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 habitat:

H7150 - Depressions on peat substrates of the *Rhynchosporion*

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 habitat, 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 habitat 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; and/or (iii) the field was only relevant at UK-level (sections 10 Future prospects and 11 Conclusions).
- For technical reasons, the country-level future trends for Range, Area covered by habitat and Structure and functions 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 17 for Annex I habitat types (Annex D)

NATIONAL LEVEL

1. General information

1.1 Member State	**UK (Northern Ireland information only)**
1.2 Habitat code	**7150 - Depressions on peat substrates of the Rhynchosporion**

2. Maps

2.1 Year or period	2013-2018
2.3 Distribution map	Yes
2.3 Distribution map Method used	Based mainly on extrapolation from a limited amount of data
2.4 Additional maps	No

BIOGEOGRAPHICAL LEVEL

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs	**Atlantic (ATL)**
3.2 Sources of information	Cooper, A. & McCann, T. (2001). The Northern Ireland Countryside Survey 2000. Environment and Heritage Service, Belfast Cooper, A., McCann, T. and Rogers, D. (2009) Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency. Northern Ireland Environment Agency Research and Development Series No. 09/06. Belfast. 58 pp. McCann, T., Rogers, D. and Cooper, A. (2009) Northern Ireland Countryside Survey 2007: Field methods and technical manual. Northern Ireland Environment Agency. Northern Ireland Environment Agency, Research and Development Series No 09/07. Belfast. Murray, R., McCann, T. and Cooper, A. (1992). A Land Classification and Landscape Ecological Study of Northern Ireland. Department of the Environment NI and Department of Environmental Studies, University of Ulster, Coleraine. Rodwell, J.S. (1991). British Plant Communities. Volume 2, Mires and heaths. Cambridge: Cambridge University Press NIEA. Internal Condition Assessment Reports (various sites and years). Rodwell, J.S., Dring, J.C., Averis, A.B.V., Proctor, M.C.F., Malloch, A.J.C., Schaminee, J.H.J & Dargie, T.C.D. 1998. Review of Coverage of the National Vegetation Classification. Lancaster: Unit of Vegetation Science report to the Joint Nature Conservation Committee. Data on aerial Nitrogen deposition taken from Air Pollution Information System website - http://www.apis.ac.uk/ NIEA. Internal Condition Assessment Reports (various sites and years). Lindsay, R.A. (1995). Bogs: The ecology, classification and conservation of ombrotrophic mires. Scottish Natural Heritage. Battleby. Leach S. J. & Corbett, P. McM. (1987). A preliminary survey of raised bogs in Northern Ireland. Glasra, 10, 57-73. Corbett, P. McM. & Seymour, G. R. (1997). The conservation of peatland in Northern Ireland. In: Conserving Peatlands; Eds.: L. Parkyn, R.E. Stoneman and H.A.P. Ingram. CAB International, Wallingford, pp 348-356.

4. Range

4.1 Surface area (in km²)	
4.2 Short-term trend Period	

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4.3 Short-term trend Direction	Stable (0)		
4.4 Short-term trend Magnitude	a) Minimum	b) Maximum	
4.5 Short-term trend Method used			
4.6 Long-term trend Period			
4.7 Long-term trend Direction			
4.8 Long-term trend Magnitude	a) Minimum	b) Maximum	
4.9 Long-term trend Method used			
4.10 Favourable reference range	a) Area (km²)		
	b) Operator		
	c) Unknown	No	
	d) Method		
4.11 Change and reason for change in surface area of range	No change		
	The change is mainly due to:		
4.12 Additional information			

5. Area covered by habitat

5.1 Year or period	2013-2018		
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value
5.3 Type of estimate			
5.4 Surface area Method used	Insufficient or no data available		
5.5 Short-term trend Period	2007-2018		
5.6 Short-term trend Direction	Uncertain (u)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Insufficient or no data available		
5.9 Long-term trend Period	1994-2018		
5.10 Long-term trend Direction	Uncertain (u)		
5.11 Long-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.12 Long-term trend Method used	Insufficient or no data available		
5.13 Favourable reference area	a) Area (km²)		
	b) Operator		
	c) Unknown	No	
	d) Method		
5.14 Change and reason for change in surface area of range	No change		
	The change is mainly due to:		
5.15 Additional information			

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum	Maximum
	b) Area in not-good condition (km²)	Minimum	Maximum
	c) Area where condition is not known (km²)	Minimum	Maximum

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6.2 Condition of habitat Method used	Insufficient or no data available
6.3 Short-term trend of habitat area in good condition Period	2013-2018
6.4 Short-term trend of habitat area in good condition Direction	Stable (0)
6.5 Short-term trend of habitat area in good condition Method used	Based mainly on extrapolation from a limited amount of data
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	

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Intensive grazing or overgrazing by livestock (A09)	M
Burning for agriculture (A11)	H
Agricultural activities generating air pollution (A27)	M
Drainage for use as agricultural land (A31)	M
Peat extraction (C05)	H
Wind, wave and tidal power, including infrastructure (D01)	M
Other invasive alien species (other then species of Union concern) (I02)	M
Droughts and decreases in precipitation due to climate change (N02)	M
Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (B27)	M
Drainage, land reclamation and conversion of wetlands, marshes, bogs, etc. to settlement or recreational areas (F26)	M

Threat	Ranking
Intensive grazing or overgrazing by livestock (A09)	M
Burning for agriculture (A11)	H
Agricultural activities generating air pollution (A27)	H
Drainage for use as agricultural land (A31)	M
Peat extraction (C05)	H
Wind, wave and tidal power, including infrastructure (D01)	M
Other invasive alien species (other then species of Union concern) (I02)	M
Droughts and decreases in precipitation due to climate change (N02)	H
Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (B27)	M

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Drainage, land reclamation and conversion of wetlands, marshes, bogs, etc. to settlement or recreational areas (F26) M

7.2 Sources of information

7.3 Additional information

8. Conservation measures

8.1 Status of measures	a) Are measures needed?	Yes
	b) Indicate the status of measures	Measures identified and taken
8.2 Main purpose of the measures taken		Maintain the current range, population and/or habitat for the species
8.3 Location of the measures taken		Both inside and outside Natura 2000
8.4 Response to the measures		Medium-term results (within the next two reporting periods, 2019-2030)

8.5 List of main conservation measures

Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land (CA01)

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

Reduce/eliminate air pollution from agricultural activities (CA12)

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

Manage drainage and irrigation operations and infrastructures (CB14)

Management, control or eradication of other invasive alien species (CI03)

Implement climate change adaptation measures (CN02)

Adapt/manage exploitation of energy resources (CC02)

Manage changes in hydrological and coastal systems and regimes for construction and development (CF10)

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters

a) Range

b) Area

c) Structure and functions

9.2 Additional information

10. Conclusions

10.1. Range

10.2. Area

10.3. Specific structure and functions (incl. typical species)

10.4. Future prospects

10.5 Overall assessment of Conservation Status

10.6 Overall trend in Conservation Status

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10.7 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:
10.8 Additional information	

11. Natura 2000 (pSCIs, SCIs, SACs) coverage for Annex I habitat types

11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/ marine region)	a) Minimum b) Maximum c) Best single value 0.09
11.2 Type of estimate	Best estimate
11.3 Surface area of the habitat type inside the network Method used	Based mainly on extrapolation from a limited amount of data
11.4 Short-term trend of habitat area in good condition within the network Direction	Increasing (+)
11.5 Short-term trend of habitat area in good condition within network Method used	Complete survey or a statistically robust estimate
11.6 Additional information	

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

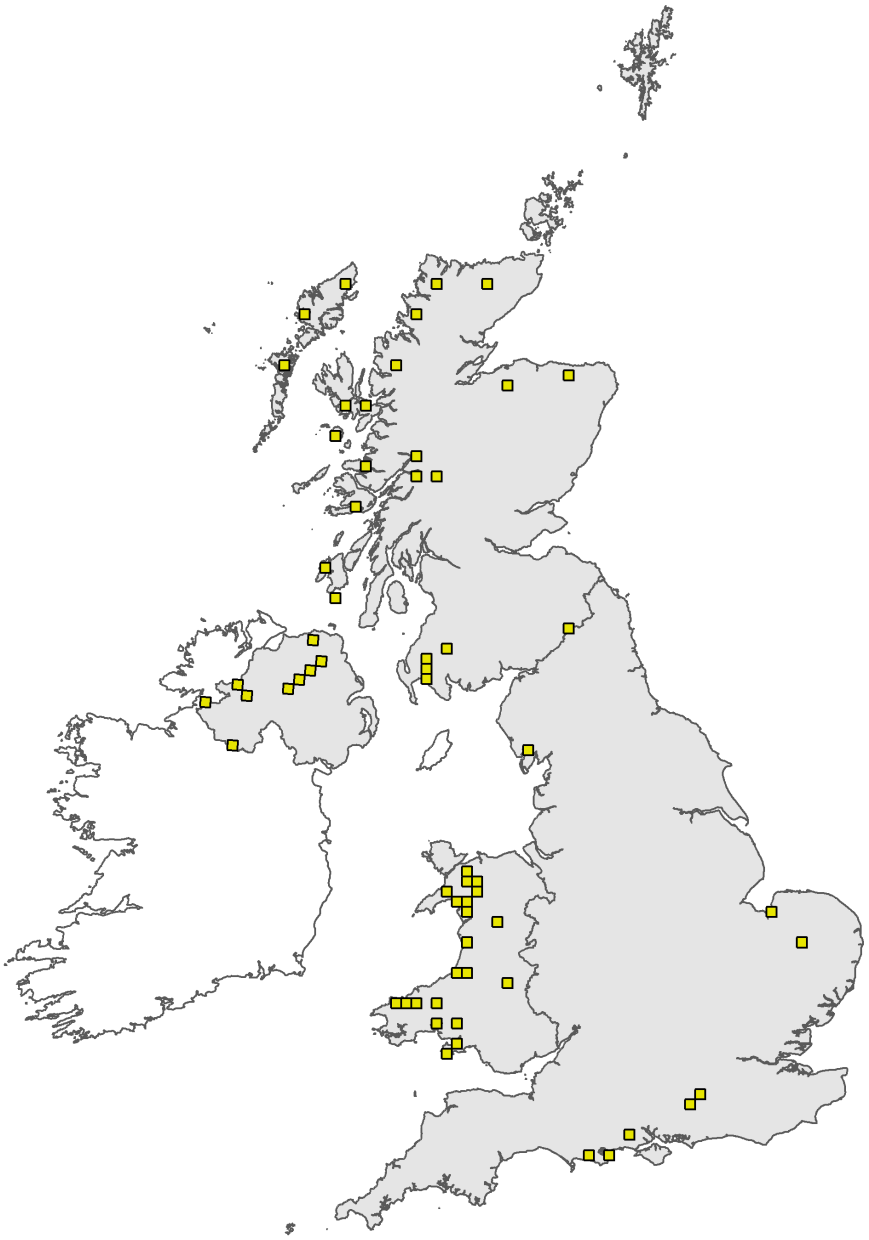

Figure 1: UK distribution map for H7150 - Depressions on peat substrates of the *Rhynchosporion*. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available habitat records which are considered to be representative of the distribution within the current reporting period. For further details see the 2019 Article17 UK Approach document.

Range Map

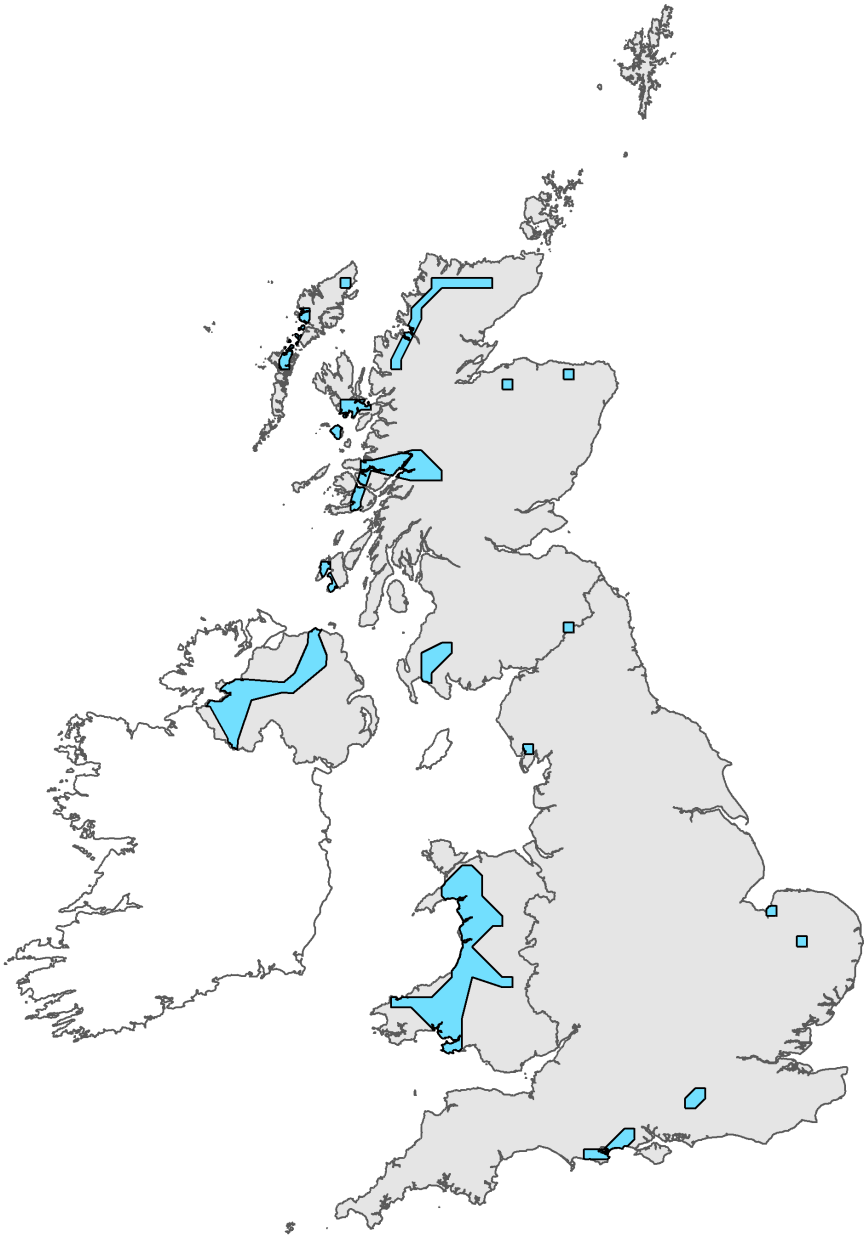

Figure 2: UK range map for H7150 - Depressions on peat substrates of the *Rhynchosporion*. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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 habitat was 25km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Habitat code: 7150

Field label	Note
2.2 Distribution map	Depressions on peat substrates of the Rhynchosporion occur in complex mosaics with lowland wet heath and valley mire vegetation, in transition mires, and on the margins of bog pools and hollows in both raised and blanket bogs. The vegetation is typically very open, usually characterised by an abundance of white beak-sedge Rhynchospora alba, often with well-developed algal mats, the bog moss Sphagnum denticulatum, round-leaved sundew Drosera rotundifolia and, in relatively base-rich sites, brown mosses such as Drepanocladus revolvens and Scorpidium scorpioides. In the north and west of the UK, within 7110 Active raised bogs and 7130 Blanket bogs, this habitat type is usually part of the transition between bog pools (NVC types M1 Sphagnum auriculatum bog pool community and M2 Sphagnum cuspidatum/recurvum bog pool community) and the surrounding bog vegetation (mainly M17 Scirpus cespitosus - Eriophorum vaginatum blanket mire and M18 Erica tetralix - Sphagnum papillosum raised and blanket mire). Vegetation dominated by Rhynchospora alba is found in NI on both blanket bogs and lowland raised bogs. The habitat has been listed for 9 SACs (Grade D - insignificant presence): Ballynahone Bog, Fairy Water Bogs, Garry Bog, Main Valley Bogs, Moneygal Bog, Moninea Bog, Pettigoe Plateau, Teal Lough and Wolf Island Bog.
2.3 Distribution map; Method used	Map based upon NI Peatland Survey (Cruickshank and Tomlinson, 1988) with additional fieldwork by NIEA staff at other sites - SACs, ASSIs and other locations. During the reporting period, NIEA staff have generally visited SACs and ASSIs. Coverage of the habitat in the wider countryside is very patchy, as the habitat would generally be considered as part of the blanket bog or raised bog vegetation.

Habitat code: 7150 Region code: ATL

Field label	Note
4.1 Surface area	The complete peatland resource has not been surveyed since 1988, but we have no reason to believe that there has been a loss in range; certainly no loss in range has been recorded in the habitat on SACs or ASSIs since the condition assessment programme was introduced in 2002. The habitat occurs as in integral part of some active raised bogs and blanket bogs. Although there have been some losses in bog area over the time period, it is believed that the bulk of these have been around the edges of existing sites, and that the range has therefore been unchanged since 1994.
4.5 Short term trend; Method used	Based upon regular condition monitoring of protected lowland raised bog and blanket bog sites. Although there have been some losses in bog area over the time period, it is believed that the bulk of these have been around the edges of existing sites, and that the range has therefore been unchanged since 1994.
5.2 Surface area	The surface area of this habitat is unknown - in NI it occurs as an integral part of blanket and raised bogs, often in association with pool complexes, and occasionally in more degraded locations that have been burnt or cutover. In the latter situation, it is often an ephemeral community. Hence, the habitat is virtually impossible to map, and no estimate of its extent can be made. Evidence from the NI Countryside Survey shows that both blanket and particularly raised bog (the host habitats for H7150) have decreased in extent over the short and long-term time periods. The problem is that R. alba can increase on some bog surfaces as a result of poor condition (e.g. turf cutting; burning), so a decline in the condition of raised bog/blanket bog could actually increase the extent of the habitat.

5.4 Surface area; Method used	In NI, the habitat occurs as part of an intricate mosaic of raised bog and blanket bog plant communities; as such it is virtually impossible to map and produce an accurate estimate of its extent. Hence reported as Insufficient or no data available
5.6 Short term trend; Direction	Although the habitat is not directly assessed, regular monitoring of protected sites has not noted any decline in extent of H7150, and with a proportion of the sites in improving condition, this would be expected to increase its extent. However, from the NI Countryside Survey, it is clear that there has been a decrease in wet bog communities in both blanket and raised bogs, which could potentially have reduced the extent of the habitat in the wider countryside, as it is often associated with active bog. However, as noted above, the community is also found on more degraded bog surfaces. Hence reported as Uncertain.
5.10 Long term trend; Direction	See 5.6 - Although the habitat is not directly assessed, regular monitoring of protected sites has not noted any decline in extent of H7150, and with a proportion of the sites in improving condition, this would be expected to increase its extent. However, from the NI Countryside Survey, it is clear that there has been a decrease in wet bog communities in both blanket and raised bogs, which could potentially have reduced the extent of the habitat in the wider countryside, as it is often associated with active bog. However, as noted above, the community is also found on more degraded bog surfaces. Hence reported as Uncertain.
6.1 Condition of habitat	It is not possible to provide a value for area in good, bad or unknown condition, since the overall extent of the habitat across Ni is unknown. However,it is possible to make some inferences about the general condition of the habitat based upon Active Raised Bog and Blanket Bogs. Recent condition assessment data for SACs and ASSIs shows that a reasonably high proportion of the host habitats (H7110 and H7130) is in favourable or unfavourable recovering condition. Combined data for Active Raised Bog SACs and ASSIs : 630 ha favourable (39%); 374 ha unfavourable recovering (23%) ; 468 ha unfavourable (29%); with about 9% recently declared ASSIs not yet assessed). For Blanket Bogs the figures are : 896 ha favourable (6%); 5140 ha unfavourable recovering (36%) ; 6795 ha unfavourable (48%); with about 9% recently declared ASSIs not yet assessed). However, the trend in the wider countryside for these habitats is rather different - particularly for Active Raised Bog. The NI Countryside Survey 2000 indicates a decline in wet bog habitat in the lowlands between 1991 and 1998 of 8%. This is largely due to a conversion from wet bog to dry bog - indicating drying out.
6.2 Condition of habitat; Method used	Although not possible to provide quantitative data, condition has been inferred from data taken from the most recent SAC and ASSI Common Standards Monitoring of the host habitats - Acitve Raised Bog and Blanket Bogs. However, a large part of the resource of these 2 habitats lies outside the designated site network. General trends identified in the NI Countryside Survey 1998-2007 (Cooper, et al., 2009) suggest that a high proportion of the overall resource is likely to be in unfavourable condition, particularly for Active Raised Bog. Although the latter survey is now somewhat out of date, it is likely that the broad trends identified are still valid.

7.1 Characterisation of pressures/ threats	As the habitat is closely associated with blanket bog and raised bog, threats and pressures for H7110, H7120 and H7130 are relevant to H7150 also. The most apparent pressures on designated sites are burning and the impacts of past turf-cutting and drainage (leading to long-term hydrological change, with associated surface drying, loss of Sphagnum cover and scrub encroachment, etc.). Outside the protected sites network, drainage and peat cutting remain as significant impacts on the habitat, as indicated by the NI Countryside Survey. More localised pressures include livestock grazing, impacts from adjacent forestry plantations, invasive species, such as Rhododendron, and conversion to agricultural or development land. As far as threats are concerned, climate change will inevitably have some effects on the habitat, through changing patterns of rainfall. It is difficult to predict what the long-term effects of this will be, although if, as current projections suggest, there are prolonged periods of drought, this may well have an adverse impact on the health of Sphagnum bog-mosses. The habitat is sensitive to aerial Nitrogen deposition, with a critical load range listed in the APIS website as 10-15 kg N /ha/yr. Most of the habitat in NI receives above this - in some cases considerably higher than this. Apart from nutrient enrichment and the associated impacts on species composition, some key bog species are particularly sensitive to the effects of ammonia (i.e. Cladonia portentosa and Sphagnum spp), and one NI SAC (Moninea Bog) has also experienced damaging effects from ammonia.
7.2 Sources of information	Threats and pressures assessed from the most recent Common Standards Monitoring of the associated bog habitats (H7110, H7120 and H7130) at protected sites (SACs and ASSIs), in addition to data from the NI Countryside Survey and expert judgement to assess pressures in the wider countryside - particularly from the APIS website. Threats based upon current pressures and expert judgement on future trends.
8.1 Status of measures	Recent monitoring of H7110, H7120 and H7130 on SACs and ASSIs has shown that there are still extensive areas of bog habitat in unfavourable condition. However, specific site conservation measures have been put in place at several SACs and ASSIs to improve condition - e.g. drain blocking on Black Bog, Ballynahone Bog and Garron Plateau SACs to restore hydrology. More measures will be put in place under the Interreg Va programme, and the Environmental Farming Scheme (EFS). In addition, the Department is developing a road map to reduce atmospheric Nitrogen from agricultural sources. It is likely that these measures to improve the condition of H7110, H7120 and H7130 will have a beneficial impact on H7150 also.
8.2 Main purpose of the measures taken	Measures aimed at reducing damaging impacts from current pressures and future threats. Hence this is reported as Maintain the structure and functions, including the status of typical species (related to 'Specific structure and functions').
8.3 Location of the measures taken	Management measures have been taken at a number of sites to improve peatland condition - i.e. Garron Plateau SAC in Co Antrim, Ballynahone Bog SAC in Co. Londonderry, Black Bog SAC in Co Tyrone, Garry Bog SAC in Co. Antrim, etc. In addition, Interreg Va project will be developing conservation management plans and implementing management measures at several peatland SACs, and Rural Development Plan (RDP) funds are being used to develop similar Conservation Management Plans at other peatland SACs. Several areas of peatland across NI - both within designated sites and outside - have been entered into the Environment Farming Scheme (EFS), which aims to implement sympathetic management. Athough aimed primarily at H7110, H7120 and H7130, all of these measures should improve the condition of H7150 also.

9.1 Future prospects of parameters	As the habitat is closely associated with blanket bog and raised bog, threats and pressures for H7110, H7120 and H7130 are relevant to H7150 also. Like these other peatland habitats, Rhynchosporion depressions is sensitive to aerial Nitrogen deposition, with a critical load range listed in the APIS website as 10-15 kg N /ha/yr. Most of the habitat in NI receives above this. Apart from nutrient enrichment and the associated impacts on species composition, some key bog species are particularly sensitive to the effects of ammonia (i.e. Cladonia portentosa and Sphagnum spp), and one NI SAC (Moninea Bog) has also experienced damaging effects from ammonia. Although the Department is developing a road map to reduce atmospheric Nitrogen from agricultural sources, until this initiative is implemented and its impacts evaluated, advice from JNCC is that the assessment of future prospects for Structure and Function should be assessed as Negative.
10.1 Range	Within NI it is clear that there have been large historic losses in extent of the peatland habitats in which the H7150 occurs, but there are no indications that the range of these habitats has declined since 1988 - hence Range assessment for H7150 is Favourable..
10.2 Area	Although the overall extent of the habitat is unknown, inferences on extent can be made from data for Active Raised Bog and Blanket Bogs. Both of these habitats have shown a decline in extent since 1991 (NI Countryside Survey) - for example, there was a decline in wet bog habitat in the lowlands between 1991 and 1998 of 8%, and a similar decline between 1998 and 2007. Blanket bog has also shown a decline in extent (albeit smaller). With both of the host habitats declining in extent, it is reasonable to infer that H7150 has shown a corresponding decline in extent. Hence the judgement is Bad - declining.
10.3 Specific structure and functions	The active raised bogs and blanket bogs on SACs and ASSIs in NI which support this habitat include sites in favourable, unfavourable recovering and unfavourable condition. However, the habitats on designated sites have generally shown an improvement in condition since designation. The picture in the wider countryside is very different however, with NI Countryside Survey suggesting widespread conversion to drier bog communities - presumably as a result of long-term hydrological changes caused by past (and present) cutting and drainage. The principle reasons for sites supporting H7150 being in unfavourable condition are usually the same as those leading to unfavourable condition on the 'host' habitat, in particular an adverse eco-hydrological regime and the need for follow up management of the consequences of the negative eco-hydrological regime. Overall this suggests a judgement on structure and function of Unfavourable - Bad.
10.4 Future prospects	Inferring from H7110 and H7130, designated sites are generally improving, although the resource in the wider countryside is declining. Given the uncertain future impacts of air pollution and climate change, future prospects are predicted as Unfavourable Bad.
10.5 Overall assessment of Conservation Status	Range is stable; extent is unfavourable bad due to probable rates of loss. Structure and function is bad, based on condition of host habitats (H7110 and H7130). Future prospects are bad, with climate change impacts currently unpredictable and atmospheric Nitrogen deposition still a major threat. Hence an overall unfavourable bad assessment.
11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network	There are 9 SACs in NI which are known to contain the habitat, covering very approximately 9 ha of the habitat (see 11.3. below).
11.3 Surface area of the habitat type inside the network; Method used	The habitat generally occurs as an intricate part of the peatland mosaic, so it is impossible to accurately map. Area estimates for SACs therefore based upon expert opinion.

11.4 Short term trend of habitat area in good condition within the network; Direction	Assessment of increasing based upon recent condition assessment data for the main habitats which host H7150 (i.e. Blanket Bogs and Active Raised Bogs). Although the bulk of these habitats in the SAC network have been reported as unfavourable, a significant amount in SACs is in recovering status, so the implication is that H7150 is in recovering condition as well. It should be note however, that the Condition Assessment methodology is generally not sensitive in detecting the impacts of atmospheric Nitrogen deposition on peatland habitats.
11.5 Short term trend of habitat area in good condition within the network; Method used	Assessment based upon recent condition assessment data. A significant proportion of the host habitats (H7110 and H7130) on SACs was recorded as favourable or unfavourable recovering, with proactive management in place on several SACs to improve condition. It should be noted, however, that the Condition Assessment methodology is generally not sensitive in detecting the impacts of atmospheric Nitrogen deposition.