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:

S1528 - Marsh saxifrage (*Saxifraga hirculus*)

NORTHERN IRELAND

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 (Northern Ireland information only)**
1.2 Species code	**1528**
1.3 Species scientific name	**Saxifraga hirculus**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Marsh saxifrage

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

Beesley, S. (2006). County Antrim Scarce, Rare and Extinct Vascular Plant Register. Ulster Museum. Belfast.
Hackney, P. 1992 Flora of the North-east of Ireland. Third Edition. Institute of Irish Studies, the Queen's University of Belfast.
KELLY, P. 1999. Survey of the historic localities of Saxifraga hirculus. Report to English Nature.
Muldoon, C.S., Waldren, S. & Lynn, D. (2015) Monitoring recommendations for Marsh Saxifrage (Saxifraga hirculus L.) in the Republic of Ireland. Irish Wildlife Manuals, No. 88. National Parks and Wildlife Service, Department of the Arts, Heritage and the Gaeltacht, Ireland.
NIEA. Unpublished surveys and reports. Various years
PRESTON. C. D., PEARMAN, D.A. & DINES, T.D. 2002. New Atlas of the British and Irish Flora. Oxford University Press Joint Nature Conservation Council 2010. UK priority species pages - Version 2 Saxifraga hirculus version 2

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

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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	No change The change is mainly due to:	
5.12 Additional information		

6. Population

6.1 Year or period	2013-2018	
6.2 Population size (in reporting unit)	a) Unit	number of individuals (i)
	b) Minimum	
	c) Maximum	
	d) Best single value	142
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	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		
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		

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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)?	No
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	Yes
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		
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
Intensive grazing or overgrazing by livestock (A09)	M
Burning for agriculture (A11)	H
Reduced fecundity / genetic depression (e.g. inbreeding or endogamy) (L05)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H

Threat	Ranking
Intensive grazing or overgrazing by livestock (A09)	M
Burning for agriculture (A11)	H
Droughts and decreases in precipitation due to climate change (N02)	M
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	H

Reduced fecundity / genetic depression (e.g. inbreeding or endogamy) (L05)	H
Mixed source air pollution, air-borne pollutants (J03)	H
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H

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

Increase the population size and/or improve population dynamics (improve reproduction success, reduce mortality, improve age/sex structure) (related to 'Population')

9.3 Location of the measures taken

Only inside 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 impact of mixed source pollution (CJ01)
Implement climate change adaptation measures (CN02)
Adapt mowing, grazing and other equivalent agricultural activities (CA05)
Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures (CA04)
Reinforce populations of species from the directives (CS01)

9.6 Additional information

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

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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 individuals (i)
	b) Minimum	
	c) Maximum	
	d) Best single value	142
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		

13. Complementary information

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

Distribution Map

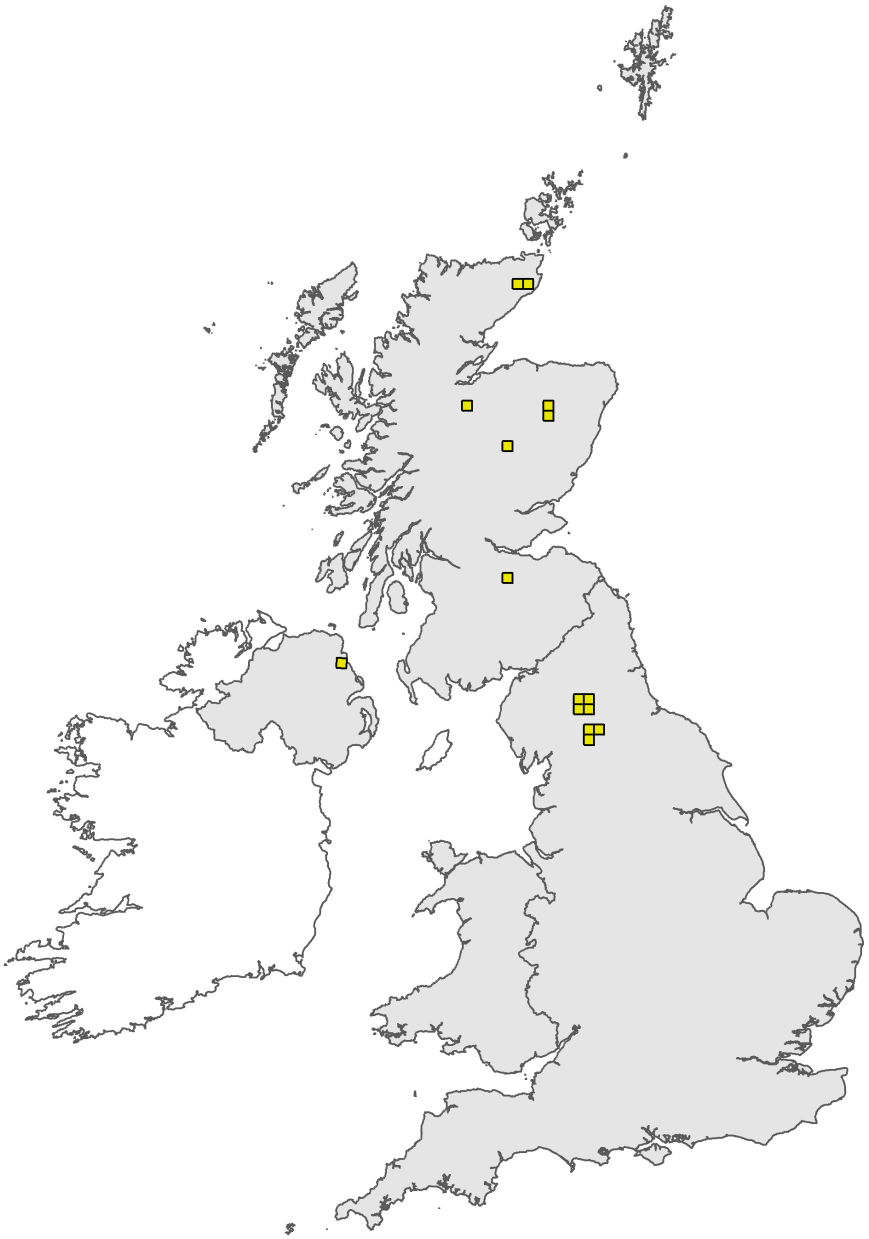

Figure 1: UK distribution map for S1528 - Marsh saxifrage (*Saxifraga hirculus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

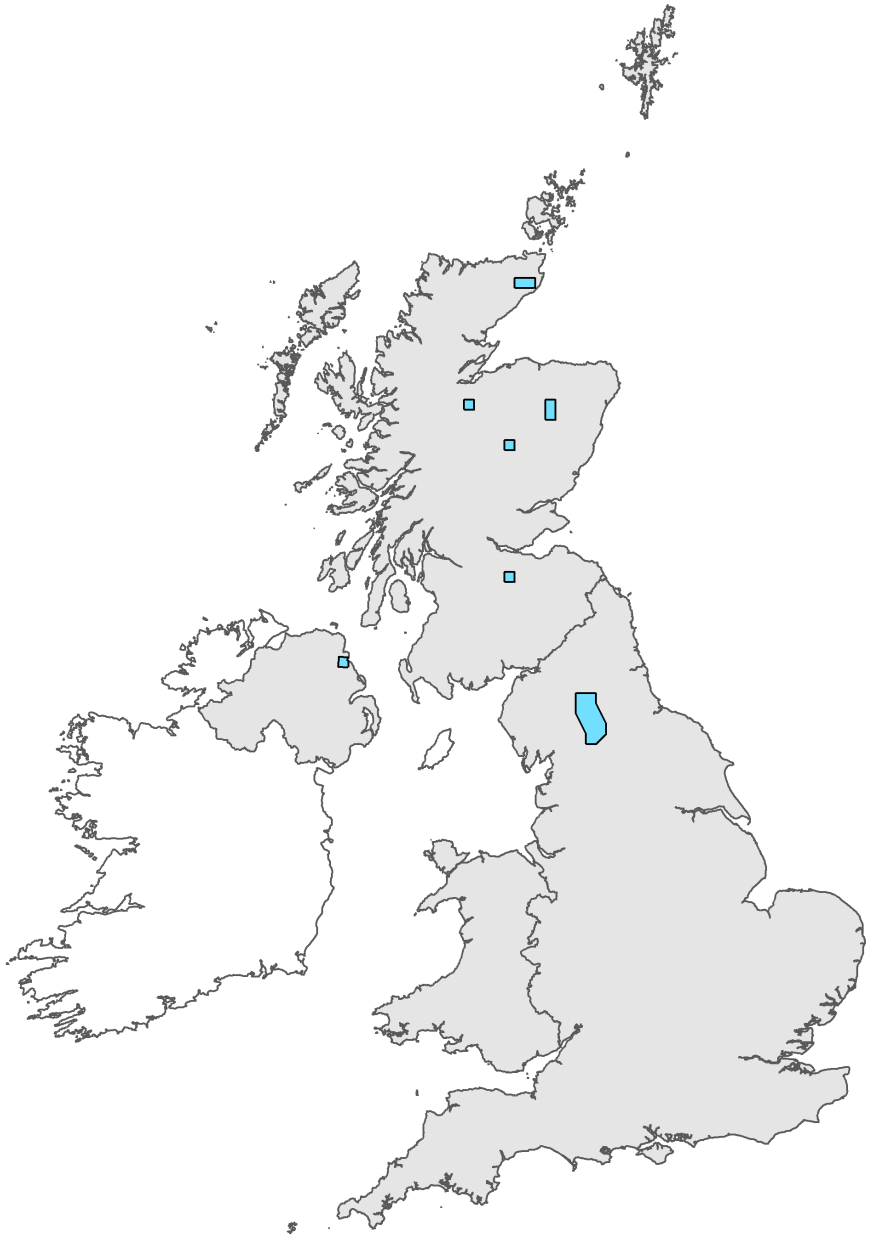

Figure 2: UK range map for S1528 - Marsh saxifrage (*Saxifraga hirculus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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: Saxifraga hirculus (1528)

Field label	Note
2.3 Distribution map	Species is generally found in upland base-rich/neutral flushes. Existing colony on the Garron Plateau SAC was first recorded in 1920. Since 1988, the Garron location (near Collin Top) has been the only site for the species in NI. Species was previously recorded at Lough Narron/Long Mountain in Co Antrim, but has not been seen since 1884, despite searching. There was also a second site for the species on the Garron Plateau at Crocknavar, but the species has not been recorded here since 1914.

Species name: Saxifraga hirculus (1528) Region code: ATL

Field label	Note
6.2 Population size	In 2017 there were 142 individuals, with 82 ramets and 60 flowerheads recorded.
7.1 Sufficiency of area and quality of occupied habitat	Species is found in upland base-rich flushes, generally within blanket bog. There is no estimate of the extent of this habitat in NI; although these are widely distributed around NI, especially on the base- /calcareous rocks of Cos. Antrim, Londonderry (Tertiary Basalts) and Fermanagh (Carboniferous Limestone), they tend to be very small in extent. So in overall terms, there appears to be sufficient habitat of sufficient quality for the species; however, in terms of where the species is actually found, the habitat here is not of sufficient quality, although measures are in place to improve the quality (see below 8.1 and 9.1).
8.1 Characterisation of pressures/ threats	Grazing levels are crucial to maintaining the species - too little grazing will favour more competitive species; too much grazing will prevent species from flowering and setting seed. In the absence of achieving appropriate grazing levels, NIEA staff have had to physically cut vegetation to remove competing species. Such a small colony is very vulnerable to fire damage during dry weather. The species is very sensitive to water balance - however, likelihood of anthropogenic changes to hydrology is limited because of SAC status. The blanket boh habitat within which the species occurs is very sensitive to aerial Nitrogen deposition. The species is essentially a glacial relict and is therefore potentially very sensitive to climate change - both changes in temperature and changes in rainfall. in addition, such a small isolated colony is under considerable threat of extinction due to genetic impoverishment.
9.1 Status of measures	The site is currently within the Garron Plateau SAC and management measures are in place to maintain and enhance the colony. These involve fencing to control grazing and cutting the vegetation to prevent other species outcompeting the Saxifraga hirculus. It is possible that controlled grazing could be re-introduced in addition to cutting. The colony was declining in numbers of rametes, and severely reduced flowering. However, the species has recovered somewhat recently, with viable seed collected and sent to Kew Gardens for propagation. It is possible that translocation to other suitable sites within the Garron Plateau SAC may be undertaken in the future.
11.5 Overall assessment of Conservation Status	Range is Favourable; Population has been assessed as Unfavourable Inadequate - on the basis that recent habitat work at the colony has restored numbers of ramets and flowering plants to a reasonable level; however, such a tiny colony could not be reasonable assessed as favourable. The habitat for the species is currently assessed as Favourable (given recent ongoing management measures), and across NI there are other areas of suitable habitat. However, we have assessed Future Prospects as Unknown, on the basis that a single small colony is extremely vulnerable to extinction through natural or anthropogenic factors. Hence an overall assessment of Unfavourable Inadequate.

12.1 Population size inside the pSCIs, SCIs and SACs network	The only known site for the species in NI is the Garron Plateau SAC. In 2017 there were 142 individuals, with 82 ramets and 60 flowerheads recorded.