The Ecology Co-op
ENVIRONMENTAL CONSULTANTS
Unit 4, Langham Stables, Langham Lane, Lodsworth, Petworth, West Sussex, GU28 9BU.

Tel: 01798 861 800 - E-Mail: info@ecologyco-op.co.uk - Web: www.ecologyco-op.co.uk

Biodiversity Impact Calculation

Site Name

St Charles Borromeo Church

Client

Quantum Homes

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Author

Jess Saunders

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The Ecology Co-operation Ltd
Registered Office: Unit 4, Langham Stables, Langham Lane, Lodsworth, West Sussex, GU28 9BU
Company number: 8905527

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Original	**Jess Saunders** BSc MSc	**Emma Baker** BSc (Hons), MSc, MCIEEM	31/07/2025	N/A	

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About the Author

This report has been prepared by Jess Saunders, a GIS consultant at The Ecology Co-op. Jess holds a BSc in Environmental Science and a MSc in GIS and Remote sensing with Environmental Management. After being with the company for 9 months she has completed UK Hab mapping in QGIS for a number of BNG and large-scale projects, including a 290ha site.

About the Reviewer

This report has been reviewed by Emma Baker, who is a Senior ecologist with eight years experience. She holds Level 1 great crested newt and hazel dormouse survey licenses. As a Full member of the Chartered Institute for Ecology and Environmental Management (CIEEM), she is bound by their code of professional conduct.

Report Summary

Purpose	The Ecology Co-operation was commissioned by Quantum Homes to undertake a Biodiversity Impact Calculation of a proposed development on St Charles Borromeo Church of nine additional residential units on site with adjoining vegetated gardens, as well as an access path/ road and areas of modified grassland, using the Statutory Biodiversity Metric, to quantify net change in biodiversity.
Summary of Losses and Gains	The proposed development scheme at this site will result in the loss of: On-site • 0.149ha developed land, sealed surface (u1b), N/A • 0.082ha buildings (u1b5), N/A • 0.093ha vegetated gardens (u1 828) N/A • 0.024ha Individual trees (u 200), Moderate The proposed development scheme at this site will retain: On-site • 0.014ha Individual Trees, Moderate • 0.004ha Individual Trees, Good Post intervention the following habitats will be created: On-site • 0.086ha Buildings (u1b5) • 0.129ha developed land, sealed surface (u1b) • 0.089ha vegetated garden (u1 828) • 0.03ha modified grassland (g4), Poor • 0.0366ha Urban trees (u 200), Poor • 0.071km of Non-native and ornamental hedgerow, Poor
Final Metric Results	The Biodiversity Impact Calculation has demonstrated that the proposed scheme will result in a likely net gain of 0.11 habitat units (+28.98%), and a creation of 0.07 hedgerow units. The current scheme satisfies the trading rules of the Statutory Biodiversity Metric.
Does the scheme meet net gain requirements?	The current scheme meets the 10% mandatory net gain value set out within the Environment Act 2021 and biodiversity aims preferred by Worthing Borough Council have been achieved by reaching at least 20% net gain.

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1 INTRODUCTION

1.1 Purpose of the Report

There has been a mandatory requirement for all new developments to demonstrate 'net gains' in biodiversity from the 12th of February 2024, following the release of updated National Planning Policy Framework[1] by the Department of Housing, Communities and Local Government and the Environment Act 2021[2]. A mandatory value of 10% net gain in biodiversity value for all developments (that do not meet exemption criteria) is required under the Environment Act 2021.

This document includes a baseline 'Biodiversity Impact Calculation' (BIC) for the proposed development at St Charles Borromeo Church. The calculation utilises the Statutory Biodiversity Metric and assigns 'biodiversity units' to the pre-existing habitats contained within a proposed development site and those that are predicted to be lost, restored and/or created once the development has been constructed. This allows an objective comparison to be made between the existing biodiversity value of a given site and the predicted biodiversity value post development, with the net change in biodiversity value subsequently quantified.

The purpose of this document is to present the findings of the BIC based on the most up-to date existing habitat survey information and the most current outline plans for the proposed development of the site. BICs provide an evidence base for discussions between the ecological consultant, developer and the local planning authority regarding on-site avoidance, on-site mitigation and off-site compensation requirements.

This report will be used in relation to a proposal for the development of nine additional residential buildings on site with adjoining vegetated gardens, as well as an access path/ road and areas of modified grassland. The church and one of the adjacent houses on site will be demolished to facilitate the proposal. Given the likelihood of proposed changes in the design scheme, some of the recommendations will potentially be subject to change. The results of the BIC are deemed accurate for the most recent layout plan.

This report was commissioned and produced at the request of Quantum Homes.

1.2 Background

The site measures 0.32ha in area, and is located on Chesswood Road Worthing, West Sussex BN11 2AE. It comprises a large area of hard standing with patches of gardens and modified grassland. Three buildings are present onsite, including a large three-story church building and a house to the west of the church which are both to be removed, and a further house which will remain.

The site was subject to a Bat Scoping Assessment in July 2025, undertaken by The Ecology Co-op.

[1] HM Government (2024). National Planning Policy Framework. Department for Housing, Communities and Local Government. Available online at: https://www.housinglin.org.uk/_assets/Resources/Housing/OtherOrganisation/NPPF-December-2024.pdf
[2] HM Government (2021). Environment Act 2021 Available online at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

Habitats (UKHAB) within the site and along the site boundaries are shown in (Figure 1), these include:

- Buildings (u1b5)
- Developed land, sealed surface (u1b)
- Vegetated gardens (u1 828)
- Individual Urban Trees (u 200)

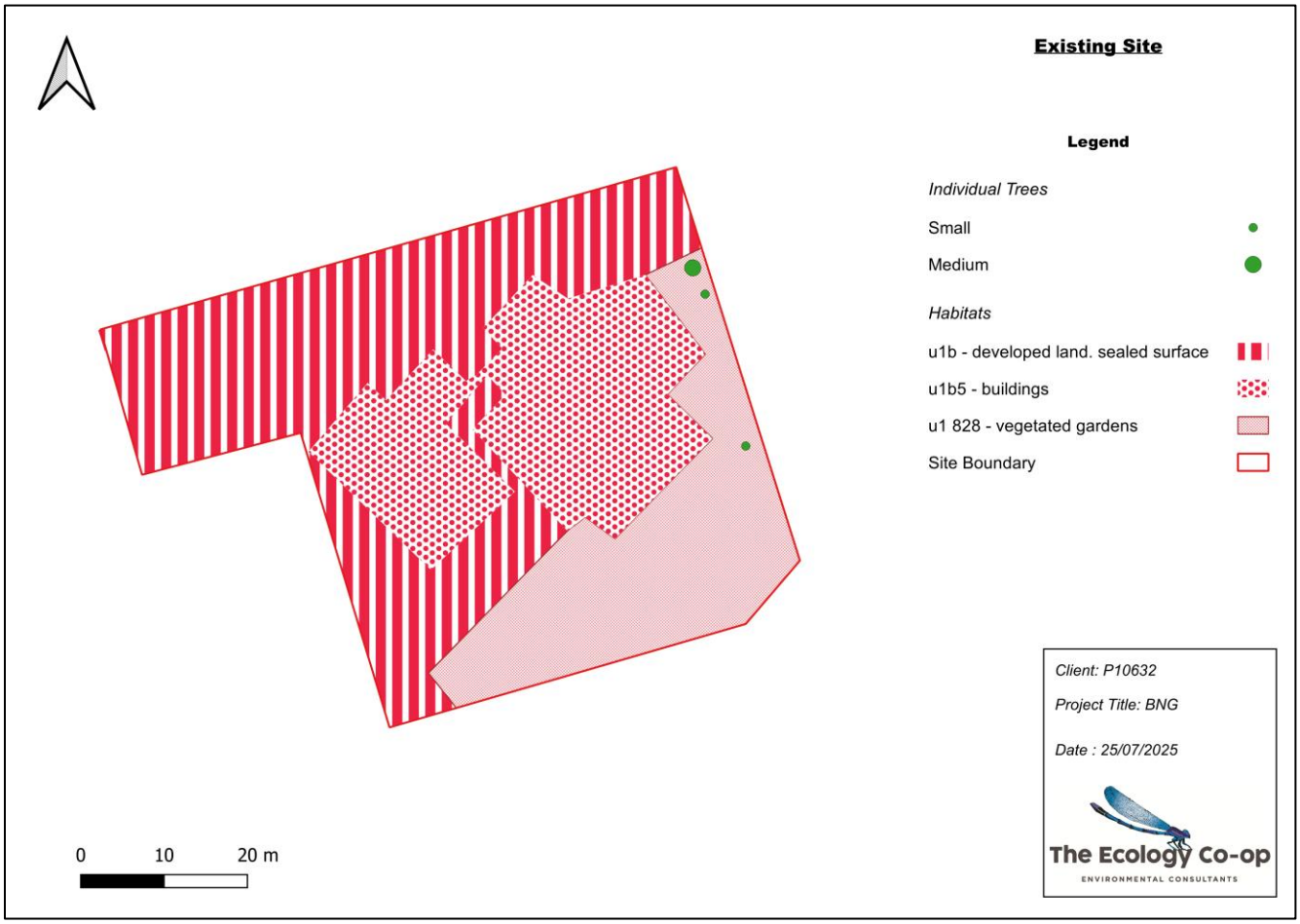

Figure 1. UKHAB map showing existing habitats within the site. The site boundary is indicated with a Red Line. Produced using QGIS software, version 3.40.5 – Bratislava.

Figure 2. Proposed scheme layout for the development at St Charles Borromeo Church, reproduced from Quantum Homes, drawing number SK 20, date:08/04/2025.

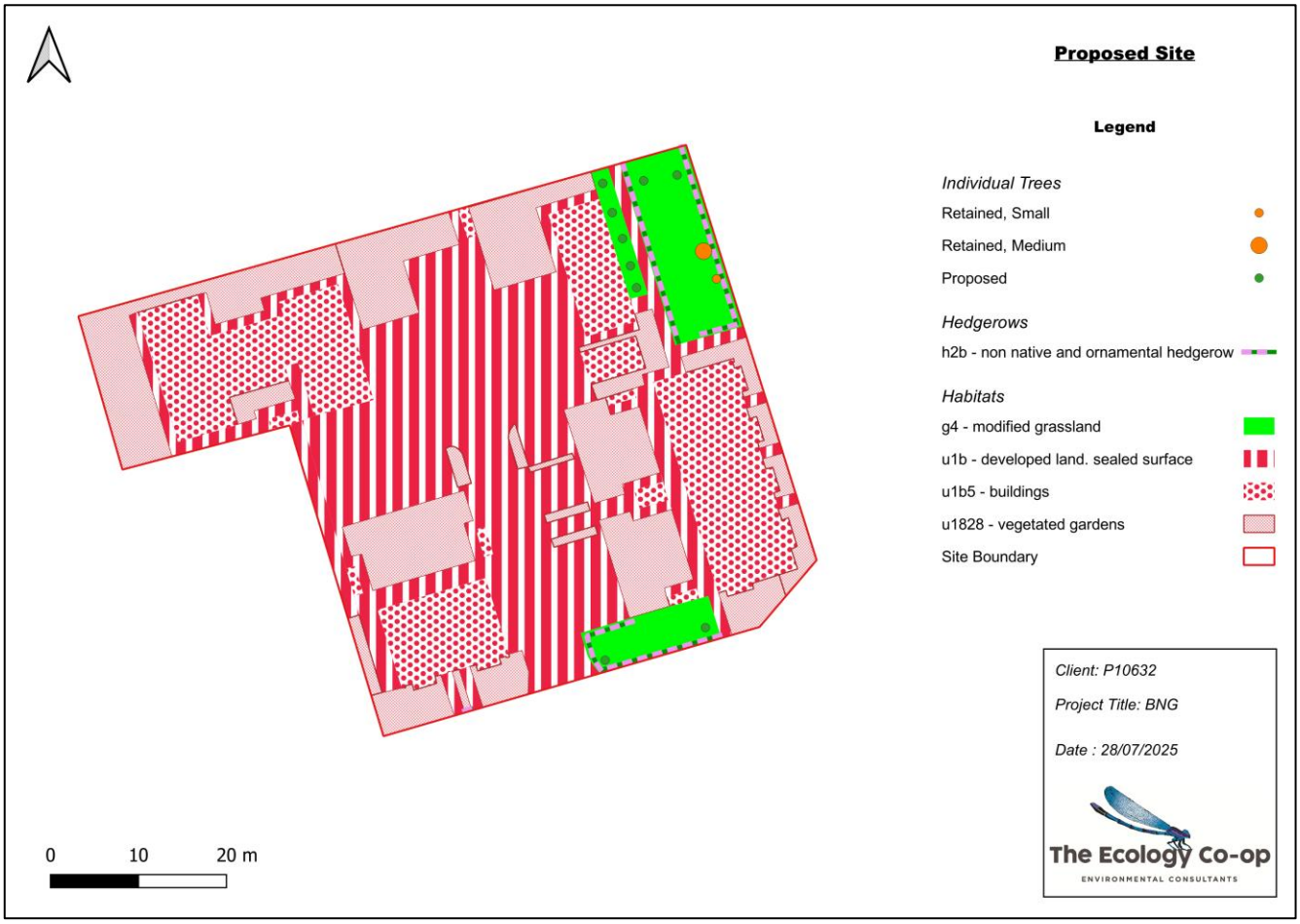

Figure 3. UKHAB map showing proposed habitats within the site. The site boundary is indicated with a Red Line. Produced using QGIS software, version 3.40.5 – Bratislava.

1.3 Summary of Previous Survey Work

A Bat Scoping Assessment was undertaken by The Ecology Co-op in July 2025, where no bats were found roosting in the buildings planned to be removed, however, bat droppings were identified in both the existing church and residential building. Further evidence of access through a slipped tile at the northwestern corner and hole on the northern wall were found on the existing church building.

1.4 Policy and Legislation

NPPF (2024)

The NPPF sets out the Government's view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regards to the operation of the planning system.

Paragraph 187d, states that planning policies and decisions should contribute to and enhance the local environment by:

- "*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*."

Paragraph 192b, states that to protect and enhance biodiversity and geodiversity, plans should;

- "*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity*."

Paragraph 193d, states that when determining planning applications, authorities should apply the following principle:

- *"development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.*

Environment Act (2021)

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

Local Policy

Development management policy 18 (DM18) of the current local plan for Worthing Borough Council 2020-2036[33] states that:

"New developments should provide a minimum of 10% net gain for biodiversity - where possible this should be onsite. Where it is required/necessary to deliver biodiversity net gain offsite this should be part of a strategic ecological network having regard to Green Infrastructure and Local Nature Recovery strategies. Where it is achievable, a 20%+ onsite net gain is encouraged and is required for development on previously developed sites".

2 METHODOLOGY

This Biodiversity Impact Calculation uses the Statutory Biodiversity Metric calculation tool published by Natural England[4] . This is used to calculate 'habitat units' and 'hedgerow units' by multiplying the area (ha) or lengths (km), 'distinctiveness' (habitat type), 'condition' (quality), and strategic significance (location in relation to the authority's local strategy) of each habitat parcel.

The calculation provides a negative value to the biodiversity units where habitat is being directly lost to development. Where habitats are enhanced or created on-site, or off-site, the calculation gives a positive value but adds risk factors that account for uncertainty - difficulty in creating new habitats and time delays while they establish; habitats that are more difficult to restore or that will take a long time to reach a set target condition will score lower and therefore make a smaller positive contribution.

Where on-site gains are equal to or larger than the losses, the project is deemed to have neutral biodiversity impact or biodiversity 'net gain' respectively.

Where on-site gains do not outweigh on-site losses and a biodiversity 'net loss' is calculated, this becomes an 'offset requirement'. Offsets can be provided by further habitat creation or enhancement in-situ or elsewhere and are assessed using the same metric to balance the predicted gains against the losses to ensure no net loss will be achieved. It follows that a biodiversity net gain can still be achieved by providing higher biodiversity gains through the offset than the net loss resulting from the development.

Note that the metric does not allow for 'trading down'; one of the key principles in measuring biodiversity net losses or gains is that habitats of high ecological importance cannot be offset by the creation of larger areas of habitats with lower value. The Statutory Biodiversity Metric calculation tool includes a 'trading down correction' that deducts the number of biodiversity units that are not accounted for through the creation of equivalent high distinctive habitats than that lost. For example, the loss of a small area of lowland meadow priority habitat (high distinctiveness) will not be offset by a larger area of modified grassland (medium distinctiveness) and will only be offset by an equivalent area of habitat of the same distinctiveness or higher.

[3] Worthing Borough Council (2023), *Local Plan 2020 – 2036*. Available online at: Worthing Local Plan 2023 (adopted) - Complete Document

[4] Natural England (2023) *The Statutory Biodiversity Metric – Calculation Tool*. Available online at: *https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides*

2.1 Data Sources

This calculation uses the most up to date survey information, using botanical data and condition assessments gathered during the site visit in July 2025. The areas of each habitat category were measured using GIS mapping tools (QGIS). Condition assessments were made in accordance with the Statutory Biodiversity Metric condition assessments document[5] and the Statutory Biodiversity Metric: draft user guide[6] . Applying the precautionary principle, a presumption for the higher condition was used where there was any uncertainty in the condition of existing habitats.

To predict habitat/hedgerow units supported after by the site after completion of the development, the aerial imagery was overlaid by the proposed scheme layout (see
). This allowed direct losses of habitats to be measured where the built environment overlaps with pre-existing habitat, with gardens and amenity areas treated separately. The habitats that are 'created' after development are assumed to achieve the highest level of condition as appropriate; a separate landscape and enhancement plan should be produced to ensure this condition is achieved.

The Statutory Biodiversity Metric calculation tool uses a separate calculator spreadsheet for linear features. This works under the same principles as above but replaces areas of habitat with linear length of a feature. It should be noted that because linear features often have higher ecological importance, linear habitats are assigned higher distinctiveness and must be offset with other linear features. The hedgerow units generated for linear features are not equivalent or interchangeable with biodiversity calculations for areas of habitat.

[5] Natural England (2023) *Statutory Biodiversity Metric Condition Assessments* Available online at: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides

[6] Natural England (2023). *Statutory Biodiversity Metric draft user guide.* Available online at: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides

3 RESULTS

3.1 Existing Habitats Assessment

A summary of habitats and condition assessments is provided in Table 1. Full results of condition assessments for habitats which require it (using the Statutory Biodiversity Metric condition assessment document) are provided in Appendix 1.

Overall, the on-site calculated baseline is 0.39 habitat units.

Table 1. Existing habitat conditions for St Charles Borromeo Church.

Habitats		Condition Assessments
UK Habitat (UKHAB) Classification System	**Location/Reference (habitat parcels split if multiple areas with different condition assessments)**	**Condition**
Developed land; sealed surface (u1b)	Paths and developed land covering a large scope of the site, surrounding the existing church and buildings.	N/A
Buildings (u1b5)	Large church and one existing home located in the centre of the site.	N/A
Vegetated Garden (u1 828)	Areas south and southeast of the site, located off from the existing church and residential building.	Condition assessment, N/A
Individual Trees (u 200)	1 small and 1 medium tree scattered around the east of the site.	Moderate
Individual Trees (u 200)	One small tree in the east of the site.	Good

3.2 Habitat Losses and Gains

The proposed development scheme at this site will result in the loss of:

On-site

- 0.149ha developed land, sealed surface (u1b),
- 0.082ha buildings (u1b5),
- 0.093ha vegetated gardens (u1 828),
- 0.004ha Individual small sized tree, Moderate (u 200)

The proposed development scheme at this site will retain:

On-site

- 0.016ha Individual medium sized tree, Moderate (u 200)
- 0.004ha Individual small sized tree, Good (u 200)

Post intervention the following habitats will be created:

On-site

- 0.086ha Buildings (u1b5)
- 0.129ha developed land, sealed surface (u1b)
- 0.089ha vegetated garden (u1 828)
- 0.03ha modified grassland (g4), Poor
- 0.0366ha Small urban trees (u 200), Poor
- 0.071km, non-native and ornamental hedgerow, Poor

The overall results of the calculations are presented in Table 2. Please refer to the Statutory Biodiversity Metric calculation tool supplied with this document (submitted separately) for full details of the calculation.

Table 2. Headline results of the Biodiversity Impact Calculation for the proposed development at St Charles Borromeo Church

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.11
	Hedgerow units	0.07
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	28.98%
	Hedgerow units	N/A
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

4 CONCLUSIONS

The Statutory Biodiversity Metric calculation has demonstrated that the proposed scheme will result in a likely net gain of **0.11 habitat units (+28.98%)**, and a creation of **0.07 hedgerow units**, with all trading rules met. Further biodiversity aims preferred by Worthing Borough Council have been achieved by reaching 20% net gain.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.

APPENDIX 1 – Habitat Condition Assessment Sheets

Condition Sheet: INDIVIDUAL TREES Habitat Type
Habitat Types
Individual trees – Urban trees **Individual trees – Rural trees** Complete a condition sheet for each tree or block of trees. ***Please see the separate Line of trees condition sheet for a line of <u>rural</u> trees. You should only use the Line of trees condition assessment and record that habitat type in <u>rural</u> locations.***
Habitat Description
Individual trees (description applied to the urban or rural environment): Young trees over 7.5 cm in diameter at breast height whose canopies are not touching. **Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only):** Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies should predominantly overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category.

On-site or off-site, site name and location		**Survey date and Surveyor name**	
		Survey reference (if relating to a wider survey)	

Limitations (if applicable)		**Habitat parcel reference**									
		28480920	28480922	28480924	28480926	28480983	28480985	28480987			

		Grid reference										
Condition Assessment Criteria												
		Criterion passed (Yes or No)										**Notes (such as justification)**
A	The tree is a native species (or at least 70% within the block are native species).	No	No	No	No	No	Yes	No				
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Yes	Yes	Yes	Yes	No	Yes	Yes				

C	The tree is mature (or more than 50% within the block are mature)[1].	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Yes	Yes	Yes	Yes	Yes	Yes	Yes				

E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	No	No	No	No	Yes	No	No				
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Number of criteria passed		4	4	4	4	4	5	4				
Condition Assessment Result (out of 6 criteria)	**Condition Assessment Score**	**Score Achieved ×/✓**										
Passes 5 or 6 criteria	Good (3)						Yes					
Passes 3 or 4 criteria	Moderate (2)	Yes	Yes	Yes	Yes	Yes		Yes				
Passes 2 or fewer criteria	Poor (1)											
Note that 'Fairly Good and Fairly Poor' condition												

categories are not available for this broad habitat type.	

Suggested enhancement interventions to improve condition score[2]

Footnotes
Footnote 1 - See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and: Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk) **Footnote 2** - Enhancement of this habitat type is only possible by improving the habitat so that it meets all Criteria B, D and F. It is not possible or appropriate to enhance individual tree/s through meeting just one or two of those Criteria, nor by meeting Criteria A, C or E.