

**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:

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

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.

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 (Wales information only)
1.2 Species code	1016
1.3 Species scientific name	Vertigo moulinsiana
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Desmoulin's whorl snail

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?	<table> <tr> <td>a) regulations regarding access to property</td><td>No</td></tr> <tr> <td>b) temporary or local prohibition of the taking of specimens in the wild and exploitation</td><td>No</td></tr> <tr> <td>c) regulation of the periods and/or methods of taking specimens</td><td>No</td></tr> <tr> <td>d) application of hunting and fishing rules which take account of the conservation of such populations</td><td>No</td></tr> <tr> <td>e) establishment of a system of licences for taking specimens or of quotas</td><td>No</td></tr> <tr> <td>f) regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens</td><td>No</td></tr> <tr> <td>g) breeding in captivity of animal species as well as artificial propagation of plant species</td><td>No</td></tr> <tr> <td>h) other measures</td><td>No</td></tr> </table>	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
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																

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

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

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 No. CCW/SEW/07/2. Countryside Council for Wales.

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: S1016 - Desmoulin's Whorl Snail (*Vertigo moulinsiana*).

Killeen, I.J. 2000. Status and distribution of Des Moulin's whorl snail *Vertigo moulinsiana* on Cors Geirch SSSI. CCW Contract Science No. 373. Countryside Council for Wales, Bangor.

Killeen, I.J. 2004. Condition monitoring of *Vertigo moulinsiana* in Cors Geirch, Corsydd Llyn/Llyn Fens candidate Special Area of Conservation, Wales. CCW Contract Science No. 624. Countryside Council for Wales, Bangor.

Lloyd, D. 2008. The condition of *Vertigo moulinsiana* on Corsydd Llyn / Llyn Fens SAC. CCW File note, 10 October 2008. Countryside Council for Wales, Bangor.

Willing, M.J. 2016. The status of Desmoulin's Whorl Snail *Vertigo moulinsiana* at Rhos Goch NNR in 2015. NRW Evidence Report No. 157. Natural Resources Wales, Bangor.

Willing, M.J. 2017. A survey for Desmoulin's Whorl Snail *Vertigo moulinsiana* on Cors Geirch NNR/SSSI and the Afon Penrhos floodplain in 2016. NRW Evidence Report No. 210. Natural Resources Wales, Bangor.

Willing, M.J. in prep. A survey for Desmoulin's Whorl Snail *Vertigo moulinsiana*

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

on the Afon Penrhos floodplain in 2017. Natural Resources Wales, Bangor.
 Willing, M.J. 2018. Surveys for Desmoulin's Whorl Snail *Vertigo moulinsiana* on Cors Geirch NNR/SSSI and the Afon Penrhos floodplain & for Geyer's Whorl Snail *Vertigo geyeri* on Cors Geirch NNR in 2017. NRW Evidence Report No. 258. Natural Resources Wales, Bangor.

5. Range

5.1 Surface area (km ²)	
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 (km ²) 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	1998-2017
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 4
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	Decreasing (-)

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

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	
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 c) Unknown d) Method
6.16 Change and reason for change in population size	Genuine change Improved knowledge/more accurate data The change is mainly due to: Genuine change
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)? b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	Unknown 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	Decreasing (-)	
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		

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Mowing or cutting of grasslands (A08)	H
Intensive grazing or overgrazing by livestock (A09)	M

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

Extensive grazing or undergrazing by livestock (A10)	M
Drainage for use as agricultural land (A31)	H
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H
Drainage (K02)	H
Threat	Ranking
Mowing or cutting of grasslands (A08)	H
Intensive grazing or overgrazing by livestock (A09)	M
Extensive grazing or undergrazing by livestock (A10)	M
Drainage for use as agricultural land (A31)	H
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H
Drainage (K02)	H
Change of habitat location, size, and / or quality due to climate change (N05)	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

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

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

Adapt mowing, grazing and other equivalent agricultural activities (CA05)

Stop mowing, grazing and other equivalent agricultural activities (CA06)

Manage drainage and irrigation operations and infrastructures in agriculture (CA15)

Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes (CL01)

Improvement of habitat of species from the directives (CS03)

9.6 Additional information

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

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 | number of map 1x1 km grid cells (grids1x1) |
| b) Minimum | 1 |
| c) Maximum | 2 |
| d) Best single value | 1 |

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

Decreasing (-)

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

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

13.1 Justification of % thresholds for trends

13.2 Trans-boundary assessment

13.3 Other relevant Information

Distribution Map

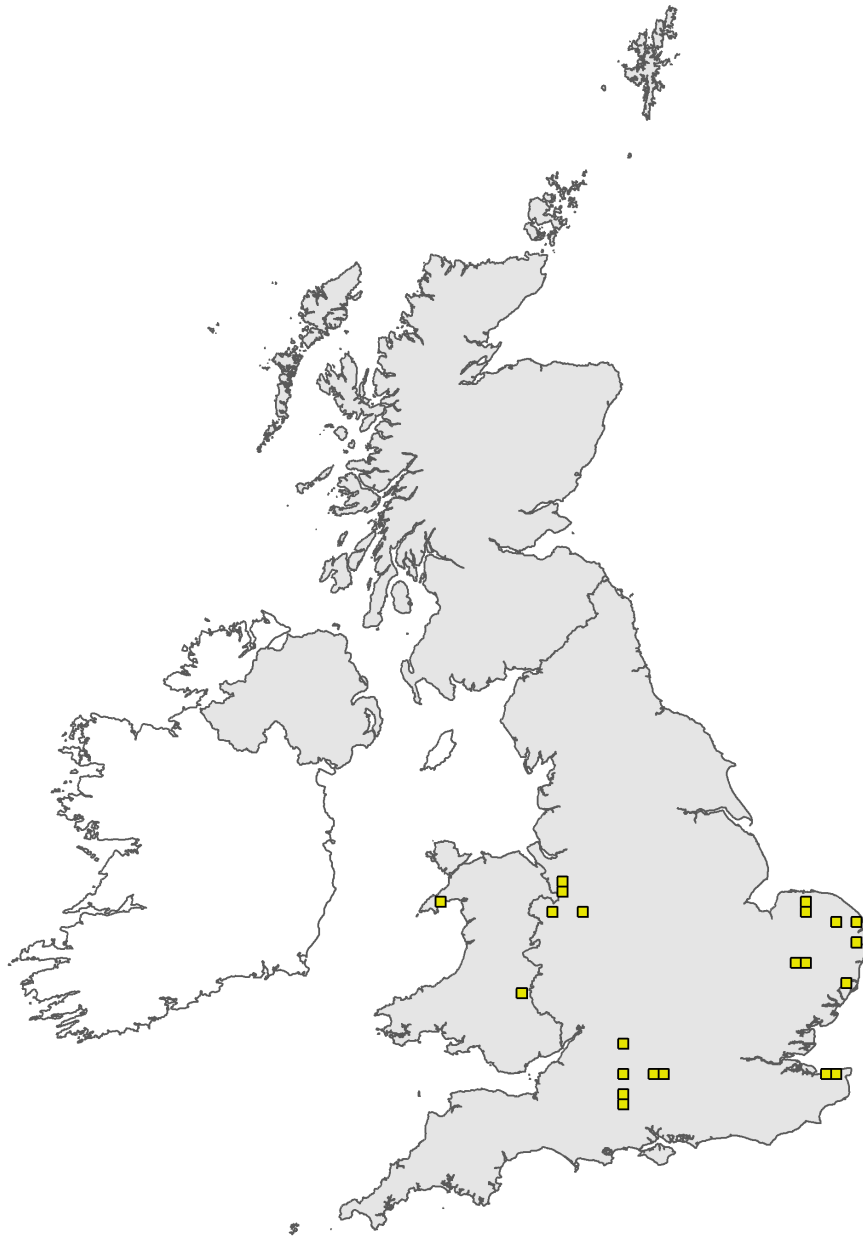


Figure 1: UK distribution map for S1016 - Desmoulin's whorl snail (*Vertigo moulinsiana*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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 S1016 - Desmoulin's whorl snail (*Vertigo moulinsiana*). 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: *Vertigo moulinsiana* (1016) Region code: ATL

Field label	Note
5.3 Short term trend; Direction	Short-term range trend is considered stable for this species.
5.12 Additional information	Whilst distribution information has not changed between reporting periods, recent surveys on Afon Penrhos floodplain and Rhos Goch have established continued presence, estimated population size and distribution and quantified areas of suitable habitat.
7.2 Sufficiency of area and quality of occupied habitat; Method used	The area of habitat occupied by this species has not been accurately mapped on any of the three sites. On Cors Geirch, it occupies relatively small patches of habitat. Lloyd (2008) repeated monitoring on Cors Geirch in 2008 and found that 93% of samples had suitable vegetation structure and composition and 100% of samples had suitable soil moisture conditions. No specific assessment of habitat quality has been attempted, although Common Standards Monitoring (Killeen 2004, Lloyd 2008) includes limited habitat attributes for the sole SAC population. On Rhos Goch, the snail was recorded in seven discrete pockets of fen over an area of 1.5 to 2ha but the occupied area is far smaller than this (Willing, 2016). On the Afon Penrhos floodplain, the snail is widely distributed over an area of 8ha of fen meadow. ' <i>Vertigo moulinsiana</i> occupies a wide range of fen conditions so potentially suitable habitat could occur anywhere on wetlands throughout Wales. Many such sites have had casual surveys of one form or another without <i>moulinsiana</i> being recorded so it is likely to be highly localised in its distribution, but estimating 'suitable habitat' is a meaningless exercise. All that can be said is that it occupies most of the available habitat on the three sites on which it has been recorded.' (Fowles, 2013).
7.5 Short term trend; Method used	Based on observed population declines on Cors Geirch and the likelihood that habitat quality is deteriorating as a result of increasing shading by willow scrub.
8.3 Additional information	Pressures: Populations on Cors Geirch and Rhos Goch are being impacted by scrub encroachment into fen habitat (L02). Both undergrazing (A10) and overgrazing (A09) may be issues on Cors Geirch. The population on Afon Penrhos floodplain has no statutory protection and is therefore more vulnerable to land use changes. Recent works including mowing/cutting for agriculture (A08), ditch clearance and drainage (A31 & K02) may have had a deleterious impact although the snail remains widespread where these have been undertaken. Threats: Populations on Cors Geirch and Rhos Goch could be threatened by run-off from adjacent agricultural land (A25 & A26). Climate change may cause increased drying out of seepages and result in habitat changes (N05). Existing pressures (A08, A09, A10, A31, L02, K02) are expected to continue to impact the species over the next two reporting periods and affect the long-term viability of the species.
9.6 Additional information	Recent conservation efforts on Cors Geirch and Rhos Goch have focussed on clearing scrub (CL01 & CS03) to provide more open fen conditions. Some control of grazing (CA05 & CA06) may be necessary on Cors Geirch. With no statutory protection, the Afon Penrhos floodplain is vulnerable to changes in agricultural practices such as grazing (CA05 & CA06) and hydrology (CA15). Given its importance in a Welsh, UK and European context, the site should be designated as a SSSI.

10.2 Additional information	<p>The population within the only Welsh SAC for <i>Vertigo moulinsiana</i> appears to have crashed from very high numbers 10 to 15 years ago to very low levels. Population size can fluctuate dramatically in <i>Vertigo</i> species from year to year in response to habitat changes, vegetation structure, humidity, hydrology and other factors. When coupled with episodic monitoring, it is difficult to determine if populations have been lost or markedly declined. However, low counts over two consecutive surveys (2016 & 2017) suggest that the population has crashed on Cors Geirch. Restorative scrub clearance is about to commence (January-February 2018) and grazing may have to be regulated. Provided water levels are maintained, the population on Rhos Goch should be secure provided that invasive scrub is kept in check periodically. Whilst Afon Penrhos floodplain remains a non-statutory site, the snail population is vulnerable to drainage and changes to agricultural practices. Given its importance in a Welsh, UK and European context, the site should be designated as a SSSI.</p>
12.6 Additional information	<p>The population on Cors Geirch has apparently declined dramatically between 2008 and 2016-17 from 100s to single figures. Of the three Welsh populations, Cors Geirch would have ranked 2nd in terms of numbers between Afon Penrhos (a non-statutory site) and Rhos Goch (a SAC but the snail is not a SAC feature).</p>