.
7.4 Short term trend; Direction	The upswing is probably slight, given that the 2007 Countryside Survey of the UK, found that 80% of UK ponds where in Poor or Very Poor condition. It would be wrong not to consider the pond intiatives that have taken place since then, however, have made no difference.
7.7 Long term trend; Direction	The losses in pond quality outlined in the 2007 national UK report, covering the period 1996-2007 (although the early reports only dealt with lowland pond water quality), demonstrated such a low quality base, that substantial improvements since have probably not offset the losses. Opinion suggests that the conservation effort will have altered the magnitude of the downward trend, but that the trend will remain down, especially for isolated agricultural ponds. The leech ponds may have fared a little better, given that NBN Atlas mapping for the period 1900- 1961 shows many locations that are no longer considered extant, pointing to a retreat to the areas it now occupies.
9.2 Main purpose of the measures taken	Conservation work for this species very much revolves around habitat management, especially at the RSPB reserve at Dungeness. This site, with its direct conservation drive to improve breeding bird piopulations, will favour leeches, as they utilise bird nests as feeding locations, as noted by Buczynski et al (2014).

9.6 Additional information	The Dungeness population cluster is mostly well managed, and surveyed, whilst the refresh survey of the Cumbrian population cluster should lead to more action in the future, so it is assumed this will bear fruit within the next two reporting periods.