Report under The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A

2019-2024

Conservation status assessment for the habitat:

H7220 - Petrifying springs with tufa formation (*Cratoneurion*)

Wales

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This report was produced by JNCC in collaboration with Natural Resources Wales.

This document should be cited as:

Natural Resources Wales and JNCC. (2026). Conservation status assessment for the habitat: H7220 Petrifying springs with tufa formation (*Cratoneurion*).

Important note - Please read

- The information in this document represents Wales Report under The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A, for the period 2019-2024.
- It is based on supporting information provided by Natural Resources Wales, which is documented separately.
- The Habitats Regulations reporting 2019-2024 Approach Document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- Maps showing the distribution and range of the habitat are included.
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the assessments. Further underpinning explanatory notes are available in the related country reports.
- 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; and/or (iii) the field was not relevant to this habitat (section 11 National Site Network coverage for Annex I habitats).

Further details on the approach to the Habitats Regulations Reporting 2019-2024 are available on the JNCC website.

Assessment Summary: Petrifying springs with tufa formation (*Cratoneurion*)

Distribution Map

Range Map

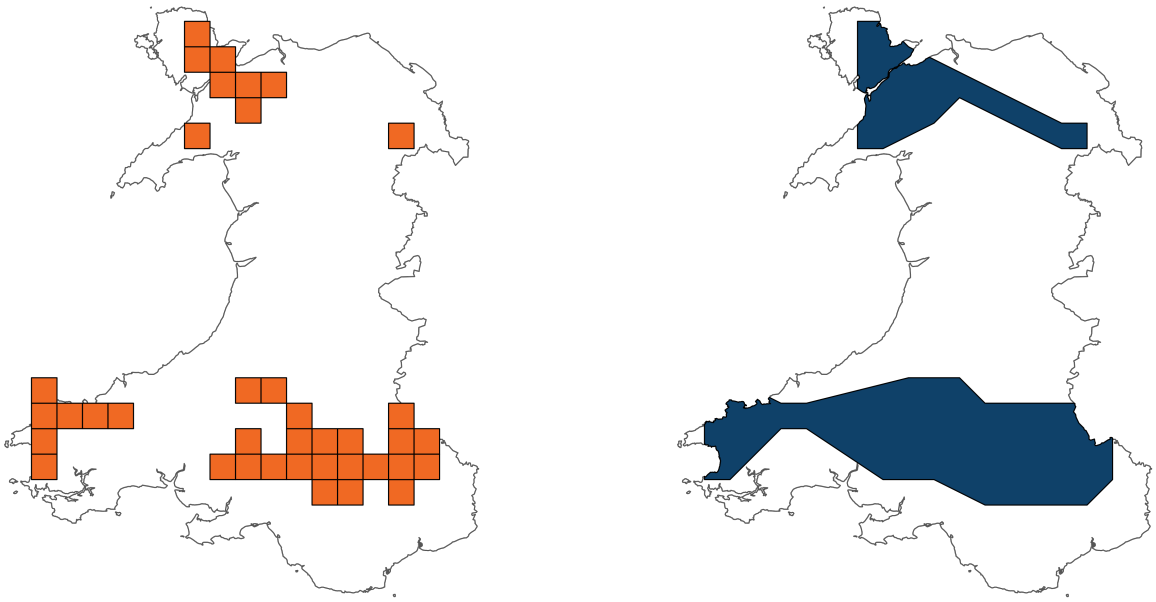

Figure 1: Wales distribution and range map for H7220 - Petrifying springs with tufa formation (*Cratoneurion*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority. The 10km grid square distribution map is based on available habitat records within the current reporting period.

Table 1: Table summarising the conservation status for H7220 - Petrifying springs with tufa formation (*Cratoneurion*). Overall conservation status for habitat is based on assessments of range, area covered by habitat, structure and functions, and future prospects.

Overall Conservation Status (see section 10)

Unfavourable-bad (U2)

Breakdown of Overall Conservation Status

Range (see section 4)	**Unknown (XX)**
Area covered by habitat (see section 5)	**Unfavourable-inadequate (U1)**
Structure and functions (see section 6)	**Unknown (XX)**
Future prospects (see section 9)	**Unfavourable-bad (U2)**

List of Sections

National Level

1. General information

1.1 Country	Wales
1.2 Habitat code	H7220 - Petrifying springs with tufa formation (*Cratoneurion*)

2. Maps

2.1 Year or period	1990-2012
2.2 Distribution map	Yes
2.3 Distribution map; Method used	Based mainly on extrapolation from a limited amount of data

2.4 Additional information

No additional information

Biogeographical Level

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs ATL

3.2 Sources of information

See section 13 References

4. Range

4.1 Surface area (km²)	6,577.84

4.2 Short-term trend; Period

4.3 Short-term trend; Direction	Unknown
4.4 Short-term trend; Magnitude	

a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
4.5 Short-term trend; Method used	Insufficient or no data available
4.6 Long-term trend; Period	
4.7 Long-term trend; Direction	Unknown
4.8 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Rate of decrease	
4.9 Long-term trend; Method used	Insufficient or no data available

4.10 Favourable Reference Range (FRR)

a) Area (km²)	
b) Pre-defined increment	Current range is less than 2% smaller than the FRR
c) Unknown	No
d) Method used	Reference-based approach
e) Quality of information	moderate

4.11 Change and reason for change in surface area of range

a) Change	No
b) Genuine change	

c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

4.12 Additional information

No additional information

5. Area covered by habitat

5.1 Year or period	1990-2012
5.2 Surface area (km²)	
a) Minimum	
b) Maximum	
c) Best single value	0.0566
5.3 Type of estimate	Best estimate
5.4 Surface area; Method used	Based mainly on extrapolation from a limited amount of data
5.5 Short-term trend; Period	
5.6 Short-term trend; Direction	Unknown
5.7 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
5.8 Short-term trend; Method used	Insufficient or no data available

5.9 Long-term trend; Period	
5.10 Long-term trend; Direction	Unknown
5.11 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Confidence interval	
d) Rate of decrease	
5.12 Long-term trend; Method used	Insufficient or no data available
5.13 Favourable Reference Area (FRA)	
a) Area (km²)	
b) Pre-defined increment	Current area is between 2% and 10% smaller than the FRA
c) Unknown	No
d) Method used	Reference-based approach
e) Quality of information	moderate

5.14 Change and reason for change in surface area of range

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

5.15 Additional information

No additional information

6. Structure and functions

6.1 Condition of habitat (km²)	
Area in good condition	
ai) Minimum	0
aii) Maximum	0
Area not in good condition	
bi) Minimum	0
bii) Maximum	0
Area where condition is unknown	
ci) Minimum	0.0566
cii) Maximum	0.0566
6.2 Condition of habitat; Method used	Insufficient or no data available
6.3 Short-term trend of habitat area in good condition; Period	
6.4 Short-term trend of habitat area in good condition; Direction	Unknown
6.5 Short-term trend of habitat area in good condition; Method used	Insufficient or no data available
6.6 Typical species	
Has the list of typical species changed in comparison to the previous reporting period?	No
6.7 Typical species; Method used	
6.8 Additional information	

Typical species were not used directly in the assessment of conservation status for habitat structure and function as a comprehensive list of typical species for each habitat

was not available. However, the status of typical species was considered when the condition of individual sites was assessed using Common Standards Monitoring Guidance. Common Standards Monitoring (CSM) data was used to assess the area of habitat in 'good' and 'not good' condition (field 6.1). Species were a component of the attributes assessed under CSM. Therefore, an assessment of species is considered to have formed part of the reporting under field 6.1 which supported the Habitats Structure and Function assessment (field 10.3).

7. Main pressures

7.1 Characterisation of pressures

Table 2: Pressures affecting the habitat, including timing and importance/impact ranking. Pressures are defined as factors acting currently and/or during the reporting period (2019–2024). Rankings are: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Pressure	Timing	Ranking
PA07: Intensive grazing or overgrazing by livestock	Ongoing and likely to be in the future	High (H)
PA05: Abandonment of management/use of grasslands and other agricultural and agroforestry systems (e.g. cessation of grazing, mowing or traditional farming)	Ongoing and likely to be in the future	High (H)
PA08: Extensive grazing or undergrazing by livestock	Ongoing and likely to be in the future	High (H)
PM07: Natural processes without direct or indirect influence from human activities or climate change	Ongoing and likely to be in the future	High (H)
PA17: Agricultural activities generating pollution to surface or ground waters (including marine)	Ongoing and likely to be in the future	High (H)
PL02: Drainage (mixed or unknown drivers)	Ongoing and likely to be in the future	Medium (M)
PL01: Abstraction from groundwater, surface water or mixed water (mixed or unknown drivers)	Only in future	Medium (M)
PJ03: Changes in precipitation regimes due to climate change	Ongoing and likely to be in the future	Medium (M)

PK04: Atmospheric N-deposition	Ongoing and likely to be in the future	High (H)

7.2 Sources of information

See section 13 References

7.3 Additional information

No additional information

8. Conservation measures

8.1: Status of measures

a) Are measures needed?	Yes
b) Indicate the status of measures	Measures identified, but none yet taken
8.2 Main purpose of the measures taken	
8.3 Location of the measures taken	
8.4 Response to measures	

8.5 List of main conservation measures

Table 3: Key conservation measures addressing current pressures and/or anticipated threats during the next two reporting periods (2025–2036). Measures are ranked by importance/impact: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Conservation measure	Ranking
MA05: Adapt mowing, grazing and other equivalent agricultural activities (e.g. burning)	Medium (M)
MA04: Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures	High (H)
MM01: Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes that occur without direct or indirect influence from human activities or climate change	High (H)

MA10: Reduce/eliminate point or diffuse source pollution to surface or ground waters (including marine) from agricultural activities	High (H)
MA13: Manage agricultural drainage and water abstraction (incl. the restoration of drained or hydrologically altered habitats)	High (H)
MA01: Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land	Medium (M)
MK01: Reduce impact of mixed source pollution	Medium (M)
MC09: Manage/reduce/eliminate air pollution from resource exploitation and energy production	Medium (M)
MA11: Reduce/eliminate air pollution from agricultural activities	Medium (M)

8.6 Additional information

No additional information

9. Future prospects

9.1a Future trends of parameters

ai) Range	Unknown
bi) Area	Unknown
ci) Structure and functions	Very negative - important deterioration

9.1b Future prospects of parameters

aii) Range	Unknown
bii) Area	Unknown
cii) Structure and functions	Bad

9.2 Additional information

No additional information

10. Conclusions

10.1 Range	Unknown (XX)

10.2 Area	Unfavourable-inadequate (U1)
10.3 Specific structure and functions (incl. typical species)	Unknown (XX)
10.4 Future prospects	Unfavourable-bad (U2)
10.5 Overall assessment of Conservation Status	Unfavourable-bad (U2)
10.6 Overall trend in Conservation Status	Unknown

10.7 Change and reason for change in conservation status

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

10.7 Change and reason for change in conservation status trend

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

10.8 Additional information

No additional information

11. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex I habitat types

11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (km²)

a) Minimum	
b) Maximum	
c) Best single value	0.037
11.2 Type of estimate	Best estimate
11.3 Habitat area inside the network; Method used	Based mainly on extrapolation from a limited amount of data

11.4 Short-term trend of habitat area within the network; Direction	Unknown
11.5 Short-term trend of habitat area within the network; Method used	Insufficient or no data available
11.6 Short-term trend of habitat area in good condition within the network; Direction	Decreasing
11.7 Short-term trend of habitat area in good condition within the network; Method used	Insufficient or no data available

11.8 Additional information

No additional information

12. Complementary information

12.1 Justification of percentage thresholds for trends

No justification information

12.2 Other relevant information

No other relevant information

13. References

Biogeographical and marine regions

3.2 Sources of information

Blackstock, T.H., Howe, E.A., Stevens, J.P., Burrows, C.R. & Jones, P.S. (2010). Habitats of Wales: a comprehensive field survey, 1979-1997. University of Wales Press, Cardiff. 229 pp.

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Farr, G., Graham, J. & Stratford, C. (2014). Survey characterisation and condition assessment of Palustriella dominated springs H7220 Petrifying springs with tufa formation (Cratoneurion). Centre for Ecology and Hydrology and the British Geological Survey (NERC) for Natural Resources Wales, Evidence Report No.136.

Godfrey, A. 2009. Invertebrate survey of calcareous seepages in South Wales. Report to the Countryside Council for Wales.

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Howe, M.A. (in prep.). A Dossier of Qualifying Terrestrial and Freshwater Invertebrate Species and Assemblages on Welsh SSSI. Natural Resources Wales, Bangor.

JNCC (2018). Nitrogen exceedance of Annex I habitats in SACs. Excel spreadsheet provided 29 May 2018.

Jones, P.S. (2018b). H7110_S6 Structure and functions, Excel s/s. Natural Resources Wales.

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Jones, P.S., Stevens, J., Bosanquet, S.D.S., Turner, A.J., Birch, K.S. & Reed, D.K. (2012). Distribution, extent and status of Annex I wetland habitats in Wales: supporting material for the 2013 Article 17 assessment. Countryside Council for Wales, Bangor.

Kay, L. (2018). N deposition extent of exceedance of CL for article 17 all habitats 2018, Excel s/s/. Natural Resources Wales, Bangor.

Milner, R. (2018). H7220_area_results_R-Millner_final. Excel s/s. Natural Resources Wales, Bangor.

Natural England and RSPB, 2014. Climate Change Adaptation Manual.

NRW (2018a). SAC and SPA Monitoring Programme Results 2013-2018. Internal NRW Dataset (Excel spreadsheet).

NRW (2018b). SAC & SPA Monitoring Programme planning spreadsheet 2013 – 2018. Internal NRW Dataset (Excel spreadsheet).

NRW (2018c). Actions Database. Internal NRW Database.

Stevens, D.P., Smith, S.L.N., Blackstock, T.H., Bosanquet, S.D.S. & Stevens, J.P. (2010). Grassland of Wales: A survey of lowland species-rich grasslands, 1987 – 2004. University of Wales Press, Cardiff.

Stevens, J. (2012a). GIS layer – data processing notes – A17 reporting 2012 H7220. Internal file note, Countryside Council for Wales.

Stevens, J., Jones, P.S. & Bosanquet, S.D.S. (2012b). Art17 2012 H7220 Petrifying springs with tufa.lyr. ARC GIS Data layer.

UK Government (2010). The Air Quality Standards Regulations 2010. Available from: https://www.legislation.gov.uk/uksi/2010/1001/contents

Welsh Government (2023). The Agriculture (Wales) Act 2023. Available from: https://www.gov.wales/agriculture-wales-act-2023

Welsh Government (2024a). The Clean Air Plan for Wales 2024. Available from: https://www.gov.wales/clean-air-plan-wales-healthy-air-healthy-wales

Welsh Government (2024b). The Environment (Air Quality and Soundscapes) (Wales) Act 2024. Available from: https://www.legislation.gov.uk/asc/2024/2/contents

Main pressures

7.2 Sources of information

No sources of information

14. Explanatory Notes

Field label	Note
2.3: Distribution map; Method used	The distribution map for this habitat is based entirely on the analysis undertaken for the 2012 reporting round (Stevens 2012a; Stevens et al., 2012b). This is based on a GIS analysis of Phase 2 (NVC) level data collected between 1996 and 2012; Phase 1 (Habitat Survey of Wales) data were not used. The NVC data result from records for M37 and M38 (including mosaics) from the following surveys: 1. NVC surveys of upland sites undertaken for the Brecon Beacons (2004, 14 records), Carneddau extensions (2001, 2 records), Eastern Carneddau (2002, 8 records), Glydeiriau (1996-1998, 11 records), Mynydd Eglwyseg (2002, 6 records), Mynydd Llangatwg_Mynydd Llangynidr (2003, 14 records), Mynydd Preseli SSSI (2004-2005, 10 records), and the Western Carneddau (2002, 4 records). Stevens (2012a) provides further details of these surveys, with external contractors undertaking all of these with the exception of Mynydd Preseli and Gylderiau which were undertaken by CCWs internal Lowland Peatland Survey of Wales team and Alex Turner respectively. Taken together, these sources provide 69 records all of which date from no earlier than 1996. 2. Lowland NVC survey records from the Lowland grassland survey 1987-2004 (Stevens et al., 2010), with one record dating from 1990 and the remaining 3 from 2003. 3. Lowland NVC records from the Lowland Peatland Survey of Wales (2004-ongoing; Jones et al., 2011), with 11 records dating from 2004 or later. 4. 55 records for this habitat made by NRW non-vascular plants specialist (Sam Bosanquet), all post-dating 2004.

	Taken together, these records provide confirmation of the presence of M37 and M38 across 38 10 km squares. No records date from earlier than 1990. No additional post 2012 records have been used.
4.3: Short-term trend; Direction	We simply lack the evidence to pass a judgement on Range, hence unknown. Subject Matter Expert suspicion is that it may have decreased.
4.11: Change and reason for change in surface area of range	The distribution data submitted in 2013 has not been updated. Changes in surface area or range may actually have occurred since the last reporting period, but NRW has no system in place for monitoring or recording such changes.
5.2: Surface area	The extent estimate for H7220 is based wholly on the habitat inventory compiled for the second reporting round (Stevens et al., 2012b), with no subsequent up-dates. Records resulting from the upland NVC surveys dominate the data-base with a combined area of 5.61 ha. Records from the two lowland NVC programmes (for grasslands and peatlands) amounted to only 0.044 ha as of 2012. Distribution records collected by Sam Bosanquet were given a nominal area of 0.0001 ha as these are essentially point records; the resultant sum area is 0.0055 ha. Collectively these records are unlikely to provide a reliable impression of the extent of H7220 in Wales. Furthermore, it has not been possible to assess the findings of Farr et al. (2014) to determine if these add any area data.
5.6: Short-term trend; Direction	There is no quantitative evidence on which to assess changes in range or surface area over the short or long term.
5.14: Change and reason for change in surface area	The assessment of 'no' is based on the use for a second reporting exercise of the 2012 data with no inclusion of recent survey data coupled with lack of evidence of genuine change due to lack of a system for monitoring and recording changes in the extent of Annex 1 habitats.
7.1: Characterisation of pressures	This section is based on evidence reviewed in 2018 with no formal update since then. Analysis of Pressures and Threats has utilised a number of data sources, with NRWs

Action Database (NRW, 2018c) serving as a critical resource. This provides information on 'issues' affecting habitats and species within the protected sites series in Wales, but for H7220 it only contains a total of 2 management issue entries against the Petrifying springs feature description, of which both remain current for a single Eryri SAC unit. The review by Farr et al. (2014) also contains some relevant information.

NRWs Prioritised Implementation Plans (PIPs) for SAC sites (NRW, 2016a) have also been consulted.

Pressures:

PA07 Intensive grazing or overgrazing by livestock

Grazing type and/or timing is cited as a current issue for a single Eryri unit and also features as a high priority pressure for this feature in the relevant Prioritised Implementation Plan (NRW, 2016). This is likely to apply to upland stands only.

PK04: Atmospheric N-deposition and PK03 Mixed source air pollution, air-borne pollutants

Air pollution is not cited as a current issue for H7220 in NRWs Actions Database (NRW, 2018c) but it is recognised as a high priority pressure/medium priority threat in the relevant PIP. The extent of the H7220 resource in Wales subject to N deposition in excess of the critical load for this habitat (15 kg N/ha/yr) has been assessed using the agreed approach and updated deposition data. Using a data overlay method in ARC GIS (Kay, 2018), 100% of the habitat by area (polygon data) was recorded at or above the relevant lower Critical Load limit. NRWs Actions Database needs to be updated to ensure this issue is correctly recorded as a current issue for all SAC and SSSI units.

PA08 Extensive grazing or undergrazing by livestock & PM07 Natural processes without direct or indirect influence from human activities or climate change Management neglect is suspected to be a locally important issue for this habitat, typically leading to 'scrubbing up' of examples. However, this is based on personal observation rather than any actions database evidence.

PA17 Agricultural activities generating diffuse pollution to surface or ground waters

The study by Farr et al. (2014) suggests generally good hydrological status for the 12 sites examined by their study, but there was evidence for enrichment by inorganic nitrogen at one of these (Cors Erddreiniog), with agricultural activities within the catchment the most likely causal factor.

PL02 Drainage

There is currently no direct evidence for impacts posed by this pressure or the closely related PL01, but several of the sites do occur in close proximity to drainage features and current impacts cannot be ruled out.

PJ03 Changes in precipitation regimes due to climate change There is no specific evidence indicating impacts due to these pressures at the present time. This was initially ranked as High as a threat but has been downgraded to Medium to meet reporting restrictions.

Threats:

These were assessed in a similar way to pressures. There were no issues in the Actions Database registered as 'completed' or 'underway'.

All pressures are considered to continue at the same level or increase as their parent pressures.

Threats related to intensive grazing (PA07) and insufficient grazing (PA08 & PM07) will continue for the foreseeable future due to the following principal factors: (i) lack of resources for promoting and funding management agreements on statutory sites under third party management, and (ii) the inadequacy of current mechanisms for promoting and where necessary enforcing the sustainable management of examples outside the protected sites series, particularly where these occur as small elements within otherwise intensively farmed contexts.

PA17 Agricultural activities generating pollution to surface or ground waters (including marine)Resolution of this threat requires comprehensive catchment-level integration of a range of existing and new measures aimed at reducing and mitigating nutrient inputs, coupled with much more intensive monitoring of groundwater and shallow marginal seepage pathways to determine the effectiveness of measures. This intervention is not currently underway or planned.

PK04: Atmospheric N-deposition and PK03 Mixed source air pollution, air-borne pollutants

Despite modest projected reductions in the overall deposition rates for atmospheric nitrogen in the UK, air pollution is expected to remain a High pressure (threat) to the habitat in Wales. A provisional analysis using projected exceedance data for 2030 indicates that the area of SAC (on which H7220 is a feature) which falls in areas where deposition is above the relevant critical load will not fall at all from the 2013-2015 estimate (JNCC, 2018).

PJ03 Changes in precipitation regimes due to climate change The sensitivity of lowland fens in general is classed as 'High' by Natural England & RSPB (2014). Visual estimation of spring-flow rates at the sites examined by

	Farr et al. (2014) yielded estimates of between <0.1 – 1 l/s, suggesting that even modest reductions in groundwater levels and/or flows could be significant.
8.5: List of main conservation measures	This analysis is based on the 2018 reporting data only. The majority of measures are not fully implemented. A total of 3.72 ha of this habitat is included within this SAC series (based on 2012 data), and in 2012 the area in SSSI with the feature 'Flush and spring - soligenous mire' and under a land agency agreement 3.73 ha. Data for 2018 (Milner, 2018) suggest 1.02 ha of this habitat is included within Glastir Advanced agreements, with only 0.22 ha included in Glastir Entry. MA05 Adapt mowing, grazing and other equivalent agricultural activities (e.g. burning), MM01 Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes that occur without direct or indirect influence from human activities or climate change & MA04 Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures MA05, MM01 & MA04 This concerns the need to address insufficient and over-grazing, including on sites under third party management, and critically to ensure that prescriptions for often large management units on which this habitat will occur as very much a minority component are effective. Targeted management aimed at individual stands will often be required to sustain their significant value for scarce and rare invertebrates and non-vascular plants. MA10 Reduce/eliminate point or diffuse source pollution to surface or ground waters (including marine) from agricultural activities & MK01 Reduce impact of mixed source pollution.

This is the major measure required to reduce nutrient income to the sites supporting H7220 from both runoff and groundwater discharge – it is unknown how many sites this may need to apply to. Current mechanisms for including this on land outside the catchment of protected sites may not be sufficient.

Measures to address diffuse terrestrial pollution could be an effective means of reducing the impact of air pollution (MK01) by reducing overall nutrient loading.

MA13 Manage agricultural drainage and water abstraction (incl. the restoration of drained or hydrologically altered habitats)This concerns the need to monitor and regulate any potential hydrological impacts within the immediate ground and surface water catchment of sites.

MA01 Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land There is no information on damage or habitat loss of H7220 but this remains a threat for these often small and isolated habitat patches.

MK01 Reduce impact of mixed source pollution, MC09 Manage/reduce/eliminate air pollution from resource exploitation and energy production & MA11: Reduce/ eliminate air pollution from agricultural activities

MK01, MC09 & MA11

National regulations are in place but have been insufficient to prevent continued high levels of N deposition nationally (MC09) and locally increasing ammonia pollution from expansion of poultry units (MA11).

Air quality limit values set out in the Air Quality Strategy (AQS) are transposed into national legislation by the Air Quality Standards Regulations 2010. Nitrogen deposition

	continues to impact semi-natural habitats in Wales. These regulations are not habitat-specific, however with introduction of The Environment (Air Quality and Soundscapes) (Wales) Act 2024 in Wales, brings in new national targets for air quality pollutants, with the potential of directly influencing habitat protection. This key legislative advancement requires mandatory targets for fine particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) to be established by February 2027, including new powers for Welsh Ministers to set pollutant-specific targets in future years (e.g., ammonia, nitrogen dioxide) linked to biodiversity outcomes, potentially enabling future habitat-sensitive thresholds. Welsh Government have also introduced The Agriculture (Wales) Act in 2023. It aims to establish a framework of Sustainable Land Management (SLM) objectives to underpin agricultural support, including the Sustainable Farming Scheme (SFS). The Act provides Welsh Ministers with the power to provide support (financial or otherwise) for or in connection with 15 purposes, including 'Improving air quality'. Welsh Government published a consultation on the SFS which closed in March 2024. Welsh Ministers will not be making final scheme design decisions until further stakeholder work is undertaken.
9.1:Future trends and prospects of parameters	Area: There is insufficient survey information on the area of this habitat but expert opinion suggests lowland stands in particular may be contracting in extent due to the pressures reviewed above. Structure & function: The Future prospects for Structure and functions takes into account that at least 25% of the habitat area is expected to be in unfavourable (not good) condition in c.2035 due to

	nutrient N critical load exceedance, unless additional measures are taken to reduce N deposition impacts
10.1: Range	Conclusion on Range reached because:(i) the short-term trend direction in Range surface area is unknown; and (ii) the current Range surface area is approximately equal to the Favourable Reference Range.
10.2: Area	Conclusion on Area reached because:(i) the short-term trend direction in Area is unknown; (ii) the current Area is not more than 10% below the Favourable Reference Area and iii) the change in distribution pattern is unknown.
10.3: Specific structure and functions	Conclusion on Structure and function reached because the condition of the habitat is unknown as over 75% of the habitat has 'unknown' condition.
10.4: Future prospects	Conclusion on Future prospects reached because: (i) the Future prospects for Range are unknown; (ii) the Future prospects for Area covered by habitat are unknown; and (iii) the Future prospects for Structure and function are bad.
10.5: Overall assessment of Conservation Status	Overall assessment of Conservation Status is Unfavourable-bad because one of the conclusions is Unfavourable-bad.
11.1: Surface area of the habitat type inside the pSCIs, SCIs and SACs network	This estimate is derived from digital overlay of SAC boundaries on the habitat inventory for H7220 described under section 5.2 above and is based on 2012 data.
11.4: Short-term trend of habitat area within the network; Direction	There is insufficient information on habitat condition for assessment under this heading.
5.13: Favourable Reference Area (FRA)	The UK-level FRV for surface area was developed by JNCC using an audit trail based on the year the FRV was first established and any changes made in subsequent reporting rounds. The audit may draw from any combination of the 2007, 2013, or 2019 Habitats Directive reports and reflects the full rationale used for the 2019 Article 17 reporting. This FRV was reviewed by Welsh experts and considered appropriate for use in Wales based on current habitat extent and trends.

4.10: Favourable Reference Range (FRR)	The UK-level FRV for range was developed by JNCC using an audit trail based on the year the FRV was first established and any changes made in subsequent reporting rounds. The audit may draw from any combination of the 2007, 2013, or 2019 Habitats Directive reports and reflects the full rationale used for the 2019 Article 17 reporting. This FRV was reviewed by Welsh experts and considered appropriate for use in Wales based on current distribution and trends.