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

2019-2024

Conservation status assessment for the habitat:

H9120 - Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)

Wales

Cyfoeth Naturiol Cymru
Natural Resources Wales

JNCC

For further information please contact:

Natural Resources Wales, Welsh Government Offices, Cathays Park, King Edward VII Avenue, Cardiff, CF10 3NQ. https://naturalresources.wales

JNCC, Quay House, 2 East Station Road, Fletton Quays, Peterborough, PE2 8YY. https://jncc.gov.uk

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: H9120 Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*).

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: Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)

Distribution Map

Range Map

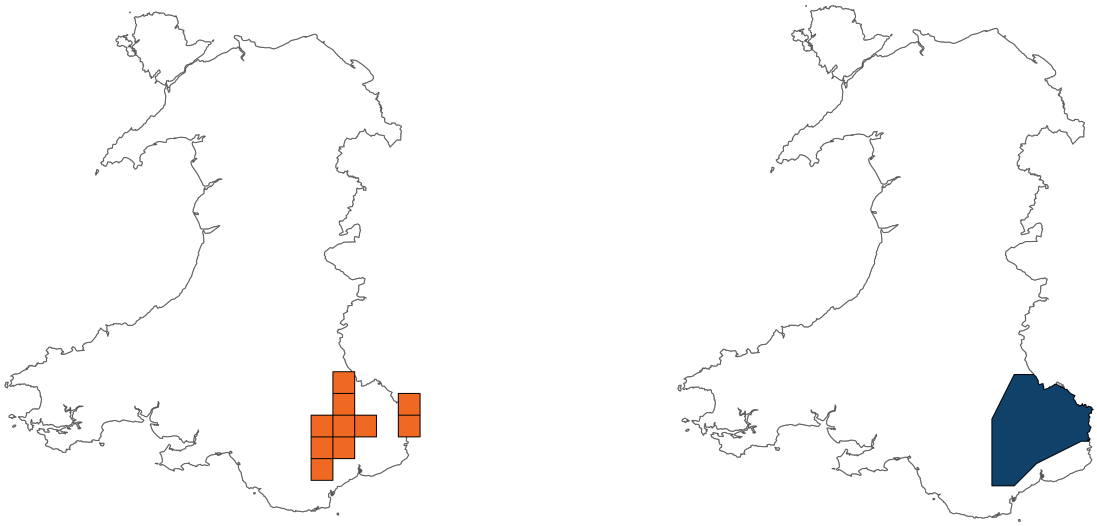

Figure 1: Wales distribution and range map for H9120 - Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological 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 H9120 - Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*). 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)	**Favourable (FV)**
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 5
1. General information 5
2. Maps 5

Biogeographical Level 5
3. Biogeographical and marine regions 5
4. Range 5
5. Area covered by habitat 7
6. Structure and functions 9
7. Main pressures 10
8. Conservation measures 11
9. Future prospects 12
10. Conclusions 13
11. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex I habitat types . . 13
12. Complementary information 14

13. References 15
Biogeographical and marine regions 15
Main pressures 16

14. Explanatory Notes 18

National Level

1. General information

1.1 Country	Wales
1.2 Habitat code	H9120 - Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)

2. Maps

2.1 Year or period	1985-2012
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)	1,468.83
4.2 Short-term trend; Period	2013-2024
4.3 Short-term trend; Direction	Stable

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	Based mainly on extrapolation from a limited amount of data
4.6 Long-term trend; Period	
4.7 Long-term trend; Direction	
4.8 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Rate of decrease	
4.9 Long-term trend; Method used	
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	1985-2012
5.2 Surface area (km²)	
a) Minimum	
b) Maximum	
c) Best single value	21
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	
5.11 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Confidence interval	
d) Rate of decrease	
5.12 Long-term trend; Method used	
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	0.04
aii) Maximum	0.04
Area not in good condition	
bi) Minimum	0
bii) Maximum	0
Area where condition is unknown	
ci) Minimum	20.96
cii) Maximum	20.96
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
PK03: Mixed source air pollution, air-borne pollutants	Ongoing and likely to be in the future	High (H)
PK04: Atmospheric N-deposition	Ongoing and likely to be in the future	High (H)
PJ14: Other climate related changes in abiotic conditions	Ongoing and likely to be in the future	High (H)
PI02: Other invasive alien species (other than species of Union concern)	Ongoing and likely to be in the future	Medium (M)
PB06: Logging or thinning (excluding clear cutting)	Ongoing and likely to be in the future	Medium (M)
PB04: Abandonment of traditional forest management	Ongoing and likely to be in the future	Medium (M)
PF05: Sports, tourism and leisure activities	Ongoing and likely to be in the future	Medium (M)
PI03: Problematic native species	Only in future	High (H)
PA08: Extensive grazing or undergrazing by livestock	Only in future	Medium (M)

PA07: Intensive grazing or overgrazing by livestock	Only in future	Medium (M)
PI04: Plant and animal diseases, pathogens and pests	Only in future	Medium (M)

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 and taken
8.2 Main purpose of the measures taken	Maintain the current range, surface area or structure and functions of the habitat type
8.3 Location of the measures taken	Both inside and outside National Site Network
8.4 Response to measures	Medium-term results (within the next two reporting periods, 2025–2036)

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
MK01: Reduce impact of mixed source pollution	Medium (M)
MA11: Reduce/eliminate air pollution from agricultural activities	Medium (M)

MC09: Manage/reduce/eliminate air pollution from resource exploitation and energy production	Medium (M)
MJ02: Implement climate change adaptation measures	High (H)
MI05: Management of problematic native species	High (H)
MI03: Management, control or eradication of other invasive alien species	High (H)
MB05: Adapt/change forest management and exploitation practices	Medium (M)
MB06: Stop forest management and exploitation practices	Medium (M)
MB02: Maintain existing traditional forest management and exploitation practices	Medium (M)
MB03: Reinstate forest management and exploitation practices	Medium (M)
MF03: Reduce impact of outdoor sports, leisure and recreational activities (incl. restoration of habitats)	Medium (M)

8.6 Additional information

No additional information

9. Future prospects

9.1a Future trends of parameters

ai) Range	Overall stable
bi) Area	Positive - increasing <=1% (one percent or less) per year on average
ci) Structure and functions	Very negative - important deterioration

9.1b Future prospects of parameters

aii) Range	Good
bii) Area	Poor
cii) Structure and functions	Bad

9.2 Additional information

No additional information

10. Conclusions

10.1 Range	Favourable (FV)
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 (km^2)

a) Minimum	
b) Maximum	

c) Best single value	0.073
11.2 Type of estimate	Best estimate
11.3 Habitat area inside the network; Method used	Complete survey or a statistically robust estimate
11.4 Short-term trend of habitat area within the network; Direction	Stable
11.5 Short-term trend of habitat area within the network; Method used	Complete survey or a statistically robust estimate
11.6 Short-term trend of habitat area in good condition within the network; Direction	Stable
11.7 Short-term trend of habitat area in good condition within the network; Method used	Complete survey or a statistically robust estimate

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.

Forestry Commission 2003. The Management of Native Woodlands. 2. Lowland Beech-Ash woodlands. Practice Guide. Forestry Commission, Edinburgh.

Forestry Commission 2011. National Forest Inventory Woodland Area Statistics: Wales: https://cdn.forestresearch.gov.uk/2022/02/nfi_wales_woodland_area_stats_2010_final.pdf

Forestry Commission 2018. Top tree diseases: Phytophthora ramorum. https://www.forestry.gov.uk/pramorum [Accessed 21/06/18]

Guest, D. 2012. Assessing pressures and threats for Article 17 reporting based on information in CCW's Actions Database. CCW Staff Guidance Note.

JNCC 2017. Habitat account – Forests. 9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrub layer (Quercion robori-petraeae or Ilici-Fagenion). http://jncc.defra.gov.uk/protectedsites/sacselection/habitat.asp?featureintcode=h9120 [Accessed 21/06/18]

Latham, J. & Rothwell, J. 2012. Estimates of the area and distribution of woodland Annex 1 types in Wales, based on GIS analyses: an assessment for Article 17 Reporting, 2012. CCW Staff Report, Bangor.

Latham, J. 2000. Estimates of areas of woodland HSP types and HSD Annex 1 habitats in Wales. Unpublished CCW staff report.

Latham, J. 2001. National Vegetation Classification of woodland in Wales: a summary of survey results 1985-2000. CCW Natural Science Report, 01/7/1, CCW, Bangor.

Latham, J. 2003. Woodlands. In: Priority habitats of Wales: a technical guide. Jones, P.S., Blackstock, T.H., Burrows, C.R. and Howe, E.A. (Eds). Countryside Council for Wales, Bangor.

Latham, J., Sherry, J. & Rothwell, J. 2013. Ecological connectivity and biodiversity prioritisation in the terrestrial environment of Wales. CCW Staff Science Report No. 13/3/3. Countryside Council for Wales, Bangor.

Natural Resources Wales (NRW) 2013. Supporting documentation for the Third Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2007 to December 2012 Conservation status assessment for Habitat: H9120 - Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrub layer (Quercion robori-petraeae or Ilici-Fagenion) Available from: https://webarchive.nationalarchives.gov.uk/ukgwa/20180804112421mp_/http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/H9120_WALES.pdf

Natural Resources Wales (NRW) 2018. SAC and SPA Monitoring Programme Results 2013-2018. Available from: https://www.data.gov.uk/dataset/45ee3877-d89e-48e1-a581-a60d055c70c0/special-areas-of-conservation-sac-and-special-protection-areas-spa-monitoring-program-2013-20181 [Accessed 19/0618)]

Natural Resources Wales (NRW) 2019. Supporting documentation for the Fourth Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2013 to December 2018. Conservation status assessment for Habitat: H9120 - Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrub layer (Quercion robori-petraeae or Ilici-Fagenion). Available from: https://jncc.gov.uk/jncc-assets/Art17/H9120-WA-Habitats-Directive-Art17-2019.pdf

Packham, J.R., Thomas, P.A., Atkinson, M.D & Degen, T. 2012. Biological Flora of the British Isles: Fagus sylvatica. Journal of Ecology 2012, 100, 1557–1608.

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

Watts, K., Griffiths, M., Quine, C., Ray, D. & Humphrey, J.W. 2005. Towards a Woodland Habitat Network for Wales. CCW Science Report 686, CCW Bangor.

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

Wesche, S., Kirby, K. & Ghazhoul, J. 2006. Plant assemblages in British beech woodlands within and beyond native range: implications of future climate change for their conservation. Forest Ecology and Management 236, 385–392.

Main pressures

7.2 Sources of information

No sources of information

14. Explanatory Notes

Field label	Note
2.1: Year or period	An extensive analysis of the range and extent of H9120 Atlantic acidophilous beech forests in Wales was carried out in 2012 using GIS, relevant vegetation surveys, geological and climatic data (Latham and Rothwell, 2012). No new information has become available to significantly update this analysis, and there is also no reason to expect that the range and extent of the habitat has changed significantly since 2012; any changes are likely to be trivial in comparison to the confidence in the analysis. For these reasons the figures and analysis for 2012 are reproduced here.
2.3: Distribution map; Method used	(Analysis as for 2012; see section 2.1). 9120 Atlantic acidophilous beech forests with Ilex are limited in range to the extreme south-east of Wales on acidic soils where beech is accepted as a native tree. Floristically similar stands do occur elsewhere in Wales where beech has been planted (and some examples recorded as 'D' features on SACs), but these are not included in this analysis. Atlantic acidophilous beech forests equate to NVC communities W15, and W14 on more acid soils (JNCC, 2017) and information on the habitats range can be derived from national NVC surveys in Wales. These are summarised in Latham (2001) and are fairly comprehensive at the scale required for reporting range and are considered adequate for the purpose. No significant further information has become available since the last reporting round, and it is considered highly unlikely that the habitat has changed its range during this period. Previous estimates of the area of beech woodland in Wales (Latham 2000, 2003) have used a 'proportional representation' approach, calculating the proportion of the total area of woodland surveyed by national surveys that equates to Atlantic acidophilous beech forest and applying this proportion to figures for the total woodland area in

Wales (Blackstock et al. 2010) to estimate the total habitat area. The approach makes the assumption that surveys are broadly representative of the overall woodland resource in Wales (Latham, 2001).

The current analysis uses this broad approach, but seeks to refine previous estimates by clarifying the native boundary of beech, and stratifying within it by broad rock types to help distinguish between beech woods of acid soils (Atlantic acidophilous beech forests) and those of neutral-basic soils (Asperulo-Fagetum). Beech is only considered native in southeast Wales. In the analysis for 'Priority Habitats of Wales' guidance for the Biodiversity Action Plan, Latham (2003) defined the range as 'the former administrative counties of Gwent and the eastern halves of Mid and South Glamorgan", and a GIS boundary was drawn informed by published maps, e.g. Forestry Commission (2003). The current analysis revisited that boundary layer, adjusting its location so that it didn't divide woodland units and as far as possible kept to un-wooded areas; stands known to contain beech adjacent to the boundary were considered individually to make a judgment as to whether the beech was native or not. In reality, there is unlikely to be a hard boundary line for native beech, and a decreasing proportion of native beech abundance away from native core areas seems much more likely. However, it is far beyond the scope of the current analysis to take this into account and an informed but pragmatic boundary seemed the most reasonable way ahead. In the following, the area enclosed by this boundary is referred to as the 'beech zone'. The beech zone was stratified from British Geological Survey 1: 250,000 maps (licenced to CCW's MapInfo GIS) into: 1.) Rock types that generally weather to form base-rich to neutral soils (mainly including limestones and argillaceous rocks) likely to support a high abundance Asperulo-Fagetum beech woodland, and; 2) Rock types that generally weather to form neutral to acidic soils (mainly sandstones) likely to support a lower abundance of Asperulo-Fagetum beech forest. A perfect separation of

'acid' and 'basic' beech types was not expected, but the hope was that it would help refine proportional estimates if the total areas of woodland on each broad rock types were unequal. The distinction was also intended to provide a consistent way of dealing with W14 Fagus sylvatica – Rubus fruticosus woodland which can be considered to be either Atlantic acidophilous or Asperulo-Fagetum beech forest depending on the details of its composition and associated woodland types: examples overlying acidic rock types were considered to be Atlantic acidophilous beech forest; those over base-rich rocks to be Asperulo Fagetum. The total area of woodland ('Broadleaved' and 'Mixed, predominantly Broadleaved') within the beech zone, and overlying acidic rock and base-rich to neutral rock types, within it was calculated in GIS from the National Forest Inventory (NFI) (Forestry Commission, 2011). The total area of woodland surveyed with NVC (including W15 and W14) within each zone was taken from survey records (Latham, 2001). The total area of woodland overlying neutral – acidic to neutral rock types in the beech zone was calculated as 7,132.7 ha. Within this zone, 733.3 ha of woodland were surveyed with NVC, of which 126.25ha were W15 and 60.9 ha W14 (W14 is assumed to be Atlantic acidophilous beech forest over these rock types), giving a proportion of (126.25 +60.9)/733.3 = 0.2552. Applying this to the total woodland area = 7132.7 x 0.2552 = 1,820 ha.

The total area of woodland overlying base-rich to neutral rock types in the beech zone was calculated as 9035.1 ha. Within this zone, 970.3 ha of woodland were surveyed with NVC, of which 33.8 ha were W15 (W14 is assumed not be Atlantic acidophilous beech forest over these rock types), giving a proportion of 33.8/970.3 = 0.035. Applying this to the total woodland area = 9035.1 x 0.035 = 316ha. The totals for both rock types within the beech zone is 1,820 + 316 = 2,136 ha. This figure has spurious precision, and a pragmatic estimate for the area of Atlantic acidophilous beech forest in Wales is 2,100 ha, with a suggested range

	of 1,500 – 2,500ha (it is beyond the scope of this study to include formal errors).
4.3: Short-term trend; Direction	See 4.11
4.11: Change and reason for change in surface area of range	The distribution of Atlantic acidophilous beech forests in Wales has not been re-assessed for the current report and 10 km squares from which it has been reported are unchanged.
5.1: Year or period	Total evidence range 1985-2012. Base area figures from NFI are from 2006 (aerial photography derived, published under NFI 2011), some assumptions on proportions used in calculations derive from surveys accumulated from 1985 – 2000.
5.2: Surface area	The area figures have been derived from analysis of the proportional representation of H9120 within relevant vegetation surveys, stratified by environmental zones across Wales. The scope of this analysis did not allow for a formal statistical treatment of errors, and some expert judgement has been used to derive pragmatic range values. Also see comments in section 2.3
5.4: Surface area; Method used	The area figures have been derived from analysis of NFI woodland data (Forestry Commission, 2011) relevant vegetation surveys (Latham, 2001), and geological data (NRW and legacy licensed GIS datasets). The scope of this analysis did not allow for a formal statistical treatment of errors, and some expert judgement has been used to derive pragmatic range values. See section 2.3 and Latham and Rothwell (2012) for a fuller description.
5.8: Short-term trend; Method used	There is no evidence available to judge short-term trends in the total area of this habitat. The total extent figures are derived from data with a wide time base, and their confidence errors are likely to be very much larger than any figures for ad hoc changes that may be reported.
5.14: Change and reason for change in surface area	The area of the habitat has not been re-assessed for this report and so the values are the same as the 2012 submission.

6.2: Condition of habitat; Method used	The only assessment is available from the one SAC on which the habitat is a feature, representing 3.9ha and < 0.2% of the total resource.
6.3: Short-term trend of habitat area in good condition; Period	The single site that have been reassessed between 2013 and 2024 has remained in Favourable condition. No wider implications can be taken from this.
6.4: Short-term trend of habitat area in good condition; Direction	The single site that have been reassessed between 2013 and 2024 has remained in Favourable condition. No wider implications can be taken from this.
7.1: Characterisation of pressures	Pressures: There is little information available to allow an assessment of pressures and threats, and the following is largely based on expert judgement. Seven pressures have been suggested as either High or Medium and are elaborated below; pressures listed as low are not described further. PK04 Atmospheric N-deposition and PK03 Mixed source of air pollution, air-borne pollutants, appears to be universal with all areas in receipt of deposition rates for atmospheric nitrogen in excess of the critical load for the habitat, although the impacts for this habitat are largely unquantified. PJ03 'Other climate related changes in biotic conditions' has been included as a catch-all for the complex of interactions relating to long-term habitat loss, fragmentation, reduction of permeability of the matrix leading to reduced ecological connectivity, combined with the additional pressures of climate change that may require habitat range adaptation. They also interact with many of the specific climate change pressures that have been listed. This pressure may be particularly pertinent for this habitat as it is relatively poorly represented within the SAC series, and may not benefit from the protection this affords and the opportunities to develop more functional networks

of protected sites.

PI02 Invasive non-native species are a pressure on most woodland types. At the one site at which the habitat is a feature Cotoneaster sp. is an issue.

PB04 relates to woodland management and the need for a balance of appropriate management across the resource. For example an absence of intervention may result an even-aged structure with reduced structural diversity, whilst excessive or inappropriately located thinning can damage good structure from natural processes. However, these pressures may not be particularly well understood for this habitat as beech woodland can naturally have a uniform structure (pers. obs. from eastern European 'virgin' beech forests) and their significance may be exaggerated.

PF05 recreational activities and related human impacts may have a disproportionately high impact on this habitat as in Wales it often occurs in close proximity to human settlement and infrastructure.

Method used – pressures

The assessment was based on the 2013 assessment (text reproduced below), updated with expert judgement where possible.

For most habitats, CCW's 'Actions Database' can be used to quantify pressures/threats (Guest, 2012). However, Atlantic acidophilous beech forest has only been recorded on a single management unit amounting to only 3.9ha, < 0.2% of the estimated resource. The information above is therefore based mainly on expert judgement, aided by information from SSSIs where the habitat occurs (e.g. Cwm Merddog woodlands SSSI).

Threats:

The pressures identified above as High and Medium can be expected to remain as Threats. In addition, several pressures currently considered as Low may be High or Medium threats.

PA08, involves both insufficient grazing and over-grazing. Atlantic acidophilous beech forests share many environmental characteristics with H91A0 old sessile oakwoods, and with range expansion in response to climate change may increasingly be subject to similar threats, such as a lack of intermediate levels of grazing to provide suitable conditions for both rare species (bryophytes and lichens) and for tree regeneration. Ideally management should be considered (and co-ordinated) across a series of sites which collectively provide all required conditions, but not necessarily at the same time in the same place.

PI03 deer browsing is currently a relatively localised issue in Wales but experience from Scotland and England suggests that it could present a significant threat to the habitat as deer populations are likely to expand and increase in density. These are generally native (roe deer Capreolus capreolus)or naturalised species (fallow deer Dama dama), but may increasingly involve non-native species, particularly muntjac Muntiacus reevesi.

PI04 remains a serious concern with the increase of tree pathogens in recent years, notably Phytophthora ramorum and related species (Forestry Commission, 2018), some of which affect beech (Packham et al., 2012). However, none are currently known to be having a significant or widespread impact on beech in Wales.

PJ03 'droughts and decreases in precipitation due to climate change' may generally have a negative impacts on beech woodland across its European range (Packham, et al. 2012). However local losses may be more than off-set by the increase in climate-space for the habitat in Wales

	(e.g. Wesche, et al. 2006). For reporting purposes N02 has been downgraded from M to L. Method used – threats: Expert opinion The pressures identified in pressures were used as a basis for threats, but additional information and expert opinion used to extrapolate to possible future impacts, and also to identify large scale issues such as those of climate change that are not evident on a site reporting basis.
8.1: Status of measures	While the majority of most important measures have been identified and taken, in reality some identified measures have not yet been taken while other interventions are needed but the mechanisms have not been resolved.
8.2: Main purpose of the measures taken	The majority of the most important measures currently being undertaken are focused on maintaining the structure and functions of existing stands of Atlantic acidophilous beech forest habitat. However several are also aimed at restoring the structure and functions both on individual sites and to the resource as a whole.
8.5: List of main conservation measures	MK01: Reduce impact of mixed source pollution. MA11: Reduce/eliminate air pollution from agricultural activities MC09: Manage/reduce/eliminate air pollution from resource exploitation and energy production The impacts are probably high and significant on this habitat, but it is not clear what actions may be done locally to reduce in addition to national current regulation of air pollution, hence the Medium ranking assigned here. There are various air quality strategies and initiatives in place to protect and enhance biodiversity. 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.

MJ02: Implement climate change adaptation measures.

This relates to the broad need to develop the resilience of the Atlantic acidophilous beech forest resource beyond the individual site level, planning large scale ecological networks that provide functional connectivity for relevant species between protected sites and the wider resource that allows both mitigation for long-term habitat loss and fragmentation and the capacity for climate change adaptation, including planning for and facilitating the range expansion of beech where appropriate (e.g. Watts et al., 2005; Latham et al. 2013).

MI05: Management of problematic native species - the management of deer and their impacts.

The long term objective is to have populations of deer present at levels appropriate to their ecological situation, allowing them to deliver a positive ecosystem function.

MI03 Management, control or eradication of other invasive alien species.

INNS are likely to be a significant threat to Atlantic acidophilous beech forest habitat, and continued management, vigilance and contingency planning are required.

MB05 Adapt/change forest management and exploitation practices

MB06 Stop forest management and exploitation practices

MB02 Maintain existing traditional forest management and exploitation practices

MB03 Reinstate forest management and exploitation practices

These measures relate to different aspects of the need to have appropriate management across the Atlantic acidophilous beech forest habitat resource to benefit the full-range of its dependent biodiversity, putting the right management in the right place. This means both active interventions where they promote structural diversity and other benefits, as well as minimum intervention where natural processes are operating well.

MF03 Reduce impact of outdoor sports, leisure and recreational activities.

	This is likely to be achieved through careful site and visitor management, through both regulation and awareness raising. MA05/MA06 (low): These two measures relate to developing appropriate grazing regimes that deliver spatial and temporal variation in grazing intensity across the resource to accommodate the ecological requirements of both tree regeneration and the characteristic and rare biodiversity of the habitat. MI06 (low): Controlling and eradicating plant and animal diseases, pathogens and pests. This primarily relates to vigilance and the development of management and contingency plans to address the impacts of tree pathogens such as Phytophthora species. MC04 (low): Reduce impact of hydropower operation and infrastructure. Activities generally relate to preventing schemes in the most sensitive areas, and developing mitigation through appropriate design elsewhere.
9.1:Future trends and prospects of parameters	Range: The habitat currently has limited range in Wales, being restricted to its accepted native range and appropriate soils (Packham et al., 2012). However, the climate-envelope for the habitat is likely to expand north and westwards with climate change (Wesche et al., 2006), giving considerable potential for range expansion on suitable soils both through colonisation and acceptance of the native status of habitat originating through beech planting. There may be simultaneous minor losses of habitat within its current range as conditions locally become too dry to support beech. This will however, be very difficult to monitor due to the historical planting of beech outside of its natural range. Area: On balance the future trend is considered to be positive. A

	general increase in woodland cover looks likely in Wales as it is supported by WG policy. This gives potential for Atlantic acidophilous beech forest to expand its area, facilitated by the expansion of its climate-envelope north and westwards with climate change; much of mid and north Wales are likely to have suitable soils and climatic conditions to support this habitat. There may be simultaneous minor losses of habitat within its current range as conditions locally become too dry. Significant gains in area are also likely to come from restoring ancient woodland (PAWS) sites, again supported by WG policy. Structure and function: There are both positive and negative factors in operation with many uncertainties for the future, so it is not possible to form a confident opinion over whether either will prevail or whether they will cancel each other out overall leading to a stable future trend. 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 stable; 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) there has been no significant change in distribution pattern within range
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 good; (ii) the Future prospects for Area covered by habitat are poor; 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 or more of the conclusions are Unfavourable-bad.
11.3: Surface area of the habitat type inside the network; Method used	NVC maps exist for the majority of woodland SACs in Wales; surveys are described in Latham (2001) and digitised by GIS analysis (held on NRW GIS system). Areas Atlantic acidophilous beech forest have previously been calculated for inclusion on JNCC's data forms: values for each of these for which the habitat is listed as a feature (grades A-D) were compiled, but then compared with habitat maps to re-assess the total area of the habitat included on SACs rather than that originally mapped as a feature.
11.4: Short-term trend of habitat area within the network; Direction	The single representation of the habitat as a SAC feature has been assessed as Favourable over two reporting rounds.
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.