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*)

WALES

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.

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NATIONAL LEVEL

1. General information

1.1 Member State	**UK (Wales 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	1998-2017
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

Ausden, M., Banks, B., Donnison, E., Howe, M., Nixon, A., Phillips, D., Wicks, D. & Wynne, C. 2002. The status, conservation and use of the medicinal leech. British Wildlife, 13: 229-238.
Boyce, D.C. 2007. Monitoring invertebrate features on SSSIs - medicinal leech Hirudo medicinalis on Cors Goch and Newborough Warren - Ynys Llanddwyn. CCW Contract Science No. 940. Countryside Council for Wales, Bangor.
Evans, D. 1993. Medicinal leech Hirudo medicinalis survey at four Anglesey sites, 1992. CCW Species and Monitoring Report No. 92/2/15. Countryside Council for Wales, Bangor.
Howe, M.A. 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: S1034 - Medicinal Leech (Hirudo medicinalis).
Howe, M.A., Howe, E.A., Jewer, A., Robinson, H. 2016. Medicinal Leech Hirudo medicinalis on Cors Bodeilio NNR/SSSI and Cors Goch NNR in 2016. NRW unpublished report. Natural Resources Wales, Bangor.
Jones, A.C.L. & Kettle, B.S. 1999. Medicinal leech Survey of Anglesey (Ynys Mon) 1999. Volumes 1 and 2. Unpublished report. North Wales Wildlife Trust.
Lloyd, D. 1997. The medicinal leech, Hirudo medicinalis, at Cors Goch nature reserve. North Wales Wildlife Trust unpublished report.
Lloyd, D. 1998. The medicinal leech Hirudo medicinalis in Wales. CCW Contract Science No. 311. North Wales Wildlife Trust/ Countryside Council for Wales, Bangor.

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Taylor, R. 2012. Monitoring medicinal leech Hirudo medicinalis at Cynffig/Kenfig SSSI and Pysgodlyn Mawr SSSI. CCW Regional Report. CCW/WW/12/1. Countryside Council for Wales.

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	Improved knowledge/more accurate data The change is mainly due to:	Improved knowledge/more accurate data
5.12 Additional information		

6. Population

6.1 Year or period	1998-2017	
6.2 Population size (in reporting unit)	a) Unit b) Minimum c) Maximum d) Best single value	number of map 1x1 km grid cells (grids1x1) 11
6.3 Type of estimate	Best estimate	
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	1998-2017	
6.8 Short-term trend Direction	Stable (0)	

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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	1980-2017
6.12 Long-term trend Direction	Stable (0)
6.13 Long-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval
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)?	Unknown
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	Unknown
7.2 Sufficiency of area and quality of occupied habitat Method used	Insufficient or no data available	
7.3 Short-term trend Period	1998-2017	
7.4 Short-term trend Direction	Unknown (x)	
7.5 Short-term trend Method used	Insufficient or no data available	
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
Use of other pest control methods in agriculture (excluding tillage) (A23)	M

Agricultural activities generating point source pollution to surface or ground waters (A25)	M
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	M
Freshwater fish and shellfish harvesting (recreational) (G06)	M
Management of fishing stocks and game (G08)	M
Drainage (K02)	M

Threat	Ranking
Use of other pest control methods in agriculture (excluding tillage) (A23)	M
Agricultural activities generating point source pollution to surface or ground waters (A25)	M
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	M
Freshwater fish and shellfish harvesting (recreational) (G06)	M
Management of fishing stocks and game (G08)	M
Drainage (K02)	M
Change of habitat location, size, and / or quality due to climate change (N05)	M
Invasive alien species of Union concern (I01)	M
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? 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: 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/eliminate point pollution to surface or ground waters from agricultural activities (CA10)
Reduce diffuse pollution to surface or ground waters from agricultural activities (CA11)
Manage drainage and irrigation operations and infrastructures in agriculture (CA15)
Early detection and rapid eradication of invasive alien species of Union concern (CI01)
Management, control or eradication of established invasive alien species of Union concern (CI02)

9.6 Additional information

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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:
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

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13.1 Justification of % thresholds for trends

13.2 Trans-boundary assessment

13.3 Other relevant Information

Distribution Map

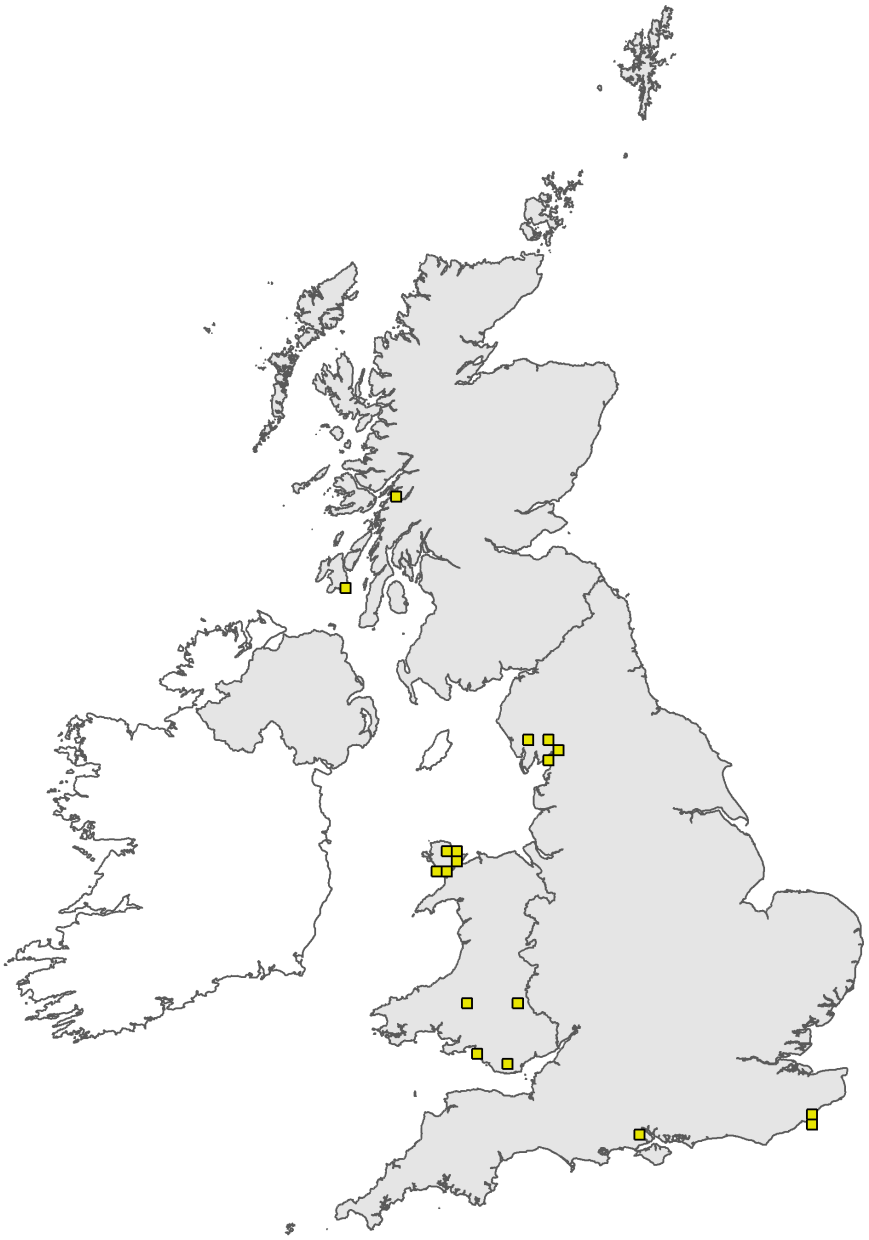

Figure 1: UK distribution map for S1034 - Medicinal leech (*Hirudo medicinalis*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

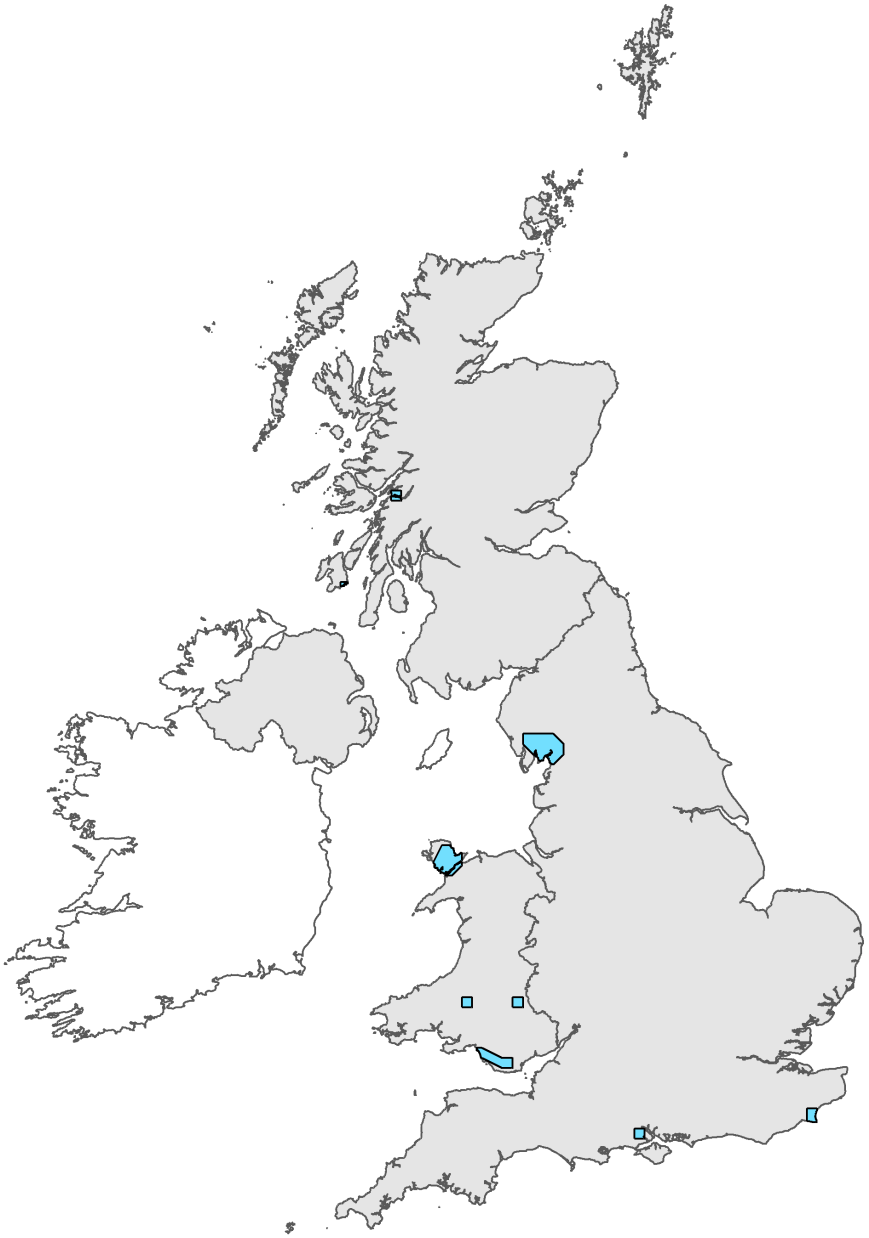

Figure 2: UK range map for S1034 - Medicinal leech (*Hirudo medicinalis*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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)

Field label	Note
2.4 Distribution map; Method used	There has not been a comprehensive survey in the 2001-2006, 2007-2012 or 2013-2018 reporting periods. There is an ongoing (2016 to present) survey of known sites by the Freshwater Habitats Trust which has provided contemporary records for six sites and has discovered a new population. A strategic survey was undertaken in 1998 (Lloyd, 1998) and, as the results of that survey are likely to reflect the current status and distribution, a period of 1998-2017 has been used.

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

Field label	Note
5.3 Short term trend; Direction	Whilst a new population has been noted over the period and repeat site surveys of known sites have resulted in no positive records, we consider the range to have remained stable in the short term.
5.11 Change and reason for change in surface area of range	Since the last reporting round, a new population has been found on Brechfa & Llangoed Common. Some existing sites have been surveyed recently by the Freshwater Habitats Trust without success (H. Shaw, pers. comm.) but it is premature to state that populations have been lost.
6.2 Population size	There have been eleven occupied 1x1km grids since 1998, in nine hectads.
6.8 Short term trend; Direction	There have been no definite population losses over the short-term period, although recent surveys have failed to find leeches at several sites. The most likely site to have lost the species is Pysgodlyn Mawr where it has not been recorded since 1998 (not found in 2011 or 2017) and introduced fish are known to have had an impact upon the lake. A new population has been found on Brechfa & Llangoed Common recently.
6.14 Long term trend; Method used	The long-term trend is for one of stability as most apparent losses at Llangorse Lake (SO12), Marloes Mere (SM70), Pen y Parc reservoir (SH57) and Trecastell (SN82) are historic.
7.5 Short term trend; Method used	Insufficient data although Howe (2013) provided a figure of 0.551 square km of occupied habitat, encompassing all currently-occupied sites. Whilst the measurement of isolated water bodies is straightforward, the calculation of area on the Anglesey fen sites is based on the inclusion of suitable ditches and flooded fen rather the fen in its entirety. The figure represents a minimum surface area range as it does not include a measure of the area of historic sites (there are four - Pen y Parc Reservoir, Marloes Mere, Llangorse Lake and Trecastle). The measure was calculated using Ordnance Survey and aerial imagery on GIS. Most current populations occur within protected sites - SSSIs, SACs and National Nature Reserves. On the majority of these sites, water quality management is a major conservation concern and medicinal leech will benefit as a result of any initiatives undertaken. Whilst sites within Newborough Forest may not be managed for water quality per se, ongoing management is sympathetic for medicinal leech.
8.1 Characterisation of pressures/ threats	Pressures: Whilst most populations are on protected sites, pressures such as water pollution (A25 & A26) use of pesticides such as avermectins (A23), the management of recreational fish stocks (G06 & G08) and drainage (K02) do affect some sites. Threats: As with Pressures, but with the threat of invasive non-native aquatic species (I01 & I02) and habitat changes as a consequence of climate change (N05).

9.5 List of main conservation measures	Whilst most populations are on protected sites, conservation measures should address the pressures and threats on sites and leech populations both within the sites and on adjacent land including drainage (CA15), pollution (CA10 & CA11) and the control of invasive non-native aquatic species (CI01 & CI02).
10.1 Future prospects of parameters	Most current populations occur within protected sites - SSSIs, SACs and National Nature Reserves. On the majority of these sites, water quality management is a major conservation concern and medicinal leech will benefit as a result of any initiatives undertaken. Whilst some populations are small and vulnerable, others are more robust and should have long-term viability provided that their ecological requirements are taken into account