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:

H91D0 - Bog woodland

SCOTLAND

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 (Scotland information only)**
1.2 Habitat code	**91D0 - Bog woodland**

2. Maps

2.1 Year or period	2014-
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	References within http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/H91D0_SCOTLAND.pdf JNCC (2004) Common Standards Monitoring Guidance for Woodland Habitats, Version February 2004, http://jncc.defra.gov.uk/page-2238

4. Range

4.1 Surface area (in km²)		
4.2 Short-term trend Period		
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	Bog woodland occurs throughout the native range of pine in Scotland where hydrological conditions are appropriate.	

5. Area covered by habitat

5.1 Year or period	2014-014-		
5.2 Surface area (in km²)	a) Minimum 3.87	b) Maximum 6	c) Best single value 3.87
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Based mainly on extrapolation from a limited amount of data		

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5.5 Short-term trend Period	2001-2014		
5.6 Short-term trend Direction	Stable (0)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Based mainly on expert opinion with very limited data		
5.9 Long-term trend Period			
5.10 Long-term trend Direction			
5.11 Long-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.12 Long-term trend Method used			
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	Area figures for the third report were based on expert opinion, as there was no comprehensive data available on area or on loss or expansion. Less survey information is available for bog woodland than other woodland types, because it is often missed from woodland and forestry surveys due to the inherently low canopy cover. The area figure for the current report uses survey data collected through targeted surveys using the British National Vegetation Classification. However, the distribution of this woodland type is still incompletely understood in Scotland, so the actual figure may be larger. However, it is considered that the currently figure is more accurate than previous estimates. Since there is no reliable data for previous periods, it is not possible to report accurately on trends, but it is considered likely that any changes that have occurred are likely to have been small, so the area has on balance probably remained more-or-less stable since over the reporting period.		

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 3.865	Maximum 3.865
	b) Area in not-good condition (km²)	Minimum 0	Maximum 0
	c) Area where condition is not known (km²)	Minimum 0	Maximum 0
6.2 Condition of habitat Method used	Complete survey or a statistically robust estimate		
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	Increasing (+)		
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	Site Condition Monitoring provides a means of assessing the structure and		

function of woodland on designated sites in Scotland. Assessment is based on the results of fieldwork carried out since 2013. Since then, the proportion of SACs where H91D0 is in unfavourable condition has declined from 25% to 14% (1 out of 7 sites). However, only 1% of the area of H91D0 on SACs is in unfavourable condition, as the site in unfavourable condition has only a small area of this type.
The site that is currently unfavourable is under management that has been assessed as appropriate for achieving favourable condition, although no change has yet been detected, and recovery may take decades.
NB this information only relates to Natura sites, and equivalent data is not available to assess the condition of H91D0 in the wider countryside however, the overwhelming majority of H91D0 is within Natura sites.

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (B27)	H
Problematic native species (I04)	H
Droughts and decreases in precipitation due to climate change (N02)	M

Threat	Ranking
Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (B27)	M
Problematic native species (I04)	H
Droughts and decreases in precipitation due to climate change (N02)	M

7.2 Sources of information

7.3 Additional information

Drainage has led to changes in structure and function on some sites. This continues to be a pressure in some places, in others work has been carried out to remedy it.
Impact of wild herbivores
If climate change leads to reduced precipitation and increased temperature, there is a risk of bogs drying, leading to development of a more typically dryland pine woodland community and deterioration of the bog community

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

Restore the habitat of the species (related to ‘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

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Manage drainage and irrigation operations and infrastructures (CB14)

Management of problematic native species (CI05)

8.6 Additional information	The reasons for poor condition are complex, with some understood better than others. The main known measure is herbivore control, and hydrology is important but incompletely understood on most sites and measures may be needed to restore this on some sites. Dothistroma needle blight is also a concern; removal of non-native pine species (especially lodgepole pine) to reduce the innoculum load and reduce the risk of strains hybridising, together with good biosecurity, are important conservation measures for dealing with this. Conservation measures are generally implemented through designation of protected areas, voluntary and statutory procedures (Deer Act), and the Forestry Grant Scheme (SRDP). While some results are achievable in the short term, others will require longer. Although conservation measures have been identified, implementation is patchy, so it is not correct to say Measures identified but none yet taken, so much as Measures identified but not consistently taken. However, since the overall trend of structure and function within designated sites is negative, and there is no reason to suppose things to be better outside of such sites, I consider that Measures identified but none yet taken is the case for the majority of the habitat.

9. Future prospects

9.1 Future prospects of parameters	a) Range b) Area c) Structure and functions
9.2 Additional information	Range is considered likely to remain stable. Area is considered likely to remain stable, although gradual attrition due to herbivore impact is likely over time. Without more concerted work to reduce herbivore impact across the range of the habitat, it is likely that structure and function will continue to decline.

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	
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

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	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 4
11.2 Type of estimate	95% confidence interval
11.3 Surface area of the habitat type inside the network Method used	Complete survey or a statistically robust estimate
11.4 Short-term trend of habitat area in good condition within the network Direction	Stable (0)
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	Area figures for the third report were based mainly on expert opinion, as there was no comprehensive data available on area. The area figure for the current report uses NVC survey for Bog Woodland on SACs. We have no data for this type apart from Natura sites. Since there is no reliable data for previous periods, it is not possible to report accurately on trends, but it is considered likely that any changes that have occurred are likely to have been small, so the area has on balance probably remained more-or-less stable since over the reporting period.

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

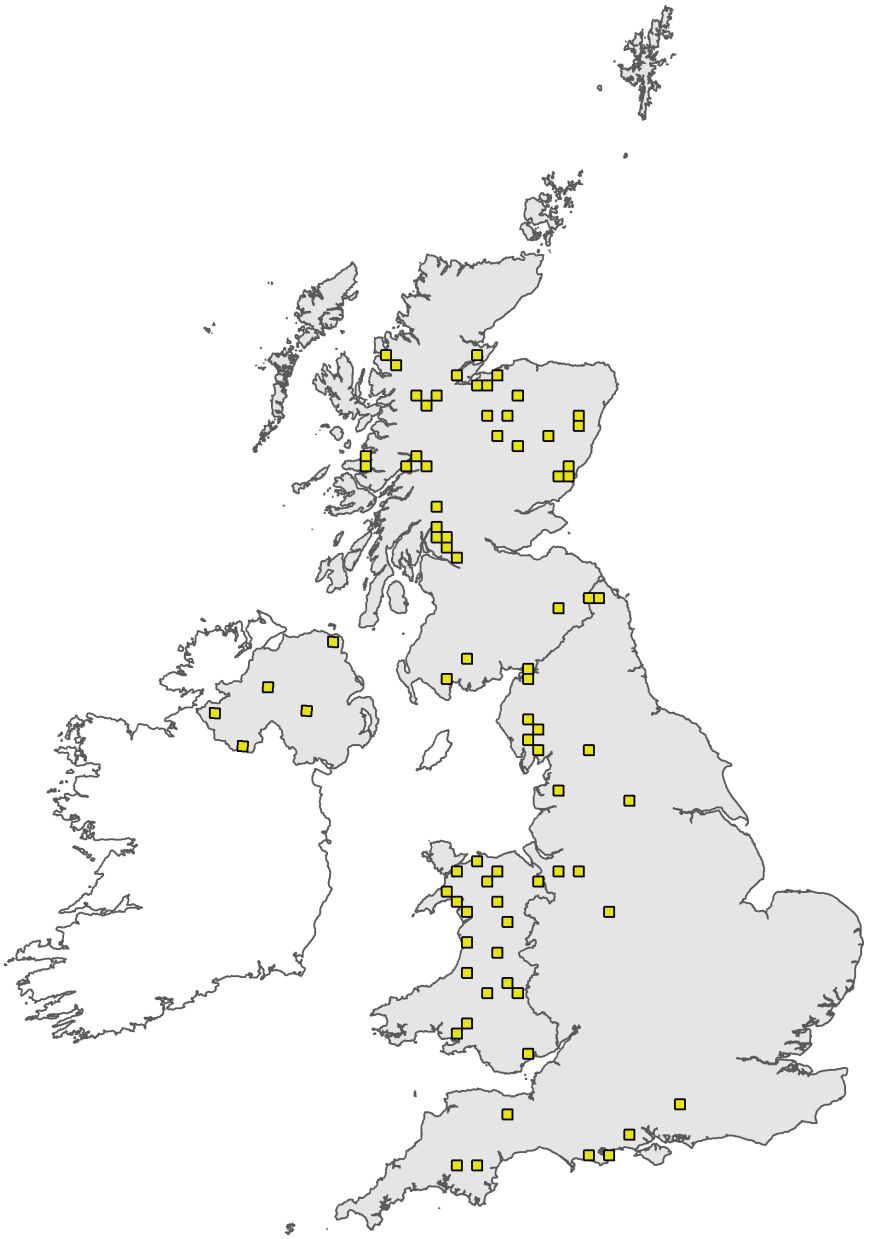

Figure 1: UK distribution map for H91D0 - Bog woodland. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

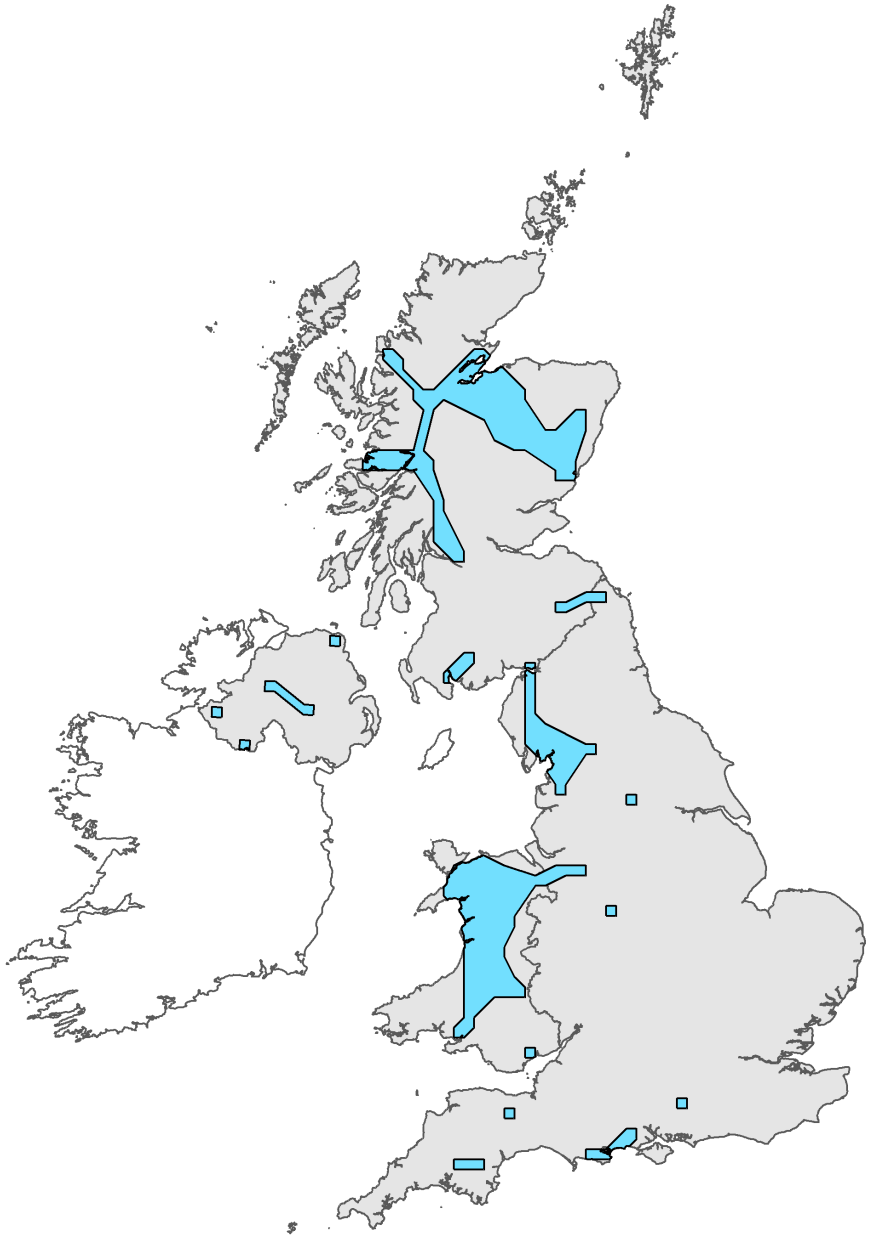

Figure 2: UK range map for H91D0 - Bog woodland. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.