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:

S1015 - Round-mouthed whorl snail (*Vertigo genesii*)

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.

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NATIONAL LEVEL

1. General information

1.1 Member State	**UK (England information only)**
1.2 Species code	**1015**
1.3 Species scientific name	**Vertigo genesii**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Round-mouthed whorl snail

2. Maps

2.1 Sensitive species	No
2.2 Year or period	2013-2018
2.3 Distribution map	Yes
2.4 Distribution map Method used	Complete survey or a statistically robust estimate
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

Killeen. IJ.. 2015. Condition Monitoring of Vertigo genesii in Moor House-Upper Teesdale NNR/SAC. 2014 Report to Natural England.
Killeen. IJ. 2015b .Condition Monitoring of Vertigo genesii at Malham (Craven Limestone Complex SAC). Report to Natural England
Heaver, 2018. FAVOURABLE CONSERVATION STATUS: ENGLAND CONTRIBUTION: S1015 Round-mouthed Whorl Snail (Vertigo genesii). Draft statement. Unpublished, Natural England.

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

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	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	The Malham Tarn population cluster was surveyed in 2015, adding new detail to the original report announcing the discovery of this site. It added 3 new one kilometre squares. In terms of the calculation of range, this extra node does not increase the English range as given in the 3rd report. Further range extension is possible here, as the habitat resource appears to be extensive.	

6. Population

6.1 Year or period	2013-2018	
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) 9
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	number of map 10x10 km grid cells (grids10x10) 3
6.5 Type of estimate	Best estimate	
6.6 Population size Method used	Complete survey or a statistically robust estimate	
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	Complete survey or a statistically robust estimate	
6.11 Long-term trend Period	1995-2018	
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	

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	d) Method	
6.16 Change and reason for change in population size	Improved knowledge/more accurate data Use of different method The change is mainly due to:	Improved knowledge/more accurate data
6.17 Additional information	There is now a tighter resolution of the sites, thus influencing the monad count, and a slight change in sampling scope at Teesdale.	

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	Complete survey or a statistically robust estimate	
7.3 Short-term trend Period	2007-2018	
7.4 Short-term trend Direction	Stable (0)	
7.5 Short-term trend Method used	Complete survey or a statistically robust estimate	
7.6 Long-term trend Period	1994-2018	
7.7 Long-term trend Direction	Stable (0)	
7.8 Long-term trend Method used	Complete survey or a statistically robust estimate	
7.9 Additional information	The considered estimate for habitat for the English populations stands at 4.8ha (Heaver, 2018).	

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Intensive grazing or overgrazing by livestock (A09)	H
Abstraction from groundwater, surface water or mixed water (K01)	M
Droughts and decreases in precipitation due to climate change (N02)	M
Conversion from one type of agricultural land use to another (excluding drainage and burning) (A02)	M

Threat	Ranking
Intensive grazing or overgrazing by livestock (A09)	H
Abstraction from groundwater, surface water or mixed water (K01)	M
Droughts and decreases in precipitation due to climate change (N02)	M

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Conversion from one type of agricultural land use to another (excluding drainage and burning) (A02) M

8.2 Sources of information	Killeen 2015 & 2015b Killeen 2015 & 2015b Killeen 2015 & 2015b Killeen 2015 & 2015b
8.3 Additional information	The pressures & threats have remained the same, effectively, since the 3rd report.

9. Conservation measures

9.1 Status of measures	a) Are measures needed?	Yes
	b) Indicate the status of measures	Measures identified, but none yet 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	Only outside Natura 2000	
9.4 Response to the measures	Short-term results (within the current reporting period, 2013-2018)	
9.5 List of main conservation measures		

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

9.6 Additional information	The issue was the stock pressure on parts of the Great close mire which seems to have resulted in the genesii populations being absent from seemingly suitable looking habitat in the mire centre. Whilst this is a historic feature of stock management, new agri-environment scheme prescriptions may contain the impact a bit more. This might result in less stock trampling within the mire, though this is tricky to control as stock are able to freely move. it may be more an issue of stock numbers.

10. Future prospects

10.1 Future prospects of parameters	a) Range b) Population c) Habitat of the species
10.2 Additional information	It is likely that other population centres exist within the extensive flsuhed systems of the Craven Limestone, so then number of occupied 1 kms squares is likwely to rise, though these populations are currently present but unknown, so there will be no real population expansion.

11. Conclusions

11.1. Range
11.2. Population
11.3. Habitat for the species
11.4. Future prospects

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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	
	c) Maximum	
	d) Best single value	6
12.2 Type of estimate	Best estimate	
12.3 Population size inside the network Method used	Complete survey or a statistically robust estimate	
12.4 Short-term trend of population size within the network Direction	Stable (0)	
12.5 Short-term trend of population size within the network Method used	Complete survey or a statistically robust estimate	
12.6 Additional information	Vertigo genesii is not mentioned within the Craven Limestone complex, despite being the 2nd English location. However, its principle habitat, 7220 Petrifying springs with tufa formation (Cratoneurion), is a principle feature, so it is protected by dint of that. Within the Moor House - Upper Teesdale SAC, it remains stable, the loss of the small Holwick fell population being over 15 years ago now.	

13. Complementary information

13.1 Justification of % thresholds for trends	
13.2 Trans-boundary assessment	
13.3 Other relevant Information	

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Distribution Map

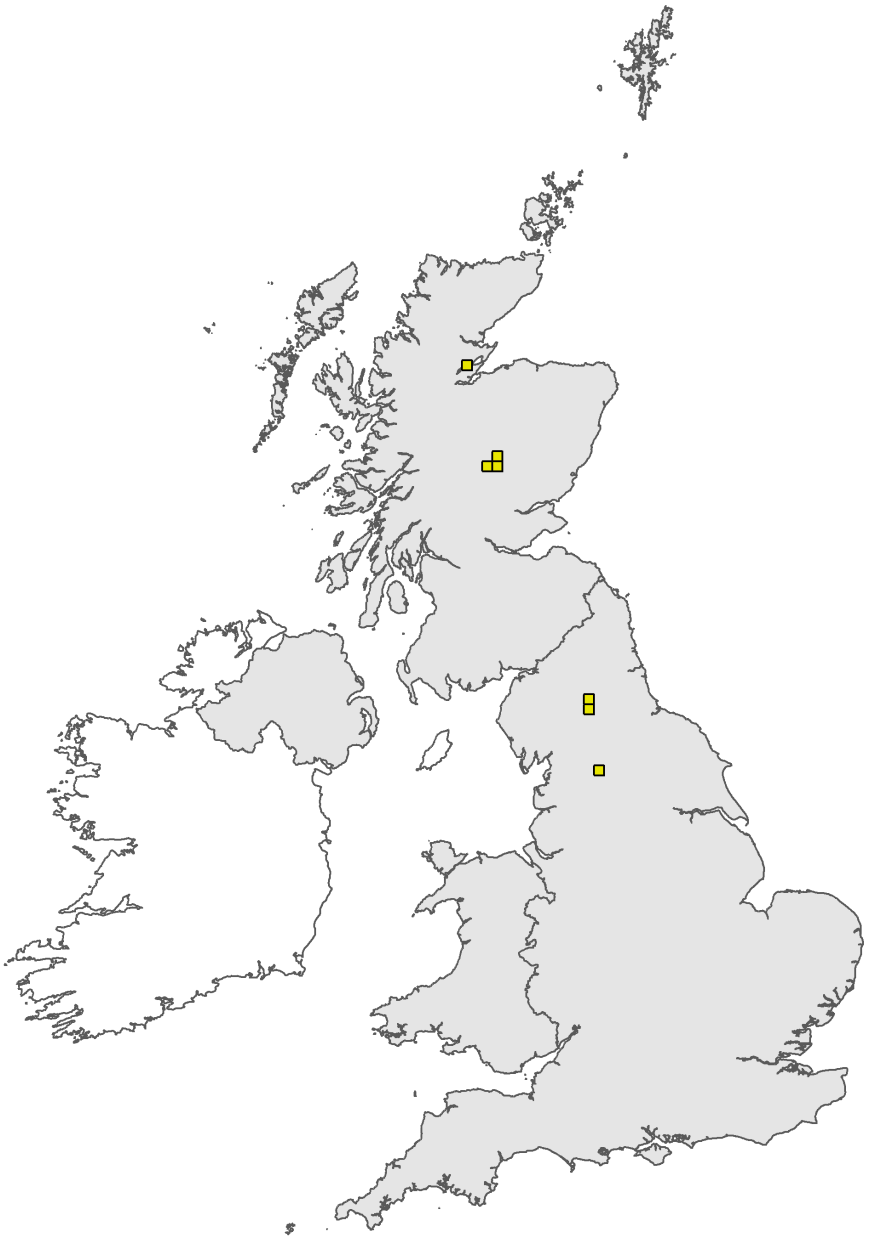

Figure 1: UK distribution map for S1015 - Round-mouthed whorl snail (*Vertigo genesii*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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 S1015 - Round-mouthed whorl snail (*Vertigo genesii*). 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 genesii (1015) Region code: ATL

Field label	Note
6.2 Population size	This survey has confirmed the survival of Vertigo genesii at Malham with the core area lying in the central part of the site east of Street Gate which corresponds to previous surveys. The species was also found on the flush slopes in the SE end of the Street Gate site. In Great Close Mire V. genesii was recorded at the known location and at a new site at the eastern end of the complex. In the most suitable (optimal) habitat the total number of V. genesii individuals/sample was 100 (equivalent to a density of c. 1600m-2) comprising 44% adults and 56% juveniles. All potentially suitable habitat at the Street Gate site lies within an area of just over 1 ha, of which at least 0.5 ha may be considered to be optimal and sub-optimal. However, much of the site is being negatively impacted by cattle trampling. Patches of optimal habitat with rich fen and mossy mounds are present in Great Close Mire but the areas supporting V. genesii have not been determined as part of this assessment.
6.6 Population size; Method used	For Upper Teesdale: Starting at the 0 metre end, the habitat (at the plant community level) along a measuring tape was described and the linear distance of that habitat type measured. This was repeated every time the habitat changed, thereby delineating uniform plant community zones along the transect. The condition of the habitat in each zone was classified as optimal, sub-optimal or unsuitable (or combinations of these), and the ground moisture levels in each zone were classified as optimal wetness, too wet or too dry. The start and end points of the transects were marked with wooden stakes. Additional recording included GPS and photos of marked transect ends to be used to both record their character and relocate them in the future. For baseline purposes, photographs along the transect were also taken for future comparison purposes. The locations of the sample stations were chosen as a representative area for the species at each site, and for convenience of access and of relocation. For Malham, we basically established new transects of the form made at Upper Teesdale, to provide a new starting point baseline, as the original survey discovery basically concentrated on species presence.
6.8 Short term trend; Direction	Though we have an improved understanding, there is stablity in the English population, as the Malham population centre was obviously present all along.
6.14 Long term trend; Method used	Heaver, 2018: There is little information available on historical populations. The species was only added to the UK species list in England in 1980, though it was known before as a sub-fossil. The larger Scottish population centres were discovered in 1998-99. Teeside: 1980, Sand Sike supported a small area of moss and sedge habitat principally on the west side of the road which held the snail. In 1999, following a better understanding of the habitat used, Red Sike and Wildscar Sike were added. In 2002 the Cronkely Fell populations were added, with Merrygill beck in 2009. Malham: First discovered by Norris in 2005 in Great Close Mire Field. Killeen 2015b details the new baseline there. Population stability is considered over this time period as continued population persistence in the known flushes, this being later suplemented by more vigourous transect and point assessments.
6.17 Additional information	The number of Malham monads is 3 rather than 4 as reported in the 3rd report, this down to better accuracy. The monitoring at Widdybank fell now excludes one small flush system amongst juniper, as there is a conflict in management between the 2 SAC features. These together reduce the monad count down from 11 to 9, and so stable and consistent with the 3rd reporting period data.

10.2 Additional information	Taken from the commissioned survey: The baseline condition assessment for Vertigo genesii at Malham was determined by how well the site meets the key targets for the attributes associated with this species. There is an extensive area of habitat for the species in the site east of Street gate which is in relatively good condition and supports good numbers of Vertigo genesii. There is also good habitat in good condition in parts of Great Close Mire, with an extensive area of potentially suitable habitat. Population, Habitat and Future Prospects were all assessed as Favourable Maintained, and, therefore, the overall assessment is Favourable Maintained. Based upon these assessments, recommendations have been made for future Condition Assessments. General recommendations for management at each site have also been made.
12.1 Population size inside the pSCIs, SCIs and SACs network	Moorhouse-Upper Teesdale SAC: With the exception of Holwick fell, all of the 5 main sites met all of the Conservation Objectives and were therefore assessed as Favourable (maintained). Holwick Fell was assessed as Favourable (declining) for habitat extent, Favourable (maintained) for habitat quality, and Unfavourable bad for Vertigo genesii. However, bringing Holwick Fell to favourable condition for V.genesii may have implications for the loss of other (scrub) habitat at Holwick that is considered to have a range of species that contribute to the value of the SAC (i.e. supportive and typical species but not listed as qualifying interests).