

**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:

S1013 - Geyer's whorl snail (*Vertigo geyeri*)

**IMPORTANT NOTE – PLEASE READ**

- The country-level reporting information contained in this document is a contribution to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Natural Resources Wales** and refers only to the state of the habitat/species in **Wales** - it does not 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.

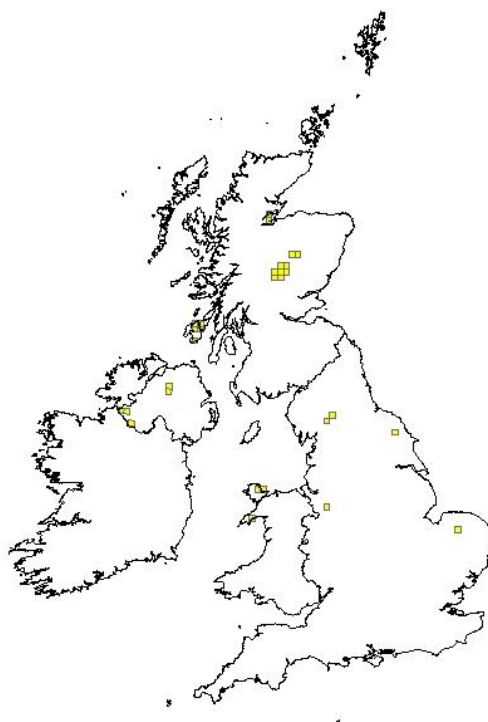
As of 1 April 2013, the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales became Natural Resources Wales/Cyfoeth Naturiol Cymru

## 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>S1013</b>
	<b>0.2.2 Species scientific name</b>	<b><i>Vertigo geyeri</i></b>
	<b>0.2.3 Alternative species scientific name</b> Optional	
	<b>0.2.4 Common name</b> Optional	<b>Geyer's Whorl Snail</b>

### 1.1 Maps

<b>1.1.1 Distribution map</b>		<b>Sensitive</b>	<b>False</b>
-------------------------------	--	------------------	--------------



<b>1.1.2 Method used - map</b>	<b>Estimate based on expert opinion with no or minimal sampling</b>		
<b>1.1.3 Year or period</b>	<b>2007-2008</b>		
<b>1.1.4 Additional distribution map</b>	<b>False</b>		
<b>1.1.5 Range map</b>			

<b>2.1 Biogeographical region &amp; marine regions</b>	ATL
<b>2.2 Published sources</b>	<p>"Killeen, I.J. &amp; Moorkens, E. 2004. Condition monitoring of <i>Vertigo geyeri</i> on Cors Erddreiniog &amp; Waun Eurad, Corsydd Môn/Anglesey Fens candidate Special Area of Conservation, Wales. CCW Contract Science. 625. Countryside Council for Wales.</p> <p>Killeen, I.J. &amp; Moorkens, E. 2008. Condition monitoring of <i>Vertigo geyeri</i> on Waun Eurad and Cors Erddreiniog SAC. CCW Environmental Monitoring Report. 42. Countryside Council for Wales.</p> <p>Lloyd, D. 2005. The condition of <i>Vertigo geyeri</i> on Corsydd Llyn / Llyn Fens SAC. CCW File note, 17 October 2005.</p> <p>Lloyd, D. 2008. The condition of <i>Vertigo geyeri</i> on Corsydd Llyn / Llyn Fens SAC. CCW File note, 10 October 2008.</p> <p>Sharland, E. 2000. Autecology of <i>Vertigo angustior</i> and <i>Vertigo geyeri</i> in Wales. CCW Contract Science. 392. Countryside Council for Wales.</p> <p>Sharland, E.C. 2001. Autecology of <i>Vertigo angustior</i> and <i>Vertigo geyeri</i> in Wales. Ph.D., University of Sheffield."</p>

<b>2.3 Range</b>	
<b>2.3.1 Surface area Range</b>	See 2.4.5
<b>2.3.2 Method used Surface area of Range</b>	<p><b>Estimate based on expert opinion with no or minimal sampling</b></p> <p>JNCC have calculated Range from UK data using alpha-hull. This has not been separately calculated for Wales and hence the entry here does not indicate that Range analysis has taken place for Wales. It is merely a marker for JNCC to indicate the quality of the raw distribution data that was supplied to them in order to undertake the UK analysis.</p>
<b>2.3.3 Short-term trend Period</b>	<b>2001-2012</b>
<b>2.3.4 Short term trend Trend direction</b>	<p><b>stable</b></p> <p>geyeri is still present on the three sites it has been recorded from in Wales so range here is stable</p>
<b>2.3.5 Short-term trend Magnitude</b>	<b>a) Minimum</b>
	<b>b) Maximum</b>
<b>2.3.6 Long-term trend Period</b>	<b>1989-2012</b>

<b>2.3.7 Long-term trend Trend direction</b>	<b>stable</b>	
	as above for short-term trend	
<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>b) Operator for FRR</b>	
	<b>c) FRR is unknown (indicated by "true")</b>	<b>False</b>
<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>
	See 2.3.4	
	<b>b) Improved knowledge/more accurate data?</b>	<b>False</b>
	<b>c) Use of different method (e.g. "Range tool")?</b>	<b>False</b>

<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>5</b>
	<b>c) Maximum</b>	<b>5</b>
<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>2.4.4 Year or period</b>	<b>2007-2012</b>	
<b>2.4.5 Method used Population size</b>	<b>Complete survey/Complete survey or a statistically robust estimate</b>	
	suitable habitat has been surveyed on Llyn and Anglesey and elsewhere in Wales but no exhaustive survey of calcareous seepages in the Prinicpality has been undertaken	
<b>2.4.6 Short-term trend Period</b>	<b>2007-2012</b>	
<b>2.4.7 Short-term trend Trend direction</b>	<b>stable</b>	
	See 2.4.9	
<b>2.4.8 Short-term trend Magnitude</b>	<b>a) Minimum</b>	<b>0</b>
	<b>b) Maximum</b>	<b>0</b>
	<b>c) Confidence interval</b>	
<b>2.4.9 Short-term trend</b>	<b>Complete survey/Complete survey or a statistically robust</b>	

<b>Method used</b>	<b>estimate</b> population size fluctuates dramatically in <i>Vertigo</i> species from year to year and is impossible to determine with any accuracy due to the snail's behaviour in response to humidity and hydrology. All that it is possible to say is that populations are still present in each of the locations in which they have been recorded	
<b>2.4.10 Long-term trend – Period</b>	<b>1989-2012</b>	
<b>2.4.11 Long-term trend Trend direction</b>	<b>stable</b>	
<b>2.4.12 Long-term trend Magnitude</b> Optional	<b>a) Minimum</b>	<b>0</b>
	<b>b) Maximum</b>	<b>0</b>
	<b>c) Confidence interval</b>	
<b>2.4.13 Long term trend Method used</b>	<b>1</b> as above	
<b>2.4.14 Favourable reference population</b>	<b>a) Number of individuals/agreed exceptions/other units</b>	
	<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>2.4.15 Reason for change</b> Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous	<b>a) Genuine change?</b>	<b>False</b>
	See 2.4.9	

reporting round mainly due to:	<b>b) Improved knowledge/more accurate data?</b>	<b>False</b>
	<b>c) Use of different method (e.g. "Range tool")?</b>	<b>False</b>

<b>2.5 Habitat for the species</b>			
<b>2.5.1 Area estimation</b>	<p><b>0.2</b></p> <p>Lloyd (2005) mapped 4306 sq metres of potential habitat at Cors Geirch and Killeen &amp; Moorkens (2004) mapped c. 6250 sq m. at Waun Eurad. Cors Erddreiniog has not been investigated in such detail but Killeen &amp; Moorkens (2008) reported that compartments amounting to 11.45ha contained suitable habitat. It is likely that less than 10% of these compartments actually supports sedge lawn so there will be a maximum of 11.500 sq metres on Cors Erddreiniog that could be occupied by <i>geyeri</i> (though this figure may be a substantial over-estimate)</p> <p>There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species.</p>		
<b>2.5.2 Year or period</b>	<p><b>2003-2005</b></p> <p>Suitable habitat was mapped during the last reporting round but monitoring since then has concentrated on the transects and no attempt has been made to re-map areas of suitable habitat</p>		
<b>2.5.3 Method used Habitat for the species</b>	<b>Estimate based on partial data with some extrapolation and/or modelling</b>		
<b>2.5.4 Quality of the habitat</b>	<table border="1"> <tr> <td><b>a) Habitat quality</b></td> <td><b>Moderate</b></td> </tr> </table>	<b>a) Habitat quality</b>	<b>Moderate</b>
	<b>a) Habitat quality</b>	<b>Moderate</b>	
	<table border="1"> <tr> <td><b>b) Assessment method</b></td> <td><b>Quality has been assessed by transects across suitable habitat and categorising 'cells' according to definitions of suitability (see Killeen &amp; Moorkens 2004 for details).</b></td> </tr> </table>	<b>b) Assessment method</b>	<b>Quality has been assessed by transects across suitable habitat and categorising 'cells' according to definitions of suitability (see Killeen &amp; Moorkens 2004 for details).</b>
<b>b) Assessment method</b>	<b>Quality has been assessed by transects across suitable habitat and categorising 'cells' according to definitions of suitability (see Killeen &amp; Moorkens 2004 for details).</b>		
<p>During repeat monitoring of Cors Geirch in 2008 (Lloyd 2008) no habitat was classified as being in optimal condition and only 38% of the habitat was found to be in sub-optimal condition. On Waun Eurad, Killeen &amp; Moorkens (2008) found that the amount of suitable habitat was unchanged but there had been a slight decline in quality. It was suspected that this was due to the exceptionally wet conditions that summer, resulting in some areas losing vegetation cover, and that this natural event did not give cause for concern. In contrast, much of the habitat on Cors Erddreiniog was reported as being unsuitable due to inadequate grazing levels. Substantial areas have since been trimmed and grazed to improve quality.</p>			

<b>2.5.5 Short-term trend Period</b>	<b>2001-2012</b>	
<b>2.5.6 Short-term trend Trend direction</b>	<b>stable</b>	
<b>2.5.7 Long-term trend Period</b>	habitat extent was first mapped in 2003 so no data exists to speculate on long-term trend	
<b>2.5.8 Long-term trend Trend direction</b>	See 2.5.7	
<b>2.5.9 Area of suitable habitat for the species</b>	<b>a) Value in km<sup>2</sup></b>	<b>0.2</b>
	<b>b) Absence of data indicated as '0'</b>	
<b>2.5.10 Reason for change</b> Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to	<b>a) Genuine change?</b>	<b>False</b>
	<b>b) Improved knowledge/more accurate data?</b>	<b>False</b>
	<b>c) Use of different method (e.g. "Range tool")?</b>	<b>False</b>

<b>2.6 Main pressures</b>		
<b>a) Pressure</b>	<b>b) Ranking</b>	<b>c) Pollution qualifier</b>
	H = high importance M = medium importance L = low importance	
A04: grazing	H	
A02: modification of cultivation practices	M	
J02: human induced changes in hydraulic conditions	L	

The main changes to habitat quality in geyeri populations arise from alterations to grazing pressure and changes to hydrology (both natural and man-induced). On the Welsh sites the hydrological regime is primarily under control of CCW and hence seasonal fluctuations in rainfall pattern are the major influence on groundwater levels. Two of the three sites, however, suffer from vegetation succession as a result of insufficient grazing and manual strimming has been necessary to keep seepage fen open

**2.6.1 Method used –** **mainly based on expert judgement and other data**



<b>Pressures</b>	Information derived from Lloyd (2005) and Killeen & Moorkens (2004) in addition to casual observations of vegetation structure on these sites over the past 20 years or so
------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>2.7 Threats</b>		
<b>a) Threat</b>	<b>b) Ranking</b>	<b>c) Pollution qualifier</b>
	H = high importance M = medium importance L = low importance	
A04: grazing	H	
A02: modification of cultivation practices	M	

see above for Pressures

<b>2.7.1 Method used – Threats</b>	<b>expert opinion</b>
------------------------------------	-----------------------

<b>2.8 Complementary information</b>	
<b>2.8.1 Justification of % thresholds for trends</b>	
<b>2.8.2 Other relevant information</b>	
<b>2.8.3 Trans-boundary assessment</b>	

### **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*)**

<b>3.1 Population</b>		
<b>3.1.1 Population size</b>	<b>a) Unit</b>	<b>number of map 1x1 km grid cells</b>
Estimation of population size included in the SAC network		

	<b>b) Minimum</b>	<b>5</b>
	<b>c) Maximum</b>	<b>5</b>
<b>3.1.2 Method used</b>	<b>Complete survey/Complete survey or a statistically robust estimate</b>	
	Each of the SAC populations has been resurveyed in the current reporting period (Lloyd 2008, Killeen & Moorkens 2008) by sample transects across suitable habitat	
<b>3.1.3 Trend of population size within the network (short-term trend)</b>	<b>stable</b>	
	geyeri has been found in all five 1km squares on the Welsh SACs during the reporting period	

<b>3.2 Conservation measures</b>														
Conservation measures taken (i.e. already being implemented) within the reporting period and provided information about their importance, location and evaluation.														
<b>3.2.1 Measure</b>	<b>3.2.2 Type</b>					<b>3.2.3 Ranking</b>  H = high importance  M = medium importance  L = low importance	<b>3.2.4 Location</b>  where the measure is PRIMARILY applied			<b>3.2.5 Broad evaluation of the measure</b>				
	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
2.1: Maintaining grasslands and other open habitats				Y		H	Y				Y			

--