

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

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

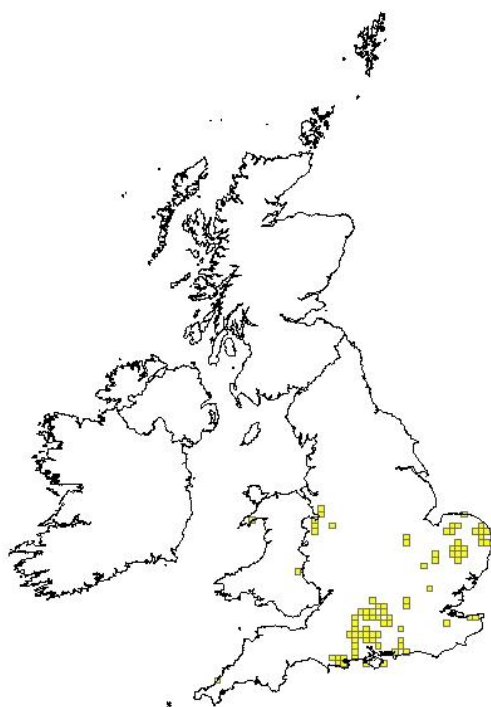
Species:

S1016 - Desmoulin's whorl snail (*Vertigo moulinsiana*)

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

<i>Field name</i>	<i>Brief explanations</i>	
<b>0.2 Species</b>	<b>0.2.1 Species code</b>	<b>S1016</b>
	<b>0.2.2 Species scientific name</b>	<b><i>Vertigo moulinsiana</i></b>
	<b>0.2.3 Alternative species scientific name</b> Optional	
	<b>0.2.4 Common name</b> Optional	

<b>1.1 Maps</b>			
<b>1.1.1 Distribution map</b>	<b>True</b>	<b>Sensitive</b>	<b>False</b>
	The distribution map is based on species records which are considered to be representative of the range within the current reporting period. For further details see the 2013 Article 17 UK Approach document.		



<b>1.1.2 Method used - map</b>	<b>Complete survey/Complete survey or a statistically robust estimate</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
<b>1.1.3 Year or period</b>	<b>1999-2012</b>
	The distribution map is based on species records which are considered to be representative of the range within the current reporting period. For further details see the 2013 Article 17 UK Approach document.

<b>1.1.4 Additional distribution map</b> Optional	<b>False</b>
<b>1.1.5 Range map</b>	<b>True</b> The range map was produced by applying the UK range mapping tool to the distribution map presented in 1.1.4. The alpha value for this species was 20km. For further details see the 2013 Article 17 UK Approach document.



<b>2.1 Biogeographical region &amp; marine regions</b>	<b>ATL</b>
<b>2.2 Published sources</b>	<p><b>Abrehart Ecology. Report on <i>Vertigo moulinsiana</i> distribution in the Midland Meres, December 2011 to January 2012. An ecological survey including floral and fauna observations undertaken for Natural England.</b></p> <p><b>Abrehart Ecology. Reporting cycle on <i>Vertigo moulinsiana</i> at Crose Mere, Sweat Mere and Fenemere November 2011. Lot 6 , An ecological survey including floral and fauna observations undertaken for Natural England.</b></p> <p><b>Abrehart Ecology. Reporting cycle on <i>Vertigo moulinsiana</i> at Denham Lock Wood SSSI, Hillingdon and Sawbridgeworth SSSI, Hertfordshire, November 2011 Lot 5 , An ecological survey including floral and faunal observations undertaken for Natural England.</b></p> <p><b>Abrehart Ecology. Article 17 Reporting cycle on <i>Vertigo moulinsiana</i> in Norfolk and Suffolk, November 2011. Lot 4 , An ecological survey including floral and faunal observations undertaken for Natural England.</b></p> <p><b>Abrehart T.R. (2012). Baseline data for the population size and distribution of <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) at Quoisley Mere, Cheshire SSSI. October 2012. An ecological</b></p>

	<p>survey including floral and fauna observations undertaken for Natural England by Abrehart Ecology.</p> <p>Boyce, D.C. 2008. Monitoring invertebrate features on Sites of Special Scientific Interest: the wetland invertebrate assemblage on Rhos Goch National Nature Reserve, Radnorshire. CCW Regional Report. CCW/SEW/07/2. Countryside Council for Wales.</p> <p>Joint Nature Conservation Committee. 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: <a href="http://www.jncc.gov.uk/article17">www.jncc.gov.uk/article17</a>""</p> <p>Killeen, I.J. 2000. Status and distribution of Des Moulin's whorl snail <i>Vertigo moulinsiana</i> on Cors Geirch SSSI. CCW Contract Science. 373. Countryside Council for Wales.</p> <p>Killeen, I.J. 2004. Condition monitoring of <i>Vertigo moulinsiana</i> in Cors Geirch, Corsydd Llyn/Lleyn Fens candidate Special Area of Conservation, Wales. CCW Contract Science. 624. Countryside Council for Wales.</p> <p>Killeen, IJ (2011) A CONDITION ASSESSMENT OF VERTIGO MOULINSIANA IN WESTBERE MARSHES, KENT, MALACOLOGICAL SERVICES, Contract to Natural England.</p> <p>Killeen, IJ, (2011) A CONDITION ASSESSMENT OF VERTIGO MOULINSIANA IN THE KENNET &amp; LAMBOURN SAC, BERKSHIRE, MALACOLOGICAL SERVICES, Report to Natural England.</p> <p>Lloyd, D. 2008. The condition of <i>Vertigo moulinsiana</i> on Corsydd Llyn / Lleyn Fens SAC. File Note:CCW File note, 10 October 2008. ""</p> <p>Willing, M. J. Monitoring populations of <i>Vertigo moulinsiana</i> at selected sites on the Hampshire River Frome and River Piddle (Natural England Article 17 Reporting on <i>Vertigo</i> snails in England)</p> <p>Willing, M. J. Monitoring populations of <i>Vertigo moulinsiana</i> at selected sites on the Wiltshire River Avon and tributary rivers Wylve and Bourne, (Natural England Article 17 Reporting on <i>Vertigo</i> snails in England)</p> <p><b>UK distribution map data sources</b></p> <p>Habitats of <i>Vertigo moulinsiana</i> (Gastropoda: Vertiginidae) in Cornwall. <i>Journal of Conchology</i> 38(1): 79-85</p> <p>Invertebrate Site Register - England (1738-2005)</p> <p>Mollusc (non-marine) data for Great Britain and Ireland (1670-1999)</p> <p>Natural England - commissioned by David Heaver. Emailed to JNCC (LH) by David Heaver (NE) 21/08/2012</p> <p>NBN Gateway data: Conchological Society of Great Britain &amp; Ireland GA000159 Extracted by LH 19/09/2012</p> <p>Mollusc (non-marine) data for Great Britain and Ireland</p> <p>NBN Gateway data: Countryside Council for Wales CCWJMP03 Extracted by LH 19/09/2012</p> <p>UK Biodiversity Action Plan Invertebrate Data for Wales</p> <p>NBN Gateway data: National Trust GA000565 Extracted by LH 19/09/2012</p> <p>Wicken Fen nature reserve species data held by The National Trust</p> <p>NBN Gateway data: Norfolk Biodiversity Information Service</p>
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	<p><b>GA000908</b>Extracted by LH 19/09/2012 Norfolk Environment Agency Priority Species Records  <b>NBN Gateway data: Suffolk Biological Records Centre</b>  <b>GA000623</b>Extracted by LH 19/09/2012 Suffolk Biological Records Centre (SBRC) dataset</p> <p>UK Distribution Map data sources</p> <p>Habitats of <i>Vertigo moulinsiana</i> (Gastropoda: Vertiginidae) in Cornwall. Journal of Conchology 38(1): 79-85  Invertebrate Site Register - England (1738-2005)  Mollusc (non-marine) data for Great Britain and Ireland (1670-1999) Natural England - commissioned by David Heaver. Emailed to JNCC (LH) by David Heaver (NE) 21/08/2012  NBN Gateway data: Conchological Society of Great Britain &amp; Ireland GA000159Extracted by LH 19/09/2012 Mollusc (non-marine) data for Great Britain and Ireland  NBN Gateway data: Countryside Council for Wales CCWJMP03Extracted by LH 19/09/2012 UK Biodiversity Action Plan Invertebrate Data for Wales  NBN Gateway data: National Trust GA000565Extracted by LH 19/09/2012 Wicken Fen nature reserve species data held by The National Trust  NBN Gateway data: Norfolk Biodiversity Information Service GA000908Extracted by LH 19/09/2012 Norfolk Environment Agency Priority Species Records  NBN Gateway data: Suffolk Biological Records Centre GA000623Extracted by LH 19/09/2012 Suffolk Biological Records Centre (SBRC) dataset</p>
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<b>2.3 Range</b>	
<b>2.3.1 Surface area Range</b>	<p><b>20004.17</b></p> <p>The surface area of the range was calculated from the map presented in 1.1.5. For further details see the 2013 Article 17 UK Approach document.</p>
<b>2.3.2 Method used Surface area of Range</b>	<p><b>Complete survey/Complete survey or a statistically robust estimate</b></p> <p>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information</p>
<b>2.3.3 Short-term trend Period</b>	<p><b>2001-2012</b></p> <p>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</p>
<b>2.3.4 Short term trend Trend direction</b>	<p><b>stable</b></p> <p>The short term trend direction was derived by comparing the range map in 1.1.5 with the range map produced in the 2007 report, by considering the range trend in the 2007 report, and by considering any further information provided by the UK country conservation agencies. For further details see the 2013 Article 17 UK Approach document and</p>

	relevant country-level reporting information.	
<b>2.3.5 Short-term trend Magnitude</b> Optional	<b>a) Minimum</b>	
	<b>b) Maximum</b>	
<b>2.3.6 Long-term trend Period</b> Optional	<b>1989-2012</b>	
<b>2.3.7 Long-term trend Trend direction</b> Optional	<b>decrease</b>	
<b>2.3.8 Long-term trend Magnitude</b> Optional	<b>a) Minimum</b>	
	<b>b) Maximum</b>	
<b>2.3.9 Favourable reference range</b>	<b>a) Value in km<sup>2</sup></b>	<b>20004.17</b>
	The current range has been set as the FRV since this is thought to be a better reflection of the range when the Habitats Directive came into force.	
	<b>b) Operator for FRR</b>	
	<b>c) FRR is unknown (indicated by "true")</b>	<b>False</b>
<b>d) Method used to set FRR</b>	<b>The current range has been set as the FRV since this is thought to be a better reflection of the range when the Habitats Directive came into force. The value is considered to be large enough to support a viable population and no lower than the range estimate from when the Habitats Directive came into force in the UK. For further details please see the 2013 Article 17 UK Approach document.</b>	
The current range has been set as the FRV since this is thought to be a better reflection of the range when the Habitats Directive came into force. The value is considered to be large enough to support a viable population and no lower than the range estimate from when the Habitats Directive came into force in the UK. For further details please		

	see the 2013 Article 17 UK Approach document.	
<b>2.3.10 Reason for change</b> Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to...	<b>a) Genuine change?</b>	<b>False</b>
	The slight increase in reported range is thought to be due to better data.	
	<b>b) Improved knowledge/more accurate data?</b>	<b>True</b>
	The slight increase in reported range is thought to be due to better data.	
	<b>c) Use of different method (e.g. "Range tool")?</b>	<b>False</b>
Use of a revised UK range mapping tool had little effect on the calculation for surface area of range.		

<b>2.4 Population</b>		
<b>2.4.1 Population size estimation</b> (using individuals or agreed exceptions where possible)	<b>a) Unit</b>	
	<b>b) Minimum</b>	
	<b>c) Maximum</b>	
<b>2.4.2 Population size estimation</b> (using population unit other than individuals) Optional ( <i>if 2.4.1 filled in</i> )	<b>a) Unit</b>	<b>number of map 1x1 km grid cells</b>
	<b>b) Minimum</b>	<b>93</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
	<b>c) Maximum</b>	<b>93</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
<b>2.4.3 Additional information on population estimates / conversion</b> Optional	<b>a) Definition of "locality"</b>	
	<b>b) Method to convert data</b>	
	<b>c) Problems encountered to provide population size estimation</b>	<b>This species experiences such large fluctuations in number of individuals at sites that reporting numbers of individuals is unhelpful. There is a high possibility that there are some undiscovered occupied 1km squares that</b>

		<b>have been missed in the population estimate.</b>
<b>2.4.4 Year or period</b>	<b>2001-2012</b>	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
<b>2.4.5 Method used</b>	<b>Complete survey/Complete survey or a statistically robust estimate</b>	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
<b>2.4.6 Short-term trend</b>	<b>2001-2012</b>	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
<b>2.4.7 Short-term trend</b>	<b>decrease</b>	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
<b>2.4.8 Short-term trend</b>		
<b>Magnitude</b>	Optional	<b>a) Minimum</b>
		<b>b) Maximum</b>
		<b>c) Confidence interval</b>
<b>2.4.9 Short-term trend</b>	<b>Complete survey/Complete survey or a statistically robust estimate</b>	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>Method used</b>		
<b>2.4.10 Long-term trend –</b>	<b>1989-2012</b>	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>Period</b>	Optional	
<b>2.4.11 Long-term trend</b>	<b>decrease</b>	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
<b>Trend direction</b>	Optional	
<b>2.4.12 Long-term trend</b>		
<b>Magnitude</b>	Optional	<b>a) Minimum</b>
		<b>b) Maximum</b>



	<b>c) Confidence interval</b>	
<b>2.4.13 Long term trend Method used</b>	<b>Estimate based on partial data with some extrapolation and/or modelling</b>	
Optional	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.4.14 Favourable reference population</b>	<b>a) Number of individuals/agreed exceptions/other units</b>	<b>278</b>
	The value is considered to be large enough for the population to be viable and no lower than the population estimate from when the Habitats Directive came into force in the UK. For further details please see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>b) Operator</b>	
	<b>c) FRP is unknown (indicated by "true")</b>	<b>False</b>
	<b>d) Method used to set FRP</b>	<b>The value is considered to be large enough for the population to be viable and no lower than the population estimate from when the Habitats Directive came into force in the UK. For further details please see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</b>
	The value is considered to be large enough for the population to be viable and no lower than the population estimate from when the Habitats Directive came into force in the UK. For further details please see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.4.15 Reason for change</b>	<b>a) Genuine change?</b>	<b>False</b>
Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to:	The population unit has changed from occupied 10 km squares to occupied 1km squares this question is not applicable.	
	<b>b) Improved knowledge/more accurate data?</b>	<b>False</b>
	The population unit has changed from occupied 10 km squares to occupied 1km squares this question is not applicable.	
	<b>c) Use of different</b>	<b>False</b>

	<b>method (e.g. "Range tool")?</b>	
	The population unit has changed from occupied 10 km squares to occupied 1km squares so no comparison is possible.	

<b>2.5 Habitat for the species</b>		
<b>2.5.1 Area estimation</b>	<b>41</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.  There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species.	
<b>2.5.2 Year or period</b>	<b>2002-2011</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.5.3 Method used Habitat for the species</b>	<b>Estimate based on partial data with some extrapolation and/or modelling</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.5.4 Quality of the habitat</b>	<b>a) Habitat quality</b>	<b>Moderate</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	<b>b) Assessment method</b>	<b>Quality was assessed using a ground wetness scale to assess fen in good quality for this species.</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.5.5 Short-term trend Period</b>	<b>2006-2011</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.5.6 Short-term trend Trend direction</b>	<b>decrease</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.5.7 Long-term trend Period</b> Optional	<b>1996-2011</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.5.8 Long-term trend Trend direction</b> Optional	<b>decrease</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.5.9 Area of suitable habitat for the species</b>	<b>a) Value in km<sup>2</sup></b>	
	<b>b) Absence of data indicated as '0'</b>	
<b>2.5.10 Reason for change</b> Is the difference between the	<b>a) Genuine change?</b>	<b>False</b>

value reported at 2.5.1 and the previous reporting round mainly due to	Surface area of habitat was reported as unknown in 2007 so no comparison is possible.	
	<b>b) Improved knowledge/more accurate data?</b>	<b>False</b>
	Surface area of habitat was reported as unknown in 2007 so no comparison is possible.	
	<b>c) Use of different method (e.g. "Range tool")?</b>	<b>False</b>
Surface area of habitat was reported as unknown in 2007 so no comparison is possible.		

2.6 Main pressures		
a) Pressure	b) Ranking	c) Pollution qualifier
	H = high importance (max 5 entries) M = medium importance L = low importance	
J02: human induced changes in hydraulic conditions	H	
K01: abiotic (slow) natural processes	H	
A04: grazing	M	
H02: Pollution to groundwater (point sources and diffuse sources)	M	
A08: Fertilisation	L	

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>2.6.1 Method used – Pressures</b>	<b>based exclusively or to a larger extent on real data from sites/occurrences or other data sources</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

2.7 Threats		
a) Threat	b) Ranking	c) Pollution qualifier
	H = high importance (max 5 entries) M = medium importance L = low importance	

J02: human induced changes in hydraulic conditions	H	
K01: abiotic (slow) natural processes	H	
A04: grazing	M	
A02: modification of cultivation practices	L	

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

**2.7.1 Method used – Threats**

**expert opinion**

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

**2.8 Complementary information**

**2.8.1 Justification of % thresholds for trends**

**2.8.2 Other relevant information**

**Abstractions are regulated and were subject to a review of Consents around the SAC series, though the drying trend which these riverine systems have experienced over the last few years seemed to have dropped water levels of the adjacent and marginal fens to levels that compromise the snail. In this respect, low rainfall is more of a threat than abstraction at the moment**

For further information please see relevant country-level information.

**2.8.3 Trans-boundary assessment**

**2.9 Conclusions (*assessment of conservation status at end of reporting period*)**

**2.9.1 Range**

**a) Conclusion**

**Favourable**

Range has been assessed as Favourable because range is equal to FRV and the short term range trend is stable.

**b) Qualifier**

**2.9.2 Population**

**a) Conclusion**

**Bad**

Population has been assessed as Bad because the population estimate is more than 25% below the FRV for population. The short term trend is decline.

**b) Qualifier**

**declining**

<b>2.9.3 Habitat for the species</b>	<b>a) Conclusion</b>	<b>Inadequate</b>
	Habitat has been assessed as Inadequate. There is thought to be a sufficient amount of habitat for the species to be viable and the habitat quality is moderate. However the trend is declining.	
	<b>b) Qualifier</b>	<b>declining</b>
	The short term trend for habitat is declining.	
<b>2.9.4 Future prospects</b>	<b>a) Conclusion</b>	<b>Bad</b>
	Future prospects is assessed as Bad on the basis of assessments of the future prospects of the three parameters, range, population and habitat for species:  Range future prospects: Good Population future prospects: Bad Habitat future prospects: Poor Overall future prospects: Bad  Changes to rainfall patterns, particularly to flooding events pose a significant threat to this species, with little mediation likely.	
	<b>b) Qualifier</b>	<b>declining</b>
	The qualifier is decrease because the negative trends for population and habitat may continue into the future.	
<b>2.9.5 Overall assessment of Conservation Status</b>	<b>Bad</b>	
	The overall assessment is Bad as both Population and Future Prospects are assessed as Bad.	
<b>2.9.6 Overall trend in Conservation Status</b>	<b>declining</b>	
	On balance, the overall trend is declining.	

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

<b>3.1 Population</b>		
<b>3.1.1 Population size</b>  Estimation of population size included in the SAC network	<b>a) Unit</b>	<b>number of map 1x1 km grid cells</b>
	<b>b) Minimum</b>	<b>27</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	

	<b>c) Maximum</b>	<b>27</b>
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>3.1.2 Method used</b>	<b>Estimate based on partial data with some extrapolation and/or modelling</b>	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
<b>3.1.3 Trend of population size within the network (short-term trend)</b>	<b>decrease</b>	
Optional	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	

### 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
2.1: Maintaining grasslands and other open habitats				Y		L			Y		Y				
4.0: Other wetland-related measures				Y		M			Y		Y				
4.2: Restoring/improving the hydrological regime	Y	Y		Y		H			Y		Y		Y		

4.3: Managing water abstraction	Y	Y		Y		M			Y				Y		
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For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.