



Elite Ecology
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**Land Adjacent to Forest Hill Golf Club,
Botcheston**



Biodiversity Net Gain Report

June 2026



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0. Executive Summary

This report has been prepared at the request of Mr. John Nixon (Forest Hill Golf Club). It relates to the proposed development located at Land Adjacent to Forest Hill Golf Club, Markfield Lane, Botcheston, Leicestershire, LE9 9FH (Central OS Grid Reference: SK 48041 06217). For this report, a biodiversity impact assessment calculation has been made. This document should be read in conjunction with the completed Excel spreadsheet.

The current proposals for the site are to construct a hotel and car park. This will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site.

The site has recently been cleared. Due to this the habitats within the baseline of this report are based on previous data collected by Elite Ecology in 2022, Satellite imagery and precautionary measure set out by the Statutory Biodiversity Metric User Guide. The baseline habitat plan, habitat codes and target notes for the site are located within **Appendix C**. The following habitats were recorded on site and in the surrounding area (in primary habitat code alphabetical order):

Habitat Mitigation Score

Biodiversity Unit Type	Baseline Units		Post-Development Units Without Recommendations			Post-Development Units With Recommendations			
	On-Site	Off-Site	On-Site	Off-Site	% Net Gain	On-site	Off-site	Statutory Biodiversity Credits	% Net Gain
Area Habitats	8.88	225.70	1.60	206.98	-292.77	1.88	233.64	N/A	+10.59
Linear Habitats	1.60	15.24	0.29	11.40	-243.75	3.57	14.02	N/A	+43.19
Linear Habitat – Rivers and Streams	0.31	3.48	0.31	3.48	-0.00	0.31	N/A	N/A	N/A

Habitat Creation and Management

Habitat creation and management details for the habitats recommended can be found within **Section 6**. Following the management plan will ensure that habitats meet their target conditions. Habitats that will be implemented are as follows:

- Scattered Trees.
- Wildflower Planting.
- Mixed Scrub.

Timetables for post-monitoring can be found in **Section 7**.

Species Specific Enhancements

A number of species-specific enhancements can be found in **Section 6**.

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1. Introduction

1.1 Report Rationale

This report has been prepared at the request of Mr. John Nixon (Forest Hill Golf Club). It relates to the proposed development located at Land Adjacent to Forest Hill Golf Club, Markfield Lane, Botcheston, Leicestershire, LE9 9FH (Central OS Grid Reference: SK 48041 06217). For this report, a biodiversity impact assessment calculation has been made. This document should be read in conjunction with the completed Excel spreadsheet.

1.2 Site Description

The site is situated in a rural setting of Botcheston, Leicestershire. It is approximately 1.22 hectares in size.

The site has recently been cleared. Due to this, the habitats within the baseline of this report are based on previous data collected by Elite Ecology in 2022, as well as satellite imagery, and precautionary measures set out by the Statutory Biodiversity Metric User Guide.

Within the wider landscape, further habitats are present. These come in the form of agricultural land, a clay pit, Forest Hill Golf Club, hedgerows, ponds, residential structures (and their associated land/gardens), running water, the Thornton Reservoir, and woodland. The habitats that surround the site also have the potential to be utilized by a variety of protected species.

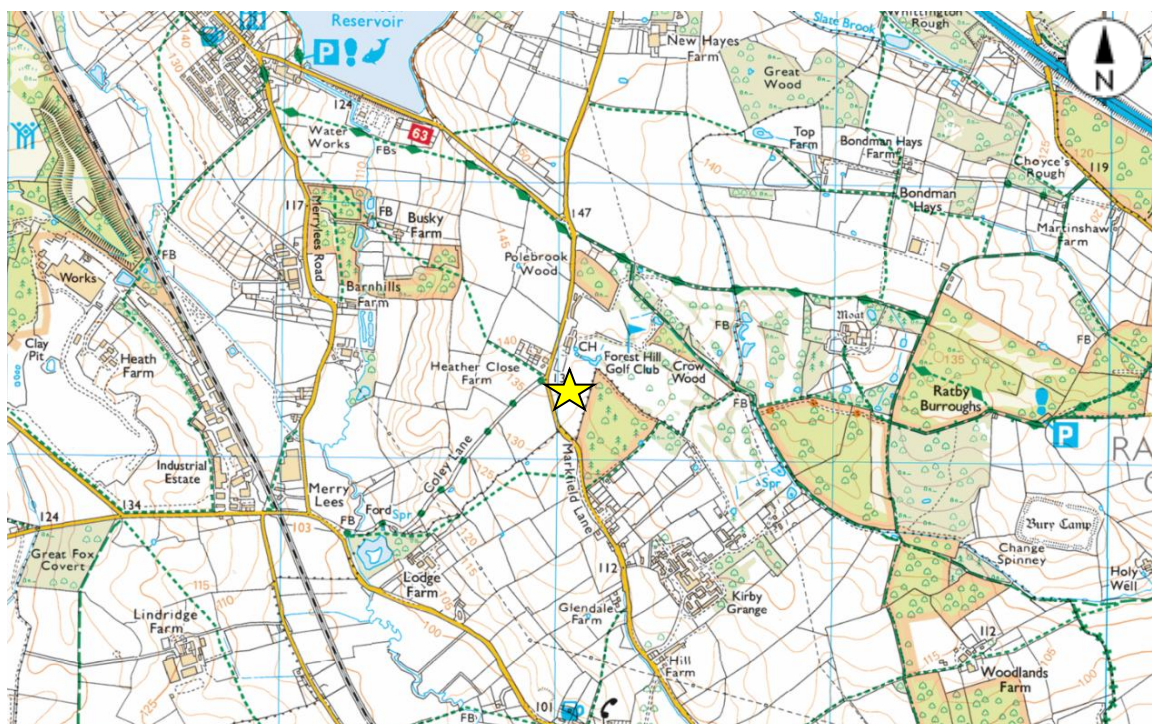
Figure 1: An aerial map showing the approximate boundary of the site at Land Adjacent to Forest Hill Golf Club, Botcheston (as shown by the red outline).



Figure 2: An aerial map showing the site at Land Adjacent to Forest Hill Golf Club, Botcheston (as shown by the yellow star) in relation to some of the local landscape.



Figure 3: An OS map obtained from Bing showing the site at Land Adjacent to Forest Hill Golf Club, Botcheston (as shown by the yellow star).



1.3 Proposals

The current proposals for the site are to construct a hotel and car park. This will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site.

1.4 Scope of Report

This report aims to:

- Establish the total number of baseline and lost habitat, hedgerow, and river units at the site of the proposed scheme.
- Establish the total number habitat, hedgerow, and river units that are to be created, retained and/or enhanced under landscape and ecological mitigation proposals at the proposed works site.
- Determine whether the proposed scheme will result in a net loss, no net loss, or a net gain for biodiversity.
- Make further recommendations to gain the required 10% minimum net gain for biodiversity.

1.5 Biodiversity Net Gain Relevant Policies

The appraisal has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England. These are:

- UK Biodiversity Action Plan (UKBAP).
- The Natural Environment and Rural Communities (NERC) Act 2006.
- The UK Post-2010 Biodiversity Framework (2011-2020).
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services.
- The National Planning Policy Framework (NPPF) 2021.
- Environmental Act 2021.
- Local policy.

A full explanation of these policies can be found within **Appendix E**.

2. Methodology

Personnel

Field surveys have been undertaken by licensed ecologist/s, members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and members of Elite Ecology staff. A walkover of the site was undertaken on the 7th of October 2024 by **Mr. Connor Wild**: MSc Senior Ecologist. A further walkover of the site was conducted on the 28th of April 2025 by **Mr. Peter Royall**: BSc (Hons), Ecologist and **Mr. Botond Hajdo**: BSc (Hons), Assistant Ecologist.

The Biodiversity Net Gain Assessment has been carried out by **Mr. Connor Wild**: MSc Senior Ecologist and **Mr. Lewis Webster**: MSc, Office Ecologist, in line with CIEEM Guidelines on Good practice principles for development (2016), CIEEM A Practical Guide (2019) and BS 8683:2021 - Process for designing and implementing biodiversity net gain. This net gain report and assessment has been reviewed by **Mr. Richard Millington**: BSc (Hons), ACIEEM, CERPIT, MRSB, MArborA, Principal Ecologist.

Survey of Baseline Habitats and Condition

Habitat typing and condition assessments are undertaken during a Preliminary Ecological Appraisals (PEA) or similar studies. The baseline also considers historic records for the site and local area via a desktop study (satellite imagery, previous ecological reports), as well as additional surveys to assess the presence/absence of species in certain situations. Conditions of habitats and hedgerows are assessed using the scoring systems provided in the Statutory Biodiversity Metric Condition Assessment Sheet.

River assessments are carried out through a MoRPH5 Pro survey and River type survey. At least one MoRPH5 is undertaken per reach on site that will be directly or indirectly impacted with a further MoRPH5 undertaken upstream to record a more “natural setting” if required. This data is then processed via Cartographer to give the condition of the rivers on site.

Calculations of Baseline Habitats

Using Geographic Information Software (GIS), baseline habitats are measured in hectares (ha) using vector layer polygons. These measurements are then input into the DEFRA Statutory Biodiversity Metric Calculation Tool. Habitat condition and connectivity are then input into the calculator. The area of habitat retained is then entered into the calculation to give a final sum of baseline units and lost unit.

Each habitat has a base score of 1, this is then multiplied by the size of the habitat (ha). The habitat is then multiplied by its distinctiveness:

- Very low – 0
- Low – 2
- Medium – 4
- High – 6

The next multiplier is based on the condition of the habitat:

- N/A-other/agricultural – 0
- Poor – 1
- Fairly poor – 1.5
- Moderate – 2
- Fairly good – 2.5
- Good – 3

Calculations of Post-development Habitats

The calculation is informed by planning design, landscape plans, and proposed ecological mitigation. Plans are georeferenced into GIS and are similarly measured in hectares (ha) using vector layer polygons. These measurements are then converted into input into the DEFRA Statutory Biodiversity Metric Calculation Tool. A target condition will be assigned to each new habitat following the same scores as above. The calculator will generate a proposed time to hit this target condition and difficulty score.

3. Baseline Conditions

3.1 Habitats

The site has recently been cleared. Due to this, the habitats within the baseline of this report are based on previous data collected by Elite Ecology in 2022, as well as satellite imagery, and precautionary measures set out by the Statutory Biodiversity Metric User Guide. The baseline habitat map, habitat codes and target notes for the site are located within **Appendix C**.

On Site:

Area Habitats	Condition	Justification
Modified Grassland	Poor	Retained habitat from site clearance. Fails criterion 1 which is required to meet moderate or higher condition (see Appendix B).
Other Neutral Grassland	Good	Habitat and condition chosen due to site clearance.
Artificial Unvegetated, Unsealed Surface	N/A – Other	Condition automatically chosen by the metric.
Tall Forbs	Good	Habitat and condition chosen due to site clearance.
Mixed Scrub	Good	Habitat and condition chosen due to site clearance.
Rural Tree	Good	Habitat and condition chosen due to site clearance.
Linear Habitats	Condition	Justification
Line of Trees	Moderate	Passes 3 criterion within the condition assessment (see Appendix B).
Native Hedgerow with Trees	Good	Habitat and condition chosen due to site clearance which had degraded this habitat.
Line of Trees	Good	Habitat and condition chosen due to site clearance which had degraded this habitat.
Native Hedgerow with Trees	Good	Habitat and condition chosen due to site clearance which had degraded this habitat.
Water Course Habitats	Condition	Justification
Ditch	Poor	Passes 4 criterion within the condition assessment (see Appendix B).

Off Site:

Area Habitats	Condition	Justification
Artificial Unvegetated, Unsealed Surface	N/A – Other	Condition automatically chosen by the metric.
Tall Forbs	Good	Habitat and condition chosen due to site clearance.
Mixed Scrub	Good	Habitat and condition chosen due to site clearance.
Rural Tree	Good	Habitat and condition chosen due to site clearance.
Rural Tree	Moderate	Trees across the golf course passed three to four of the six conditioning criteria (see Appendix B).
Other Neutral Grassland	Good	Habitat and condition chosen due to site clearance.
Modified Grassland	Poor	Fails essential conditioning criterion A (see Appendix B).
Ponds (non-priority habitats)	Poor	Ten ponds pass less than five of the conditioning criteria (see Appendix B).
Ponds (non-priority habitats)	Moderate	One pond passes six of the seven conditioning criteria (see Appendix B).
Ponds (non-priority habitats)	Good	One pond passes all seven conditioning criteria (see Appendix B).
Other Woodland; Broadleaved	Moderate	Seven of the woodland parcels on site score a range of 26 to 32 across the various conditioning criteria (see Appendix B).
Other Woodland; Broadleaved	Good	One of the woodlands scores a total of 36 across the various conditioning criteria (see Appendix B).

Linear Habitats	Condition	Justification
Line of Trees	Good	Habitat and condition chosen due to site clearance which had degraded this habitat.
Native Hedgerow with Trees	Good	Habitat and condition chosen due to site clearance which had degraded this habitat.
Native hedgerow - associated with bank or ditch	Moderate	Passes 7/10 criteria (see Appendix B).
Native hedgerow	Moderate	Passes 5/8 criteria (see Appendix B).
Native hedgerow with trees	Moderate	Passes 6/10 criteria (see Appendix B).
Water Course Habitats	Condition	Justification
Ditch	Poor	Passes 4 criterion within the condition assessment.

3.2 Strategic Significance

Strategic significance is based on information gathered from the local plan, local policies map, and MAGIC.

Habitats	Strategic Significance	Justification
All Habitats	Area/compensation not in local strategy/no local strategy.	Area not identified in the local plan/strategy for biodiversity, nor is it deemed to be in a particularly ecologically valuable area.

3.3 Species

The Preliminary Ecological Appraisal survey revealed that the habitats that have been outlined for the proposed development area do contain protected species potential. The following assessment has also considered the adjacent habitats and connectivity to the wider landscape for all protected and rare species.

Please note that this assessment represents the potential of the site to support rare or protected species before the site clearance. Please refer to the report entitled “Land adjacent to Forest Hill Golf Club, Botcheston – Elite Ecology PEA Report (November 2024)”.

Species	Further Surveys	Further Surveys Done	Summary of Results
Amphibians	Surveys	Yes	An eDNA survey has been carried out on the ponds across the site, with a positive result on P4 .
Badgers	None	N/A	No badger setts were recorded on or immediately offsite. As no setts are located onsite, no direct conflicts relating to badgers and development will be raised.
Bats	Precautionary Measures	N/A	The trees on site that would be removed under the current proposal are very young, ultimately reducing its protected species potential. Also, due to highly suitable foraging habitat, a low lighting plan will need to be implemented into the scheme of works.
Birds	Precautionary Measures	N/A	Due to the presence of suitable bird breeding habitat, building works are to be undertaken outside of the bird breeding season. If this is not possible, a further inspection by a suitably qualified ecologist will be required no more than 24 hours prior to commencement of works.

Flora	None	N/A	The updated walkover revealed that no rare or protected floral species were located on site. As such, no further action is required.
Hazel Dormice	None	N/A	Hazel dormice are considered to be absent within Leicestershire. As such, no further action is required.
Hedgehogs	Precautionary Measures	N/A	If hedge or dense vegetation is cleared between 1 st of November and 31 st of March, an inspection by a suitably qualified ecologist is required to ensure no hedgehogs are present. Slopes or ramps are to be provided in any trenches or excavations to allow hedgehogs to escape, and any pipework greater than 150mm in diameter is to be capped off.
Invertebrates	Precautionary Measures	N/A	Only common species are likely to utilise the habitats on site. However, the plans include the loss of scrub and other associated habitat for these invertebrate species. Precautionary measures such as remediation planting of scrub and wildflowers are recommended.
Reptiles	None	No	Due to the habitat clearance on site, the potential of it to support reptiles has been drastically reduced to the point where it is now negligible . As such, no further action is required for reptiles.

4. Baseline Calculation and Proposal Impact

4.1 Existing Habitats

The table below outlines the existing site status based on the most recent field survey.

On-site Area Habitats

Habitat Description	Habitat Area (ha)	Distinctiveness	Score	Condition	Score	Baseline Habitat Units	Habitats Retention (ha)			Habitat Units Lost
							Retained	Enhanced	Lost	
Modified Grassland	0.45	Low	2	Poor	1	0.90	0.00	0.00	0.45	0.90
Other Neutral Grassland	0.44	Medium	4	Good	3	5.28	0.00	0.00	0.44	5.28
Artificial Unvegetated, Unsealed Surface	0.08	V.Low	0	N/A - Other	0	0.00	0.00	0.00	0.08	0.00
Tall Forbs	0.09	Low	2	Good	3	0.54	0.00	0.00	0.09	0.54
Mixed Scrub	0.16	Medium	4	Good	3	1.92	0.00	0.00	0.16	1.92
Rural Tree	0.02	Medium	4	Good	3	0.24	0.00	0.00	0.02	0.24
TOTALS*	1.22					8.88	0.00	0.00	1.22	8.88
*Areas excluding individual trees.										

Based on the above information, the on-site habitat biodiversity value is calculated at **8.88** habitat units, with **8.88** units lost during the development. Therefore, **0.00** habitat units will remain.

On-site Linear Habitats

Habitat Description	Habitat Area (ha)	Distinctiveness	Score	Condition	Score	Baseline Habitat Units	Habitats Retention (ha)			Habitat Units Lost
							Retained	Enhanced	Lost	
Line of Trees	0.05	Low	2	Moderate	2	0.20	0.00	0.00	0.05	0.20
Native Hedgerow with Trees	0.04	Medium	4	Good	3	0.48	0.00	0.00	0.04	0.48
Line of Trees	0.08	Low	2	Good	3	0.48	0.00	0.00	0.08	0.48
Native Hedgerow with Trees	0.04	Medium	4	Good	3	0.48	0.00	0.00	0.04	0.48
TOTALS*	0.21					1.64	0.00	0.00	0.21	1.64

To show degradation the linear habitats are shown as lost and will be recorded in their new condition within the proposed habitat section. Based on the above information, the on-site habitat biodiversity value is calculated at **1.64** linear habitat units, with **1.64** units lost during the development. Therefore, **0.00** linear habitat units will remain.

On-site Watercourse Habitats

River Type	River Length (km)	Distinctiveness	Score	Condition	Score	Baseline River Units	Encroachment (Watercourse & riparian)	River Retention (Km)		River Units Lost
								Retained	Lost	
Ditch	0.09	Medium	4	Moderate	2	0.31	No Encroachment Major/No Encroachment	0.09	0.00	0.00
TOTALS:	0.09					0.31		0.09	0.00	0.00

Based on the above information, the river biodiversity value is calculated at **0.31** watercourse units, with **0.00** units lost during the development. Therefore, **0.31** watercourse units will remain.

Off-site Area Habitats

Habitat Description	Habitat Area (ha)	Distinctiveness	Score	Condition	Score	Baseline Habitat Units	Habitats Retention (ha)			Habitat Units Lost
							Retained	Enhanced	Lost	
South Blueline Boundary										
Other Neutral Grassland	1.12	Medium	4	Good	3	13.44	0.00	0.00	1.12	13.44
Mixed Scrub	0.39	Medium	4	Good	3	4.68	0.00	0.00	0.39	4.68
Tall Forbs	0.06	Low	2	Good	3	0.36	0.00	0.00	0.06	0.36
Rural Tree	0.02	Medium	4	Good	3	0.24	0.00	0.00	0.02	0.24
Artificial Unvegetated, Unsealed Surface	0.11	V.Low	0	N/A - Other	0	0.00	0.00	0.00	0.11	0.00
North Blueline Boundary										
Developed Land; Sealed Surface	1.16	V.Low	0	N/A - Other	0	0.00	1.15	0.00	0.01	0.00
Ponds (non-priority habitat)	0.49	Medium	4	Poor	1	1.96	0.49	0.00	0.00	0.00
Ponds (non-priority habitat)	0.03	Medium	4	Moderate	2	0.24	0.03	0.00	0.00	0.00
Ponds (non-priority habitat)	0.01	Medium	4	Good	3	0.12	0.01	0.00	0.00	0.00
Modified Grassland	25.19	Low	2	Poor	1	50.38	25.19	0.00	0.00	0.00
Rural Tree	0.38	Medium	4	Moderate	2	3.04	0.38	0.00	0.00	0.00
Other Woodland; Broadleaved	14.84	Medium	4	Moderate	2	118.72	14.84	0.00	0.00	0.00
Other Woodland; Broadleaved	2.71	Medium	4	Good	3	32.52	2.71	0.00	0.00	0.00
Artificial Unvegetated, Unsealed Surface	0.24	V.Low	0	N/A - Other	0	0.00	0.00	0.00	0.00	0.00
TOTALS*	46.35*					225.70	44.66*	0.00	1.71	18.72
*Areas excluding individual trees.										

Based on the above information, the off-site habitat biodiversity value is calculated at **225.70** habitat units, with **18.72** units lost during the development. Therefore, **206.98** habitat units will remain off-site.

Off-site Linear Habitats

Habitat Description	Habitat Area (ha)	Distinctiveness	Score	Condition	Score	Baseline Habitat Units	Habitats Retention (ha)			Habitat Units Lost
							Retained	Enhanced	Lost	
South Blueline Boundary										
Native Hedgerow with Trees	0.24	Medium	4	Good	3	2.88	0.00	0.00	0.24	2.88
Line of Trees	0.16	Low	2	Good	3	0.96	0.00	0.00	0.16	0.96
North Blueline Boundary										
Native Hedgerow - Associated with Bank or Ditch	0.1	Medium	4	Moderate	2	0.80	0.10	0.00	0.00	0.00
Native Hedgerow	0.07	Low	2	Moderate	2	0.28	0.07	0.00	0.00	0.00
Native Hedgerow with Trees	1.29	Medium	4	Moderate	2	10.32	1.29	0.00	0.00	0.00
TOTALS*	2.51					15.24	1.46	0.00	0.40	3.84

To show degradation the linear habitats are shown as lost and will be recorded in their new condition within the proposed habitat section. Based on the above information, the on-site habitat biodiversity value is calculated at **15.24** linear habitat units, with **3.84** units lost during the development. Therefore, **11.40** linear habitat units will remain.

Off-site Watercourse Habitats

River Type	River Length (km)	Distinctiveness	Score	Condition	Score	Baseline River Units	Encroachment (Watercourse & riparian)	River Retention (Km)		River Units Lost
								Retained	Lost	
South Blueline Boundary										
Ditch	0.16	Medium	4	Moderate	2	0.56	No Encroachment Major/No Encroachment	0.16	0	0.00
North Blueline Boundary										
Ditch	0.73	Medium	4	Moderate	2	2.92	No Encroachment Major/No Encroachment	0.73	0	0.00
TOTALS:	0.89					3.48		0.89	0	0.00

Based on the above information, the river biodiversity value is calculated at **3.48** watercourse units, with **0.00** units lost during the development. Therefore, **3.48** watercourse units will remain.

4.2 Proposed Habitats

On-site Area Habitats

Habitat Description	Habitat Area (ha)	Target Distinctiveness	Score	Target Condition	Score	Time To Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
Developed Land; Sealed Surface	0.39	V.Low	0	N/A - Other	0	0	1.000	Low	1	0.00
Modified Grassland	0.83	Low	2	Poor	1	1	0.965	Low	1	1.60
TOTALS	1.22*									1.60
*Areas excluding individual trees.										

The above habitats, valued at **1.60** habitat units, combined with the remaining valued at **0.00** units, a habitat biodiversity value score of **1.60** habitat units is given by the metric calculation.

On-site Linear Habitats

Linear Habitat Description	Habitat Length (Km)	Target Distinctiveness	Score	Target Condition	Score	Time To Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
Line of Trees	0.08	Low	2	Poor	1	5	0.837	Low	1	0.13
Native Hedgerow with Trees	0.04	Medium	4	Poor	1	1	0.965	Low	1	0.15
TOTALS	0.07									0.29

The above habitats, valued at **0.29** habitat units. combined with the remaining valued at **0.00** units. A habitat biodiversity value score of **0.29** habitat units is given by the metric calculation.

On-site Watercourse Habitats

No new watercourses have been proposed.

Off-site Area Habitats

Habitat Description	Habitat Area (ha)	Target Distinctiveness	Score	Target Condition	Score	Time To Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
South Blueline Boundary										
Developed Land; Sealed Surface	0.18	V.Low	0	N/A - Other	0	0	1.000	Low	1	0.00
Artificial Unvegetated, Unsealed Surface	1.50	V.Low	0	N/A - Other	0	0	1.000	Low	1	0.00
TOTALS	1.68									0.00

The above habitats, valued at **0.00** habitat units, combined with the remaining valued at **206.98** units, a habitat biodiversity value score of **206.98** habitat units is given by the metric calculation.

Off-site Linear Habitats

Linear Habitat Description	Habitat Length (Km)	Target Distinctiveness	Score	Target Condition	Score	Time To Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
South Blueline Boundary										
Native Hedgerow with Trees	0.24	Medium	4	Poor	1	1	0.965	Low	1	0.93
Line of Trees	0.16	Low	2	Poor	1	5	0.837	Low	1	0.27
TOTALS	0.40									1.19

The above habitats, valued at **1.19** linear habitat units. combined with the remaining valued at **14.00** units. A linear habitat biodiversity value score of **15.19** linear habitat units is given by the metric calculation.

Off-site Watercourse Habitats

No new watercourses have been proposed.

4.3 Total Net Unit Change

On-site:

The net unit change for the area habitats on site is calculated at **-7.28** units, which correlates to a loss of **81.96%** in biodiversity units.

The net unit change for the linear habitats on site is calculated at **-1.35** units, which correlates to a loss of **82.42%** in biodiversity units.

The net unit change for the watercourse habitats on site is calculated at **-0.00** units, which correlates to a loss of **0.00%** in biodiversity units.

Off-site:

The net unit change for the area habitats off site is calculated at **-18.72** units, which correlates to a loss of **8.29%** in biodiversity units.

The net unit change for the linear habitats off site is calculated at **-2.65** units, which correlates to a loss of **17.36%** in biodiversity units.

The net unit change for the watercourse habitats off site is calculated at **-0.00** units, which correlates to a loss of **0.00%** in biodiversity units.

Total:

The total net unit change for the area habitats is calculated at **-26.00**, which correlates to a loss of **-292.77%** in biodiversity units.

The total net unit change for the linear habitats is calculated at **-4.00** units, which correlates to a loss of **243.75%** in biodiversity units.

The total net unit change for the watercourse habitats is calculated at **-0.00** units, which correlates to a loss of **0.00%** in biodiversity units.

4.4 Trading Rules

With the above proposed habitats, the trading rules are **not** satisfied. The table below breaks down the factors for passing or failing the trading rules:

Area Trading Summary			
Distinctiveness Group	Trading Rule	Trading Satisfied	Reason
Very High	Same habitat required – bespoke compensation option	Yes	No habitats of this distinctiveness were identified on site.
High	Same habitat required	Yes	No habitats of this distinctiveness were identified on site.
Medium	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	No	25.80 units are required form Medium Distinctiveness habitats or better.
Low	Same distinctiveness or better habitat required ($\geq$)	No	0.20 units of low distinctiveness habitats or better are required.
Linear Trading Summary			
Distinctiveness Group	Trading Rule	Trading Satisfied	Reason
Very High	Same habitat required – bespoke compensation option	Yes	No habitats of this distinctiveness were identified on site.
High	Same habitat required	Yes	No habitats of this distinctiveness were identified on site.
Medium	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	No	2.76 units are required form Medium Distinctiveness habitats or better.
Low	Same distinctiveness or better habitat required ($\geq$)	No	1.24 units of low distinctiveness habitats or better are required.
Very Low	Same distinctiveness or better habitat required ($\geq$)	Yes	No habitats of this distinctiveness were identified on site.

5. Recommendations

5.1 Habitats

The total net unit change for the area habitats is calculated at **-26.00**, which correlates to a loss of **-292.77%** in biodiversity units. The total net unit change for the linear habitats is calculated at **4.00** units, which correlates to a loss of **243.75%** in biodiversity units. The total net unit change for the water course habitats is calculated at **-0.00** units, which correlates to a loss of **0.00%** in biodiversity units.

The development therefore does not meet the DEFRA 10% minimum net gain in biodiversity units. Additional habitats are required to offset losses where possible. The following recommendations are to be implemented to ensure that the proposals meet 10% minimum net gain in biodiversity units through the use of on-site habitat creation and enhancements to the wider golf course.

Recommended On-site Area Habitats

Habitat Description	Habitat Area (ha)	Target Distinctiveness	Score	Target Condition	Score	Time To Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
Developed Land; Sealed Surface	0.39	V.Low	0	N/A - Other	0	0	1.000	Low	1	0.00
Modified Grassland	0.83	Low	2	Poor	1	1	0.965	Low	1	1.60
Urban Tree	0.09	Medium	4	Moderate	2	27	0.382	Low	1	0.28
TOTALS	1.22*									1.88
*Areas excluding individual trees.										

The above habitats, valued at **1.88** habitat units, combined with the remaining valued at **0.00** units, a habitat biodiversity value score of **1.88** habitat units is given by the metric calculation.

Recommended On-site Linear Habitats

Linear Habitat Description	Habitat Length (Km)	Target Distinctiveness	Score	Target Condition	Score	Time To Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
Line of Trees	0.08	Low	2	Poor	1	5	0.837	Low	1	0.13
Native Hedgerow with Trees	0.04	Medium	4	Poor	1	1	0.965	Low	1	0.15
Species-rich Native Hedgerow with Trees – Associated with Bank or Ditch	0.15	V.High	8	Moderate	2	10	0.700	Low	1	1.68
Species-rich native hedgerow with trees	0.19	High	6	Moderate	2	10	0.700	Low	1	1.60
TOTALS	0.63									3.57

The above habitats, valued at **3.57** habitat units. combined with the remaining valued at **0.00** units. A habitat biodiversity value score of **3.57** habitat units is given by the metric calculation.

Recommended On-site Watercourse Habitats

No new watercourses have been recommended.

Changes to the Off-Site Area Habitat Retention

Habitat Description	Habitat Area (ha)	Distinctiveness	Score	Condition	Score	Baseline Habitat Units	Habitats Retention (ha)			Habitat Units Lost
							Retained	Enhanced	Lost	
South Blueline Boundary										
Other Neutral Grassland	1.12	Medium	4	Good	3	13.44	0.00	0.00	1.12	13.44
Mixed Scrub	0.39	Medium	4	Good	3	4.68	0.00	0.00	0.39	4.68
Tall Forbs	0.06	Low	2	Good	3	0.36	0.00	0.00	0.06	0.36
Rural Tree	0.02	Medium	4	Good	3	0.24	0.00	0.00	0.02	0.24
Artificial Unvegetated, Unsealed Surface	0.11	V.Low	0	N/A - Other	0	0.00	0.00	0.00	0.11	0.00
North Blueline Boundary										
Developed Land; Sealed Surface	1.16	V.Low	0	N/A - Other	0	0.00	1.15	0.00	0.01	0.00
Ponds (non-priority habitat)	0.49	Medium	4	Poor	1	1.96	0.09	0.4	0.00	0.00
Ponds (non-priority habitat)	0.03	Medium	4	Moderate	2	0.24	0.03	0.00	0.00	0.00
Ponds (non-priority habitat)	0.01	Medium	4	Good	3	0.12	0.01	0.00	0.00	0.00
Modified Grassland	25.19	Low	2	Poor	1	50.38	21.99	0.00	3.20	6.40
Rural Tree	0.38	Medium	4	Moderate	2	3.04	0.38	0.00	0.00	0.00
Other Woodland; Broadleaved	14.84	Medium	4	Moderate	2	118.72	14.84	0.00	0.00	0.00
Other Woodland; Broadleaved	2.71	Medium	4	Good	3	32.52	2.71	0.00	0.00	0.00
Artificial Unvegetated, Unsealed Surface	0.24	V.Low	0	N/A - Other	0	0.00	0.24	0.00	0.00	0.00
TOTALS*	46.35*					225.70	41.44*	0.00	4.81	25.12
*Areas excluding individual trees.										

Based on the above information, the off-site habitat biodiversity value is calculated at **225.70** habitat units, with **25.12** units lost during the development. The changes to the existing baseline habitat retention for the off-site area are the loss of 3.20 ha (6.40 units) of modified grassland, as opposed to the 0.00 ha (0.00 unit) loss in the baseline. Therefore, **198.98** habitat units will remain off-site.

Off-site Habitat Enhancement

Habitat Description	Habitat Area (ha) enhanced	Proposed habitat Enhancement	Distinctiveness movement	Condition Change	Baseline habitat Units	habitat Units Post enhancement	habitat Unit increase
North Blueline Boundary							
Ponds (non-priority habitat)	0.40	Ponds (non-priority habitat)	Medium-Medium	Poor - Moderate	1.96	2.53	+0.57
Total					1.96	2.53	+0.57

The 0.40ha of ponds are to be enhanced from poor condition to moderate. These enhancements made to the ponds off site will increase the total value of from **1.96** habitat units to **2.56** habitat units, providing an additional **0.57** habitat units.

Recommended Off-site Area Habitats

Habitat Description	Habitat Area (ha)	Target Distinctiveness	Score	Target Condition	Score	Time To Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
South Blueline Boundary										
Developed land; sealed surface	0.18	V.Low	0	N/A - Other	0	0	1.000	Low	1	0.00
Artificial unvegetated, unsealed surface	0.94	V.Low	0	N/A - Other	0	0	1.000	Low	1	0.00
Other neutral grassland	0.24	Medium	4	Good	3	10	0.700	Low	1	2.02
Rural tree	0.03	Medium	4	Moderate	2	27	0.382	Low	1	0.09
North Blueline Boundary										
Mixed scrub	1.44	Medium	4	Good	3	10	0.700	Low	1	12.10
Ponds (non-priority habitat)	0.09	Medium	4	Good	3	5	0.837	Low	1	0.90
Other neutral grassland	2.00	Medium	4	Good	3	10	0.700	Low	1	16.81
Rural tree	0.07	Medium	4	Moderate	2	27	0.382	Low	1	0.21
TOTALS	4.89									32.13

The above habitats, valued at **32.13** habitat units, combined with the addition **0.57** units from enhancements and remaining habitats valued at **198.98** units, a habitat biodiversity value score of **233.64** habitat units is given by the metric calculation.

Recommended Off-site Linear Habitats

Linear Habitat Description	Habitat Length (Km)	Target Distinctiveness	Score	Target Condition	Score	Time To Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
South Blueline Boundary										
Native Hedgerow with Trees	0.24	Medium	4	Poor	1	1	0.965	Low	1	0.93
Line of Trees	0.16	Low	2	Poor	1	5	0.837	Low	1	0.27
Species-rich Native Hedgerow with Trees	0.17	High	6	Moderate	2	10	0.700	Low	1	1.43
TOTALS	0.40									2.62

The above habitats, valued at **2.62** habitat units. combined with the remaining valued at **14.00** units. A habitat biodiversity value score of **16.62** habitat units is given by the metric calculation.

Recommended Off-site Watercourse Habitats

No new watercourses have been recommended.

5.2 Habitat Mitigation Score

On-site:

The net unit change for the area habitats on site is calculated at **-7.00** units, which correlates to a loss of **78.86%** in biodiversity units.

The net unit change for the linear habitats on site is calculated at **+1.93** units, which correlates to a gain of **117.42%** in biodiversity units.

The net unit change for the watercourse habitats on site is calculated at **-0.00** units, which correlates to a loss of **0.00%** in biodiversity units.

Off-site:

The net unit change for the area habitats off site is calculated at **+7.94** units, which correlates to a gain of **3.52%** in biodiversity units.

The net unit change for the linear habitats off site is calculated at **-1.22** units, which correlates to a loss of **7.99%** in biodiversity units.

The net unit change for the watercourse habitats off site is calculated at **-0.00** units, which correlates to a loss of **0.00%** in biodiversity units.

Total:

The total net unit change for the area habitats is calculated at **+0.94**, which correlates to a gain of **10.59%** in biodiversity units.

The total net unit change for the linear habitats is calculated at **+0.71** units, which correlates to a gain of **43.19%** in biodiversity units.

The total net unit change for the watercourse habitats is calculated at **-0.00** units, which correlates to a loss of **0.00%** in biodiversity units.

5.3 Trading Rules

With the above proposed habitats, the trading rules are satisfied. The table below breaks down the factors for passing or failing the trading rules:

Area Trading Summary			
Distinctiveness Group	Trading Rule	Trading Satisfied	Reason
Very High	Same habitat required – bespoke compensation option	Yes	No habitats of this distinctiveness were identified on site.
High	Same habitat required	Yes	No habitats of this distinctiveness were identified on site.
Medium	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	Yes	A total of 7.54 units from Medium Distinctiveness habitats will be generated by the recommendations.
Low	Same distinctiveness or better habitat required ($\geq$)	Yes	6.60 units of low distinctiveness habitats are to be lost under the recommendations. These will be off set with units of higher distinctiveness leaving a surplus of 0.94 units.
Linear Trading Summary			
Distinctiveness Group	Trading Rule	Trading Satisfied	Reason
Very High	Same habitat required – bespoke compensation option	Yes	1.68 units provided in surplus to offset lower distinctiveness habitats.
High	Same habitat required	Yes	3.03 units provided in surplus to offset lower distinctiveness habitats. 4.71 units remain as surplus.
Medium	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	Yes	2.76 units of medium distinctiveness have been lost under the current proposals. After offsetting, a surplus of 1.95 units remains.
Low	Same distinctiveness or better habitat required ($\geq$)	Yes	1.24 units of low distinctiveness habitats have been lost under the current proposals. After offsetting, a surplus of 0.71 units remains.
Very Low	Same distinctiveness or better habitat required ($\geq$)	Yes	No habitats of this distinctiveness were identified on site.

6. Habitat Creation and Management

6.1 Soil Preparation

SOILS: Subgrade/subsoil to be prepared in accordance with BS 8601:2013 and BS 4428:1989 and scarified or ripped to 300mm depth (excluding root protection areas of retained trees refer to Tree Protection Plan) prior to spreading topsoil to alleviate compaction and promote drainage. Imported and as saved topsoil to be in accordance with BS 3882: 2015 'Multipurpose Grade' with minimum soil organic matter contents 1% greater than the minimal value (or as approved). Imported topsoil (and 'as saved' if requested) is to be laboratory tested to BS 3882:2015 and ameliorated as required to meet the required characteristics as detailed within Table 1 of BS 3882:2015 specification.

Wildflower areas to be unimproved topsoil or low fertility topsoil to BS 3882:2015. Grass areas to be a minimum depth of 150mm, shrub beds 450mm depth, and forestry/transplants 300mm depth. Any weed/grass growth is to be sprayed out with appropriate herbicide at least ten days prior to cultivation. All areas are to be cultivated to a minimum depth of 150mm removing weeds and rubbish/stones greater than 20mm in size. Incorporate proprietary non peat compost to BSI PAS 100 to 50mm depth evenly worked into soil during cultivation.

6.2 Habitats Creation

6.2.1 Wildflower Planting

Wildflower meadow areas should form part of the site to maximise biodiversity where possible. This habitat is to be incorporated into the current modified grassland area at the north of the site. A variety of wildflower mixes can be found on the [Meadowmania](#) or [Wildflower Turf](#) webpages. It is recommended that [EM34 diverse meadow mixture](#) or similar is used. A list of recommended species will be provided in **Section 7**.

This must be connected to other habitat features to ensure beneficial invertebrates, such as bees and butterflies, can find and utilise this habitat. This is due to some species not crossing open areas, so connectivity with linear habitat features is critical. Further information on creating wildflower meadows can be found [here](#).

These areas should be mown once a year:

- **Autumn cut** - cut between the end of August and late November.

Management of the grassland should avoid mowing of the entire space, to allow patches of taller or rough grassland patches and flowering to take place.

6.2.2 Mixed Scrub Creation

To improve floral diversity on site, mixed scrub is to be incorporated within the designated offsetting area around woodland edges. This scrub will provide nesting areas for birds, more foraging for bats and birds, and shelter for small mammals that are located on site. Mixed scrub is to include a mix of the following:

Scientific Name	Common name	Native to the UK	Number to be planted	Density per m ²	Height with management*
<i>Frangula alnus</i>	Alder buckthorn	Yes	1,228	1	1.8 - 3.6m
<i>Fagus sylvatica</i>	Beech	Yes	1,228	1	2.7 - 5.4m
<i>Prunus spinosa</i>	Blackthorn	Yes	1,229	1	2.7 - 5.4m
<i>Buxus sempervirens</i>	Box	Yes	1,228	1	0.7 - 1.4m
<i>Cornus sanguinea</i>	Dogwood	Yes	1,228	1	2.7 - 5.4m
<i>Prunus avium</i>	Wild cherry	Yes	1,229	1	5.4 - 8.1m
*Height based on minimum and maximum annual growth rates over a 9 year period between coppice					

Mixed scrub is to be planted in accordance with BS 3936 and handled in accordance with NPS 'Handling & Establishment' guidelines and planted in accordance with BS 4428:1989.

Specimens are to be planted at two plants per m². Scrub is to be planted at random to avoid the creation of wind tunnels. Gaps within the scrub will be colonised as the scrub matures. Mixed scrub is to be under-seeded with [Woodland Mixture EW1](#), or similar, sown at a rate of 4g/m². New scrub should be left for a fifteen-year period to allow the habitat to reach maturity. Once this fifteen-year period has passed management is to be implemented.

Management for scrub is to be rotational, with one third (1/3) of the scrub coppiced every three years. For example, coppice 1/3, then three years hence coppice another 1/3, and finally coppice the remaining 1/3 after another three years. This process should then be repeated. This low-level management will allow for variation in the structure and maturity of the scrub whilst ensuring the habitat is still available for use by wildlife. Removal of scrub should be undertaken between November and January.

6.2.3 Scattered Trees

A total of forty trees (15 on site and 25 off site) are to be incorporated on site within the open spaces. These are to consist of: Downy birch (*Betula pubescens*), holly (*Ilex aquifolium*), hornbeam (*Carpinus betulus*), rowan (*Sorbus aucuparia*), silver birch (*Betula pendula*), wild cherry (*Prunus avium*), and wild service tree (*Sorbus torminalis*).

These trees are to be planted in accordance with BS 3936, BS8545 and The National Plant Specification – 'Rootballed Trees'.

6.2.4 Species-rich Hedgerow with Trees/Associated Ditch

A new species-rich hedgerow with trees is to be incorporated along the south of boundary of the development site. This will also run parallel to the ditch at the southern boundary of the site.

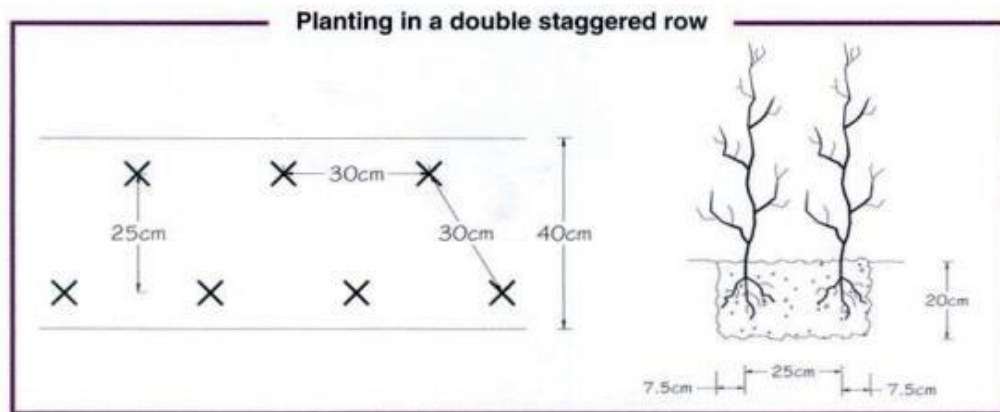
A typical mix of shrubs to create a traditional hedgerow is: 50% hawthorn (*Crataegus monogyna*), 25% hazel (*Corylus avellana*), 15% field maple (*Acer campestre*), 2% holly (*Ilex aquifolium*), 2% wild privet (*Ligustrum vulgare*), 2% guelder rose (*Viburnum opulus*), 2% dog rose (*Rosa canina*), and 2% buckthorn (*Rhamnus catharticus*) for every 30m of the hedge. One tree is to be incorporated into the hedge every 20m. It

is recommended that field maple (*Acer campestre*) and oak (*Quercus robur*) are used.

This hedgerow is to be at five plants per metre in a staggered double row, with 33cm between each plant along the row and 40cm between the rows.

A ditch is to be incorporated alongside this hedgerow on the development side that drains into the existing ditch on the east boundary

Figure 4: Planting a double Staggered hedge, taken from Planting a Native Hedgerow, by Wycombe District Council 2008.



Further recommendations on the hedge include the way it should be managed:

1st year

- Weed around the base of the shrub to prevent competition.
- In late summer, any shrubs that have died should be replaced in the autumn.
- In the shrub's first spring cut the hedge down to 45-60cm off the ground to promote a thicker hedge.

Long-term

Leaving a wild, undisturbed margin adjacent to the hedgerow, ideally 2m, will encourage growth around the base of the hedge, providing cover for small mammals and nesting sites for birds.

Hedgerow tops should be cut by chainsaw and **never** flailed as this can severely damage and impede the growth of a hedge after repeated cuts. The hedge must not be cut under 2m in height.

Hedgerows should be cut in 1/3 sections offset by a year and then re-cut every five years. This will ensure that the health of the hedgerow is maintained.

6.2.5 Ponds

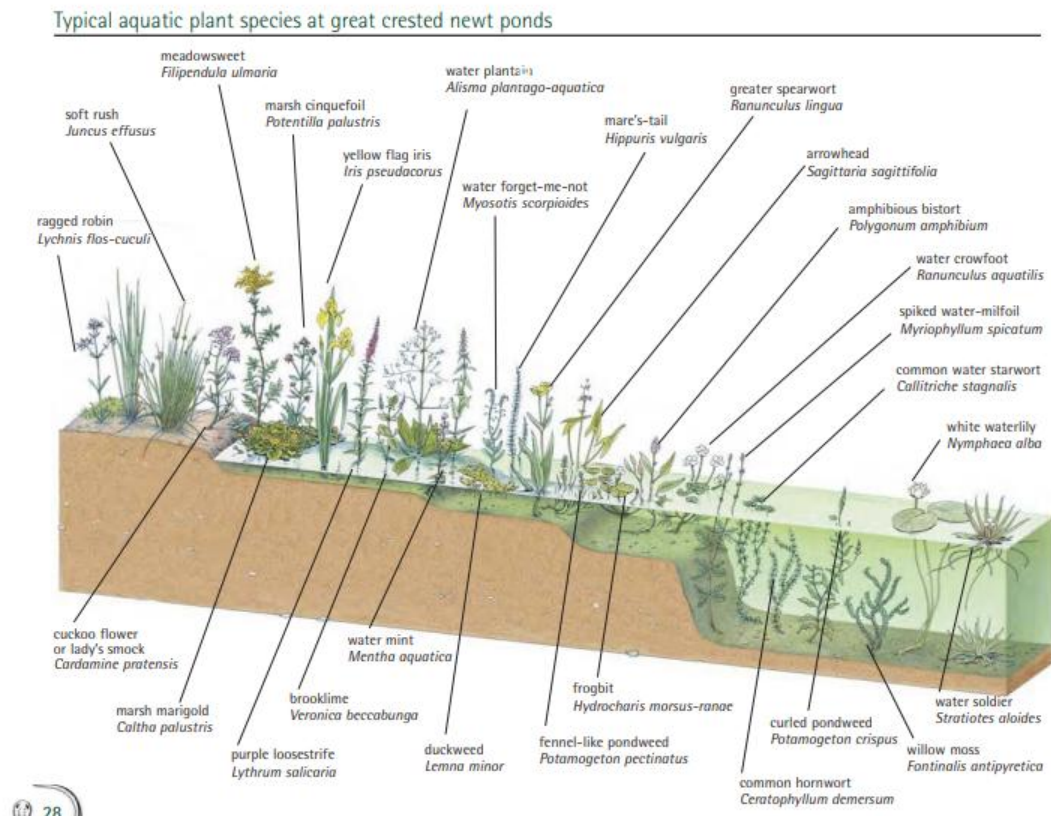
New ponds and 0.4ha of existing ponds will be enhanced for wildlife. These ponds will not be circular and will have the following features:

- Varying depths (deep ponds will be a maximum of 4m).
- The ponds will have the capacity to contain water for a minimum of one summer in every three years.
- Substantial cover of submerged and marginal vegetation (**Figure 3**).
- Good populations of aquatic invertebrates and amphibians.
- Cluster ponds together rather than have them as isolated features within the landscape.
- Ensure the southern shore of the ponds remains vegetation free.
- The ponds will not be stocked with any fish species.
- A low density or absence of waterfowl.
- Open areas.

A sloping profile is recommended for any ponds produced on the site due to the potential presence of children. It is recommended that scrubland, hedgerows, woodland and/or rough grassland is included around near the ponds to encourage use by a number of species.

Marginal	Emergent
Brooklime – (<i>Veronica beccabunga</i>)	Amphibious Bistort – (<i>Persicaria amphibium</i>)
Bugle – (<i>Ajuga reptans</i>)	Arrowhead – (<i>Sagittaria aquatilis</i>)
Common Spike-rush- (<i>Eleocharis palustris</i>)	Branched Bur-reed – (<i>Sparganium erectum</i>)
Creeping Bent – (<i>Agrostis stolonifera</i>)	Flowering Rush – (<i>Butomus umbellatus</i>)
Creeping Jenny – (<i>Lysimachia nummularia</i>)	Greater Pond-sedge – (<i>Carex Riparia</i>)
Fleabane – (<i>Pulicaria dysenterica</i>)	Marsh Cinquefoil – (<i>Potentilla palustris</i>)
Flowering Rush – (<i>Butomus umbellatus</i>)	Stinking Iris – (<i>Iris foetidissima</i>)
Fool's Watercress – (<i>Apium nodiflorum</i>)	Water Crowfoot – (<i>Ranunculus aquatilis</i>)
Gipsywort – (<i>Lycopus europaeus</i>)	Water Forget-me-not – (<i>Myosotis Scorpiodes</i>)
Great Willowherb – (<i>Epilobium hirsutum</i>)	Water Mint – (<i>Mentha aquatica</i>)
Hemp Agrimony – (<i>Eupatorium cannabinum</i>)	Water Plantain – (<i>Alisma plantago-quuatica</i>)
Lady's Smock – (<i>Cardamine pratensis</i>)	Submerged but with floating leaves
Marsh Foxtail – (<i>Alopecurus geniculatus</i>)	Bladderwort – (<i>Urticularia spp</i>)
Marsh Marigold – (<i>Caltha palustris</i>)	Broad-leaved Pondweed – (<i>Potamogeton natans</i>)
Marsh Woundwort – (<i>Stachys palustris</i>)	Curled Pondweed – (<i>Potamogeton crispus</i>)
Meadowsweet – (<i>Filipendula ulmaria</i>)	Frogbit – (<i>Hydrocharis morsus-ranae</i>)
Purple Loosestrife – (<i>Lythrum salicaria</i>)	Water Crowfoot/Buttercup – (<i>Ranunculus aquatilis</i>)
Ragged-Robin – (<i>Lychnis flos-cuculi</i>)	Totally submerged
Silverweed – (<i>Potentilla anserina</i>)	Fennel Pondweed – (<i>Potamogeton pectinatus</i>)
Soft Rush – (<i>Juncus effusus</i>)	Horned Pondweed – (<i>Zannichellia palustris</i>)
Water Avens – (<i>Geum rivale</i>)	Hornwort – (<i>Ceratophyllum demersum</i>)
Water Dock – (<i>Rumex hydrolapathum</i>)	Shining Pondweed – (<i>Potamogeton lucens</i>)
Water Forget-me-not – (<i>Myosotis scorpioides</i>)	Spiked Water-milfoil – (<i>Myriophyllum spicatum</i>)
Water Pepper – (<i>Persicaria hydropiper</i>)	Water Starwort – (<i>Callitriche stagnalis</i>)

Figure 5: A diagram illustrating the recommended submerged and marginal vegetation for the ponds (GCN Conservation Handbook).



6.2.6 Control of Aggressive Weeds

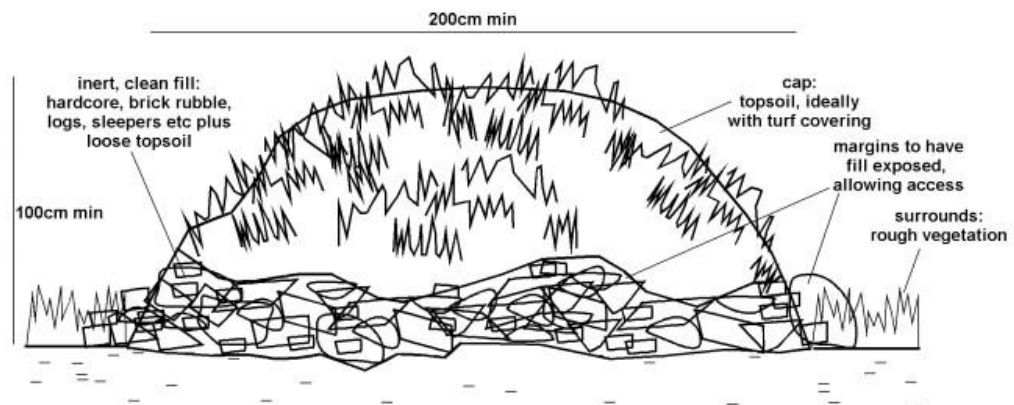
Any weeds which grow on site and are thought to be aggressive and pose a threat to the success of the planted trees should be eradicated as soon as possible. These will be identified within a plant identification survey undertaken twice yearly; one in March and one in July. It will be necessary to remove all weeds found on site by hand during the first three years of the project, until the new trees are mature enough to survive. Any invasive species that appear on site will require eradication as soon as possible. The identification of any invasive species will take place within a plant identification survey undertaken twice yearly; one in March and one in July.

6.3 Species Specific Enhancements

6.3.1 **Amphibians**

Two amphibian hibernacula are to be included into the design scheme around the ponds within the off-site golf course area. These are usually comprised of rubble, rock, log piles and earth banks. An example design for the hibernacula can be seen within **Figure 6**.

Figure 6: A diagram illustrating the recommended hibernacula (GCN Mitigation Guidelines).



6.3.2 **Bats**

It is recommended that the development site should incorporate a minimum of the following:

- Four Integrated Eco Bat Boxes.

These should be placed on poles within the off-site area to the south of the site. Including these boxes will providing further roosting opportunities. These should avoid any artificial lighting, whilst being sighted facing east, south-east, south, south-west, and/or west. The wooden poles are recommended to be at least partially shaded by some of the new trees. Boxes can be purchased by emailing admin@eliteecology.co.uk.

Artificial lighting **must avoid** linear features. If it is necessary to include artificial lighting in areas overlooking both hedgerows and trees, then this must include sensors to be triggered by larger bodies only. An artificial lighting plan should be drawn up to illustrate the spill of light. This is to include the proposed security lighting on the residential dwellings as well as all street lighting. This document should then be approved by a licenced bat ecologist. More information on bats and artificial lighting can be found within **Appendix G**.

6.3.3 Birds

The development site should be enhanced for birds by installing a variety of bird boxes on site. The development should incorporate a minimum of the following:

- Two Apex Bird Boxes.
- Two Apex Robin Boxes.

Boxes can be purchased by emailing admin@eliteecology.co.uk.

The boxes should be positioned two to four metres high on a wall. They must be placed between northern and eastern elevations, thus avoiding strong sunlight and the wettest winds.

The entrance of the box must be kept clear of obstructions, such as branches and vegetation. All bird enhancements must be situated in a way that prevents access to predators, such as cats.

6.3.4 Hedgehogs (*Erinaceus europaeus*)

The site is to be enhanced for the local hedgehog population by four Eco Hedgehog Nest Boxes being installed at the site. This will create more opportunities for hedgehogs within the local landscape. This can be purchased by emailing admin@eliteecology.co.uk.

It is also recommended that small gaps are left within any boundary fencing (if used) to enable the specimens to continue to commute through the area (an example can be found within **Figure 7**). This will ensure that the local hedgehog populations do not become fragmented within the local landscape.

Figure 7: An image of an example hedgehog tunnel (obtained from RSPB).



6.3.5 Invertebrates

At present, the site is not considered to be of any importance to local invertebrate populations. In conjunction with the wildflower planting in the golf course area, the site is to incorporate least two Bumblebee Boxes into the scheme, along with two Bug Hotels. These can be purchased by emailing admin@eliteecology.co.uk. This will enhance the site for the local invertebrate populations, which will thus attract species further up in the trophic level.

Bumblebee boxes should be made from a wooden frame with nesting tubes within. Plastic should not be used. The frame should be at least height 15cm x width 15cm x length 15cm (slight variation on dimensions is allowed) and must have a solid back. The nesting tubes should be a minimum of 15cm long and should have an average diameter of 2-10mm. The bug hotel should follow similar dimensions and materials used; however additional elements can be included such as drilled pieces of timber where the holes are at least 10cm deep. Bug hotels including items such as pinecones, glued snail shells, wood shavings or clear plastic tubes should be strictly avoided (**Figure 8**).

Smaller, more frequent bumblebee boxes/insect hotels are preferred to larger insect boxes as the larger varieties are susceptible to spreading diseases and parasites and can actually cause more harm than good.

When situating the box, it should be fixed securely to a sturdy surface at least 1m off of the ground, ideally on an easter-southern elevation so that the box is in full sunlight. No vegetation should be in front the box as it would obscure the entrances to the tunnels. The box would benefit from being placed close to plants rich in a pollen source throughout the year.

Figure 8: Image showing the difference between a good (right) and a bad (left) insect hotel, taken from the Entomologist Lounge website.



7 Timing, Phasing, and Duration of Conservation Measures

7.1 Construction Phase

Creation	Timing	Species
Tree Planting	Plant between October and April.	Forty small trees: Downy birch (<i>Betula pubescens</i>), holly (<i>Ilex aquifolium</i>), hornbeam (<i>Carpinus betulus</i>), rowan (<i>Sorbus aucuparia</i>), silver birch (<i>Betula pendula</i>), wild cherry (<i>Prunus avium</i>), and wild service tree (<i>Sorbus torminalis</i>).
New Scrub Planting	Plant between October and April.	Alder buckthorn (<i>Frangula alnus</i>), beech (<i>Fagus sylvatica</i>), blackthorn (<i>Prunus spinosa</i>), box (<i>Buxus sempervirens</i>), dogwood (<i>Cornus sanguinea</i>), and wild cherry (<i>Prunus avium</i>).
Wildflower Mix	May to September	General Purpose Mix Wildflowers (Total 44.5%): Birdsfoot trefoil (<i>Lotus corniculatus</i>) 2.0%, black medic (<i>Medicago lupulina</i>) 4.0%, bulbous buttercup (<i>Ranunculus bulbosus</i>) 0.5%, catsear (<i>Hypochaeris radicata</i>) 2.0%, common knapweed (<i>Centaurea nigra</i>) 1.0%, common mouse ear (<i>Cerastium fontanum</i>) 0.5%, cowslip (<i>Primula veris</i>) 0.1%, eyebright (<i>Euphrasia officinalis</i>) 0.3%, fairy flax (<i>Linum catharticum</i>) 2.0%, goat's-beard (<i>Tragopogon pratensis</i>) 0.1%, kidney vetch (<i>Anthyllis vulneraria</i>) 0.5%, lesser trefoil (<i>Trifolium dubium</i>) 0.5%, meadow buttercup (<i>Ranunculus acris</i>) 8.0%, oxeye daisy (<i>Leucanthemum vulgare</i>) 2.0%, pale flax (<i>Linum bienne</i>) 1.0%, ribwort plantain (<i>Plantago lanceolata</i>) 8.0%, rough hawkbit (<i>Leontodon hispidus</i>) 1.5%, selfheal (<i>Prunella vulgaris</i>) 2.0%, smooth hawksbeard (<i>Crepis capillaris</i>) 0.5%, wild red clover (<i>Trifolium pratense</i>) 3.0%, and yellow rattle (<i>Rhinanthus minor</i>) 5.0%. Grasses (Total 55.5%): Cocksfoot (<i>Dactylis glomerata</i>) 3.0%, common bent (<i>Agrostis capillaris</i>) 1.0%, crested dog's-tail (<i>Cynosurus cristatus</i>) 10.0%, glaucous sedge (<i>Carex flacca</i>) 8.0%, perennial ryegrass (<i>Lolium perenne</i>) 2.0%, quaking grass (<i>Briza media</i>) 2.0%, red fescue (<i>Festuca rubra</i>) 8.0%, sweet vernal-grass (<i>Anthoxanthum odoratum</i>) 12.0%, upright brome (<i>Bromopsis erecta</i>) 10.0%, and Yorkshire fog (<i>Holcus lanatus</i>) 0.5%.
Hedgerow	Plant between October and April.	50% hawthorn (<i>Crataegus monogyna</i>), 25% hazel (<i>Corylus avellana</i>), 15% field maple (<i>Acer campestre</i>), 2% holly (<i>Ilex aquifolium</i>), 2% wild privet (<i>Ligustrum vulgare</i>), 2% guelder rose (<i>Viburnum opulus</i>), 2% dog rose (<i>Rosa canina</i>), and 2% buckthorn (<i>Rhamnus catharticus</i>)

7.2 Operational Phase

Management	Reason for and Frequency of schedule	Yearly Management									
Wildflowers	To maximise biodiversity. Beneficial to invertebrates.	Year 1 - Sow May to September.	Year 2 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 3 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 4 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 5 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 6 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 7 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 8 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 9 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 10 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.
		Year 11 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 12 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 13 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 14 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 15 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 16 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 17 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 18 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 19 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 20 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.
		Year 21 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 22 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 23 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 24 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 25 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 26 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 27 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 28 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 29 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.	Year 30 Autumn cut - Cut back to height of 7.5cm only and cut between the end of August and late November.
Mixed Scrub	Allow for variation in the structure and maturity of the scrub whilst ensuring the habitat is still available for use by wildlife.	Year 1 Plant recommended species. Leave to mature.	Year 2 No action.	Year 3 No action.	Year 4 Remove one third of existing scrub. Plant recommended species. Leave to mature.	Year 5 No action.	Year 6 No action.	Year 7 Remove one third of existing scrub. Plant recommended species. Leave to mature.	Year 8 No action.	Year 9 No action.	Year 10 No action.
		Select one third of the new mixed scrub for coppice in Year 11 . Re-coppice section every nine years.	Year 12 No action.	Year 13 No action.	Select Second third of the new mixed scrub for coppice in Year 14 . Re-coppice section every nine years.	Year 15 No action.	Year 17 No action.	Select last third of the new mixed scrub for coppice in Year 17 . Re-coppice section every nine years.	Year 18 No action.	Year 19 No action.	Re-coppice 1 st section in Year 20 . Re-coppice section every nine years.
		Year 21 No action.	Year 22 No action.	Re-coppice 2 nd section in Year 23 . Coppice one third of the new scrub that replaced the existing. Re-coppice section every nine years.	Year 24 No action.	Year 25 No action.	Re-coppice 3 rd section in Year 26 . Coppice 2 nd third of the new scrub that replaced the existing. Re-coppice section every nine years.	Year 27 No action.	Year 28 No action.	Re-coppice 1st section in Year 29 . Coppice Last third of the new scrub that replaced the existing. Re-coppice section every nine years.	Year 30 No action.
Control of Aggressive Weeds	Any weeds which grow on site and are thought to be aggressive and pose a threat to the success of the planted trees should be eradicated. Plant ID survey undertaken twice yearly.	Year 1 plant ID survey: March	Year 2 plant ID survey: March	Year 3 plant ID survey: March	Year 4 plant ID survey: March	Year 5 plant ID survey: March	Year 6 plant ID survey: March	Year 7 plant ID survey: March	Year 8 plant ID survey: March	Year 9 plant ID survey: March	Year 10 plant ID survey: March
		plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July
		Year 11 plant ID survey: March	Year 12 plant ID survey: March	Year 13 plant ID survey: March	Year 14 plant ID survey: March	Year 15 plant ID survey: March	Year 16 plant ID survey: March	Year 17 plant ID survey: March	Year 18 plant ID survey: March	Year 19 plant ID survey: March	Year 20 plant ID survey: March
		plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July	plant ID survey: July

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		Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
		plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July	plant ID survey: March plant ID survey: July
Hedgerows	Allow for structural integrity of the hedge and ensure the hedge is still available for wildlife.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
		Plant hedgerow be made up of at least five different native species. These hedgerows will be planted at 30cm intervals.	Weed around the base of the shrub to prevent competition. In late summer, any shrubs that have died will be replaced in the autumn. In the shrub's first spring cut the hedge down to 45-60cm off the ground to promote a thicker hedge. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. In late summer, any shrubs that have died will be replaced in the autumn. Allow the hedge to reach an average height of 2m with a width of 1.5m. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. In late summer, any shrubs that have died will be replaced in the autumn. Allow the hedge to reach an average height of 2m with a width of 1.5m. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. In late summer, any shrubs that have died will be replaced in the autumn. Allow the hedge to reach an average height of 2m with a width of 1.5m. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 1 st 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 2 nd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 3 rd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.
		Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
		Cut the 1 st 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 2 nd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 3 rd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 1 st 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 2 nd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 3 rd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.
		Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 27	Year 28	Year 29	Year 30
		Cut the 1 st 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 2 nd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 3 rd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 1 st 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 2 nd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Cut the 3 rd 1/3 of the hedge. Leave deadwood where it has been felled or move into a shaded area. Re-cut section every five years. Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.	Weed around the base of the shrub to prevent competition. Leave a wild undisturbed margin adjacent to the hedge.

7.3 Post-works - Habitat Condition Monitoring Timetable

Post-Monitoring Type	Colour
Progression Check	
Assessing if habitat has met target condition	
Monitoring if Target condition is retained	

Habitat	Year														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Hedgerows															
Mixed Scrub															
Wildflowers															
New trees															
Habitat	Year														
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Hedgerows															
Mixed Scrub															
Wildflowers															
New trees															

Species-specific Enhancement	Year				
	1	2	3	4	5
Amphibian Hibernacula	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.	No action.	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.
Bat Boxes	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.	No action.	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.
Bird Boxes	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.	No action.	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.
Bee Bricks	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.	No action.	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.
Hedgehog Boxes	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.	No action.	No action.	Ascertaining whether the enhancement is in use, and whether the condition is still appropriate.

8. Good Practice Principles for Development

The table below outlines the ten principles as outlined by the Chartered Institute of Ecology and Environmental Management (CIEEM) and the Institute of Environmental Management and Assessment (IEMA), whilst outlining whether the project meets each principle, and a justification as to why this has or has not occurred.

Principle	Definition as set out by CIEEMA and IEMAS	Principle met?	Justification
Principle 1: Apply the Mitigation Hierarchy	Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.	No	Species-specific surveys have yet to be undertaken on site. As such, the ecological value of the site has not been fully ascertained. In addition, a measurable net gain has not been achieved.
Principle 2: Avoid Losing Biodiversity that Cannot be Offset by Gains Elsewhere	Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve no net loss or net gain.	Yes	No irreplaceable habitats occur on site. The habitats on site are common and of varying quality. This report has offered recommendations for habitats of a higher standard.
Principle 3: Be Inclusive and Equitable	Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to net gain. Achieve net gain in partnership with stakeholders where possible and share the benefits fairly among stakeholders.	Yes	Feedback from the stakeholders is welcome and this document is to be updated to fit requirements. This Biodiversity Net Gain Report has included recommendations to benefit the site while allowing it to be used for its intended purpose.
Principle 4: Address Risks	Mitigate difficulty, uncertainty and other risks to achieving net gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.	Yes	A measurable net gain has been achieved.
Principle 5: Make a Measurable Net Gain Contribution	Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.	Yes	The total net unit change for the area habitats is calculated at +0.94, which correlates to a gain of 10.59% in biodiversity units. The total net unit change for the linear habitats is calculated at +0.71 units, which correlates to a gain of 43.19% in biodiversity units. The total net unit change for the watercourse habitats is calculated at -0.00 units, which correlates to a loss of 0.00% in biodiversity units
Principle 6: Achieve the Best Outcomes for Biodiversity	Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when: ➤ Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses. ➤ Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation. ➤ Achieving net gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels. ➤ Enhancing existing or creating new habitat. ➤ Enhancing ecological connectivity by creating more bigger, better and joined areas for biodiversity.	Yes	The total net unit change for the area habitats is calculated at +0.94, which correlates to a gain of 10.59% in biodiversity units. The total net unit change for the linear habitats is calculated at +0.71 units, which correlates to a gain of 43.19% in biodiversity units. The total net unit change for the watercourse habitats is calculated at -0.00 units, which correlates to a loss of 0.00% in biodiversity units

Principle 7: Be Additional	Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).	Yes	A measurable net gain has been achieved.
Principle 8: Create a Net Gain Legacy	Ensure net gain generates long-term benefits by: ➤ Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity. ➤ Planning for adaptive management and securing dedicated funding for long-term management. ➤ Designing Net Gain for biodiversity to be resilient to external factors, especially climate change. ➤ Mitigating risks from other land uses. ➤ Avoiding displacing harmful activities from one location to another. ➤ Supporting local-level management of net gain activities.	Yes	A measurable net gain has been achieved.
Principle 9: Optimise Sustainability	Prioritise biodiversity net gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.	No	No wider environmental benefits or sustainability measures.
Principle 10: Be Transparent	Communicate all net gain activities in a transparent and timely manner, sharing the learning with all stakeholders.	Yes	Feedback from the stakeholders is welcome and this document is to be updated to fit requirements. This Biodiversity Net Gain Report has included recommendations to benefit the site while allowing it to be used for its intended purpose.

9. References

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10. Appendices

Appendix A: Site Plans

Appendix B: Habitat Condition Assessment Sheets

Appendix C: Baseline Habitat Map

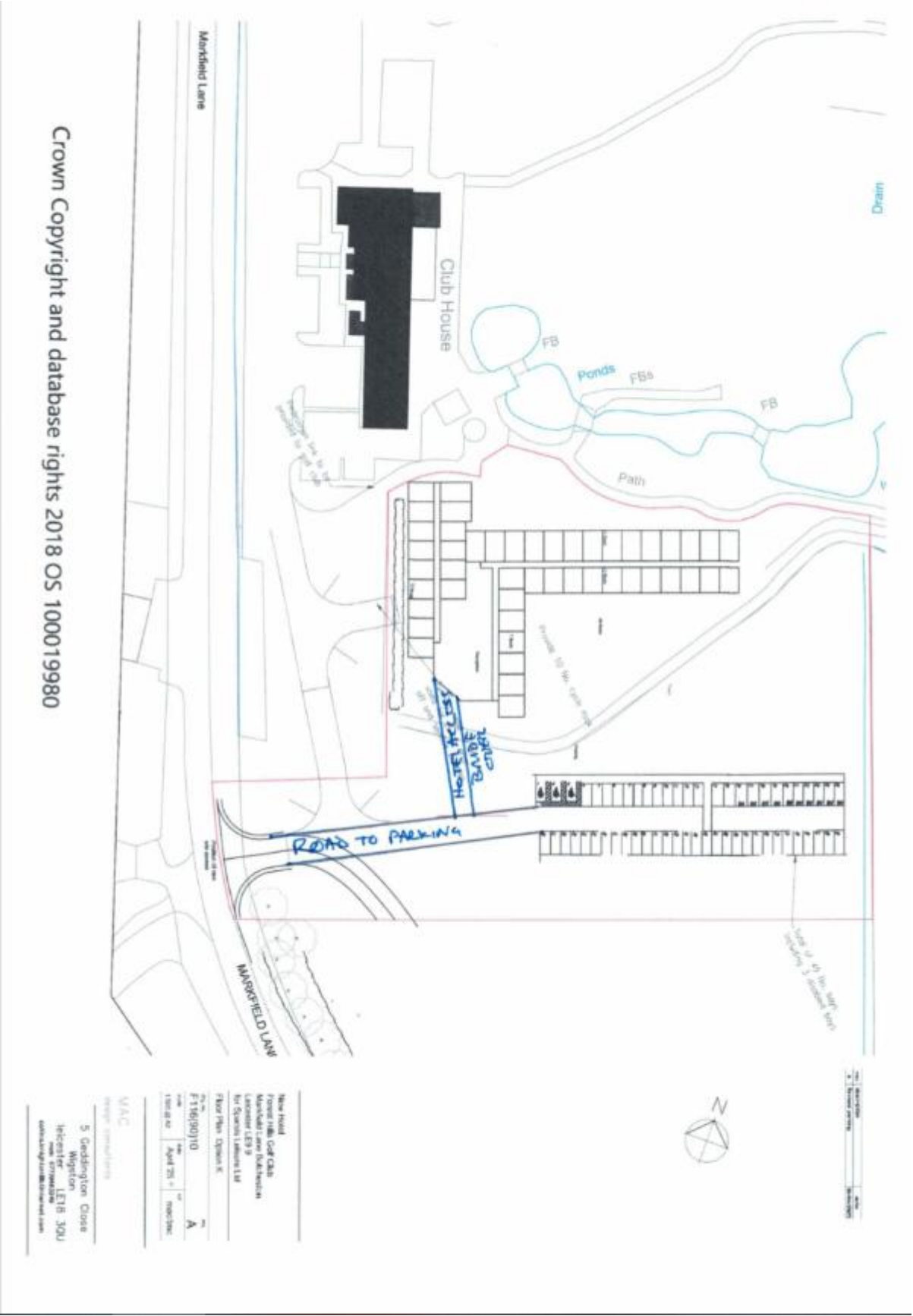
Appendix D: New Habitat Maps

Appendix E: Site Photographs

Appendix F: Biodiversity Net Gain Relevant Policies

Appendix G: Bat and Artificial Light

Appendix A: Site Plans





Appendix B: Habitat Condition Assessment Sheets

Condition Assessment Criteria: Modified Grassland		Criterion Passed
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (these may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	No
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	No
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Yes
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	No
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	No
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Yes
G	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA).	Yes
Score		3/7 (Fails essential criterion A).
Condition		Poor

Note: As the habitat fails Criteria A, it is automatically classed as being in a poor condition.

Footnote 1 – Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris*.

Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Condition Assessment Criteria: Ditch		Criterion Passed
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	No
B	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	No
C	There is less than 10% cover of filamentous algae and or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).	Yes
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	Yes
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Yes
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	No
G	Less than 10% of the ditch is heavily shaded.	Yes
H	There is an absence of non-native plant and animal species.	
Score		4
Condition		Poor

Footnote 1 – This includes any species listed on the Water Framework Directive UKTAG GB High Impact Species List: Water Framework Directive (WFD) UKTAG (2021) *Classification of aquatic alien species according to their level of impact* [online]. Available from:

[UKTAG classification of alien species working paper v8.pdf \(wfd.uk.org.uk\)](https://www.wfd.uk.org.uk/uktag-classification-of-aquatic-alien-species-working-paper-v8.pdf).

• Frequently occurring non-native plant species include water fern *Azolla filiculoides*, Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides*, Japanese knotweed *Reynoutria japonica* and giant hogweed *Heracleum mantegazzianum* (on the bank).

• Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussel *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes*, and carp *Cyprinus carpio*.

Condition Assessment Criteria: Ponds (non-priority habitat).		Criterion Passed
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	No
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	No
C	Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.	Yes
D	The pond is not artificially connected to other waterbodies, e.g. agricultural ditches or artificial pipework.	No
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams ² , pumps or pipework.	Yes
F	There is an absence of listed non-native plant and animal species ³ .	Yes
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	No
Score		3/7
Condition		Poor

Footnote 1 - A woodland pond will be surrounded on all sides by woodland habitat.

Footnote 2 – This excludes natural dams such as those created by Eurasian beaver *Castor fiber*.

Footnote 3 - Any species included on the Water Framework Directive (WFD) UKTAG GB High Impact Species List should be absent: WFD UKTAG (2021) *Classification of aquatic alien species according to their level of impact* [online]. Available from:

[UKTAG classification of alien species working paper v8.pdf \(wfd-uk.org\)](https://www.wfd-uk.org/wp-content/uploads/2021/06/UKTAG_classification_of_aquatic_alien_species_working_paper_v8.pdf)

• Frequently occurring non-native plant species include water fern *Azolla filiculoides*, Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides* and Japanese knotweed *Reynoutria japonica*, giant hogweed *Heracleum mantegazzianum* (on the bank).

• Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes*, carp *Cyprinus carpio*.

Footnote 4 - If the pond is seasonal (as in, it dries out in most summers) then emergent species alone are likely to be found.

Condition Assessment Criteria: Ponds (non-priority habitat).		Criterion Passed
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Yes
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	Yes
C	Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.	Yes
D	The pond is not artificially connected to other waterbodies, e.g. agricultural ditches or artificial pipework.	No
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams ² , pumps or pipework.	Yes
F	There is an absence of listed non-native plant and animal species ³ .	Yes
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Yes
Score		6/7
Condition		Moderate

Footnote 1 - A woodland pond will be surrounded on all sides by woodland habitat.

Footnote 2 – This excludes natural dams such as those created by Eurasian beaver *Castor fiber*.

Footnote 3 - Any species included on the Water Framework Directive (WFD) UKTAG GB High Impact Species List should be absent: WFD UKTAG (2021) *Classification of aquatic alien species according to their level of impact* [online]. Available from:

[UKTAG classification of alien species working paper v8.pdf \(wfd-uk.org\)](https://www.wfd-uk.org/wp-content/uploads/2021/06/UKTAG_classification_of_aquatic_alien_species_working_paper_v8.pdf)

• Frequently occurring non-native plant species include water fern *Azolla filiculoides*, Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides* and

Japanese knotweed *Reynoutria japonica*, giant hogweed *Heracleum mantegazzianum* (on the bank).

• Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes*, carp *Cyprinus carpio*.

Footnote 4 - If the pond is seasonal (as in, it dries out in most summers) then emergent species alone are likely to be found.

Condition Assessment Criteria: Ponds (non-priority habitat).		Criterion Passed
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Yes
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	Yes
C	Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.	Yes
D	The pond is not artificially connected to other waterbodies, e.g. agricultural ditches or artificial pipework.	Yes
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams ² , pumps or pipework.	Yes
F	There is an absence of listed non-native plant and animal species ³ .	Yes
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Yes
Score		7/7
Condition		Good

Footnote 1 - A woodland pond will be surrounded on all sides by woodland habitat.

Footnote 2 – This excludes natural dams such as those created by Eurasian beaver *Castor fiber*.

Footnote 3 - Any species included on the Water Framework Directive (WFD) UKTAG GB High Impact Species List should be absent: WFD UKTAG (2021) *Classification of aquatic alien species according to their level of impact* [online]. Available from:

[UKTAG classification of alien species working paper v8.pdf \(wfd-uk.org\)](https://www.wfd-uk.org/wp-content/uploads/2021/04/UKTAG_classification_of_aquatic_alien_species_working_paper_v8.pdf)

• Frequently occurring non-native plant species include water fern *Azolla filiculoides*, Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides* and Japanese knotweed *Reynoutria japonica*, giant hogweed *Heracleum mantegazzianum* (on the bank).

• Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes*, carp *Cyprinus carpio*.

Habitat: Individual Trees			
Condition Assessment Criteria			Criterion Passed
A	The tree is a native species (or at least 70% within the block are native species).		Yes
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
C	The tree is mature (or more than 50% within the block are mature) ¹ .		No
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
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.		No
F	More than 20% of the tree canopy area is oversailing vegetation beneath.		Yes
Condition	Moderate	Score	4/6

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 \(publishing.service.gov.uk\)](https://www.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england) and [Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions)

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.

Habitat: Other Woodland; Broadleaved				
Condition Assessment Criteria				Score
	Good (3 Points)	Moderate (2 Points)	Poor (1 Point)	
A	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	1
B	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3
C	No invasive species ³ present in woodland.	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	Rhododendron or cherry laurel present, or other invasive species ³ >10% cover.	3
D	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	2
E	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	2
F	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	3
G	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	3
H	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	1
I	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	3
J	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	2
K	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	1

L	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	1
M	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground ¹⁴ .	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground ¹⁴ .	2
Condition	Moderate		Score	27/39

Footnotes below refer to the EWBG woodland condition assessment methodology: EWBG (No date). *Assessing your Woodland's Condition* [online]. Available from: [Woodland Wildlife Toolkit \(sylva.org.uk\)](http://www.woodlandwildlife.org.uk/).

When applying this condition sheet, good practice would be to use the methodology associated with the EWBG toolkit.

Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch *Betula* sp., cherry *Prunus* sp. or *Sorbus* sp.: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). For birch, cherry or *Sorbus* species; 0 - 20 years = Young; 21 - 60 years = Intermediate; >60 years = Old. A recognisable age-class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age-class' of young trees.

Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.

Footnote 3 - See EWBG method INDICATOR 3 for more information. Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly.

Check for the presence of all plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), particularly the following invasive non-native species: American skunk cabbage *Lysichiton americanus*; Himalayan balsam *Impatiens glandulifera*; Japanese knotweed *Reynoutria japonica*; cherry laurel *Prunus laurocerasus*; shallon *Gaultheria shallon*; snowberry *Symphoricarpos albus*; variegated yellow archangel *Lamium galeobdolon* subsp. *argenteum*; rhododendron *Rhododendron ponticum*; and tree-of-heaven *Ailanthus altissima*.

Footnote 4 - See EWBG method INDICATOR 4 and Table 2 for more information. The number of different native tree or shrub species including young trees and shrubs. A list of commonly found native tree and shrub species is provided in Table 2. Not all species listed are native to all parts of the UK. Note a list of commonly found non-native tree species are also included and should be recorded if present.

Footnote 5 - See EWBG method INDICATOR 5 and for more information. The abundance of native tree species in upper (>5 m) and understorey (up to 5 m) layers including young trees and shrubs.

Footnote 6 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (for example, glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (for example, tarmac, buildings, rivers). Area is at least 10 m wide with less than 20% covered by shrubs or trees.

Footnote 7 – Given the increased ratio of edge habitat to woodland where the woodland is <10ha.

Footnote 8 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, but the regeneration indicator gathers additional information by considering regeneration potential - if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 9 - See EWBG method INDICATOR 9 for more information and Table 3 for a list of diseases and pests and their risk level.

Footnote 10 - See EWBG method INDICATOR 10 directing to NVC key for more information. The 'UKHab to NVC translation table' in the UK Habitat Classification resources may also be useful to assess this.

Footnote 11 – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

Footnote 12 - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/672222/Keepers_of_time_-_ancient_and_native_woodland_and_trees_policy_in_England.pdf)

and

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/672222/Ancient_woodland,_ancient_trees_and_veteran_trees_advice_for_making_planning_decisions_-_GOV.UK.pdf)

Footnote 13 – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

Footnote 14 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter.

Habitat: Other Woodland; Broadleaved				
Condition Assessment Criteria				Score
	Good (3 Points)	Moderate (2 Points)	Poor (1 Point)	
A	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	3
B	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3
C	No invasive species ³ present in woodland.	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	Rhododendron or cherry laurel present, or other invasive species ³ >10% cover.	3
D	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	3
E	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	3

F	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	3
G	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	3
H	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	3
I	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	1
J	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	3
K	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	3
L	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	3
M	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground ¹⁴ .	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground ¹⁴ .	2
Condition	Poor	Score		36/39

Footnotes below refer to the EWBG woodland condition assessment methodology: EWBG (No date). *Assessing your Woodland's Condition* [online]. Available from: [Woodland Wildlife Toolkit \(sylva.org.uk\)](http://sylva.org.uk/Woodland-Wildlife-Toolkit).

When applying this condition sheet, good practice would be to use the methodology associated with the EWBG toolkit.

Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch *Betula* sp., cherry *Prunus* sp. or *Sorbus* sp.: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). For birch, cherry or *Sorbus* species; 0 - 20 years = Young; 21 - 60 years = Intermediate; >60 years = Old. A recognisable age-class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age-class' of young trees.

Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.

Footnote 3 - See EWBG method INDICATOR 3 for more information. Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly.

Check for the presence of all plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), particularly the following invasive non-native species: American skunk cabbage *Lysichiton americanus*; Himalayan balsam *Impatiens glandulifera*; Japanese knotweed *Reynoutria japonica*; cherry laurel *Prunus laurocerasus*; shallon *Gaultheria shallon*; snowberry *Symphoricarpos albus*; variegated yellow archangel *Lamium galeobdolon* subsp. *argentatum*; rhododendron *Rhododendron ponticum*; and tree-of-heaven *Ailanthus altissima*.

Footnote 4 - See EWBG method INDICATOR 4 and Table 2 for more information. The number of different native tree or shrub species including young trees and shrubs. A list of commonly found native tree and shrub species is provided in Table 2. Not all species listed are native to all parts of the UK. Note a list of commonly found non-native tree species are also included and should be recorded if present.

Footnote 5 - See EWBG method INDICATOR 5 and for more information. The abundance of native tree species in upper (>5 m) and understorey (up to 5 m) layers including young trees and shrubs.

Footnote 6 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (for example, glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (for example, tarmac, buildings, rivers). Area is at least 10 m wide with less than 20% covered by shrubs or trees.

Footnote 7 – Given the increased ratio of edge habitat to woodland where the woodland is <10ha.

Footnote 8 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, but the regeneration indicator gathers additional information by considering regeneration potential - if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 9 - See EWBG method INDICATOR 9 for more information and Table 3 for a list of diseases and pests and their risk level.

Footnote 10 - See EWBG method INDICATOR 10 directing to NVC key for more information. The 'UKHab to NVC translation table' in the UK Habitat Classification resources may also be useful to assess this.

Footnote 11 – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

Footnote 12 - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/672222/ancient_and_native_woodland_and_trees_policy_in_england.pdf)
and
[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/672222/ancient_woodland_ancient_trees_and_veteran_trees_advice_for_making_planning_decisions.pdf)

Footnote 13 – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

Footnote 14 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter.

Habitat: Line of Trees (Onsite)			
Condition Assessment Criteria ¹			Criterion Passed
A	At least 70% of trees are native species.		No
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.		Yes
C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.		Yes
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice ² .		No
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.		Yes
Condition	Moderate	Score	3/5

Footnote 1 – DEFRA (2007) Hedgerow Survey Handbook: A standard procedure for local surveys in the UK. 2nd ed [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 2 – Where ancient and veteran trees are present, see gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](http://publishing.service.gov.uk)

and
[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

Habitat: Native Hedgerow			
Condition Assessment Criteria			Criterion Passed
	Criteria	Criteria Description	
A1	>1.5m height average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Yes
A2	>1.5m width average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	Yes
B1		This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.	Yes

	Gap between ground and base of canopy <0.5m for >90% of length	Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	
B2	Gaps make up <10% of total length; and no canopy gaps >5m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Yes
C1	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - Measured from outer edge of hedgerow; and - Is present on one side of the hedgerow (at least)	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	Yes
C2	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	No
D1	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ .	No
D2	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).	No
Condition	Moderate	Score	5/8

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook*. A standard procedure for local surveys in the UK. [online] Available on: [layout \(hedgelink.org.uk\)](https://hedgelink.org.uk)

Footnote 2 – STALEY, J.T. ET AL (2020) *Definition of Favourable Conservation Status for Hedgerows*. [online] Available on: [Definition of Favourable Conservation Status for Hedgerows - RP2943 \(naturalengland.org.uk\)](https://naturalengland.org.uk)

Footnote 3 – Wildlife and Countryside Act 1981 (as amended)

Footnote 4 – CHEFFINGS, C. M. et al. (2005) *The Vascular Plant Red Data List for Great Britain*. Species Status 7: 1-116 [online] Available on: [The Vascular Plant Red Data List for Great Britain \(Species Status No. 7\) | JNCC Resource Hub](https://jncc.gov.uk)

Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). *Definitions: wild, native or alien?* [online] Available on: [Definitions: wild, native or alien? – Botanical Society of Britain & Ireland \(bsbi.org\)](https://bsbi.org)

Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) *Online Atlas of the British and Irish Flora*. [online] Available on: [Acknowledgements | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](https://brc.ac.uk)

Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNS) (2022) Available on: [Home » NNSS \(nonnativespecies.org\)](https://nonnativespecies.org)

Habitat: Native Hedgerow with trees							
Condition Assessment Criteria			Criterion Passed				
	Criteria	Criteria Description	H1 (with associated ditch)	H2	H3	H5	H6
A1	>1.5m height average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Yes	Yes	Yes	Yes	Yes
A2	>1.5m width average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	Yes	Yes	Yes	Yes	Yes
B1	Gap between ground and base of canopy <0.5m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	Yes	Yes	Yes	Yes	Yes
B2	Gaps make up <10% of total length; and no canopy gaps >5m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Yes	Yes	Yes	Yes	Yes
C1	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - Measured from outer edge of hedgerow; and - Is present on one side of the hedgerow (at least)	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	No	No	No	No	Yes

C2	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	No	No	No	No	No
D1	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ .	Yes	yes	yes	yes	yes
D2	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).	Yes	No	No	No	No
E1	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	No	No	No	No	No
E2	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	Yes	Yes	Yes	Yes	Yes
Score			7/10	6/10	6/10	6/10	7/10
Condition			Moderate	Moderate	Moderate	Moderate	Moderate

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook*. A standard procedure for local surveys in the UK. [online] Available on: [layout \(hedgelinek.org.uk\)](http://layout.hedgelinek.org.uk)

Footnote 2 – STALEY, J.T. ET AL (2020) *Definition of Favourable Conservation Status for Hedgerows*. [online] Available on: [Definition of Favourable Conservation Status for Hedgerows - RP2943 \(naturalengland.org.uk\)](http://Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk))

Footnote 3 – Wildlife and Countryside Act 1981 (as amended)

Footnote 4 – CHEFFINGS, C. M. et al. (2005) *The Vascular Plant Red Data List for Great Britain*. Species Status 7: 1-116 [online] Available on: [The Vascular Plant Red Data List for Great Britain \(Species Status No. 7\) | NCC Resource Hub](#)

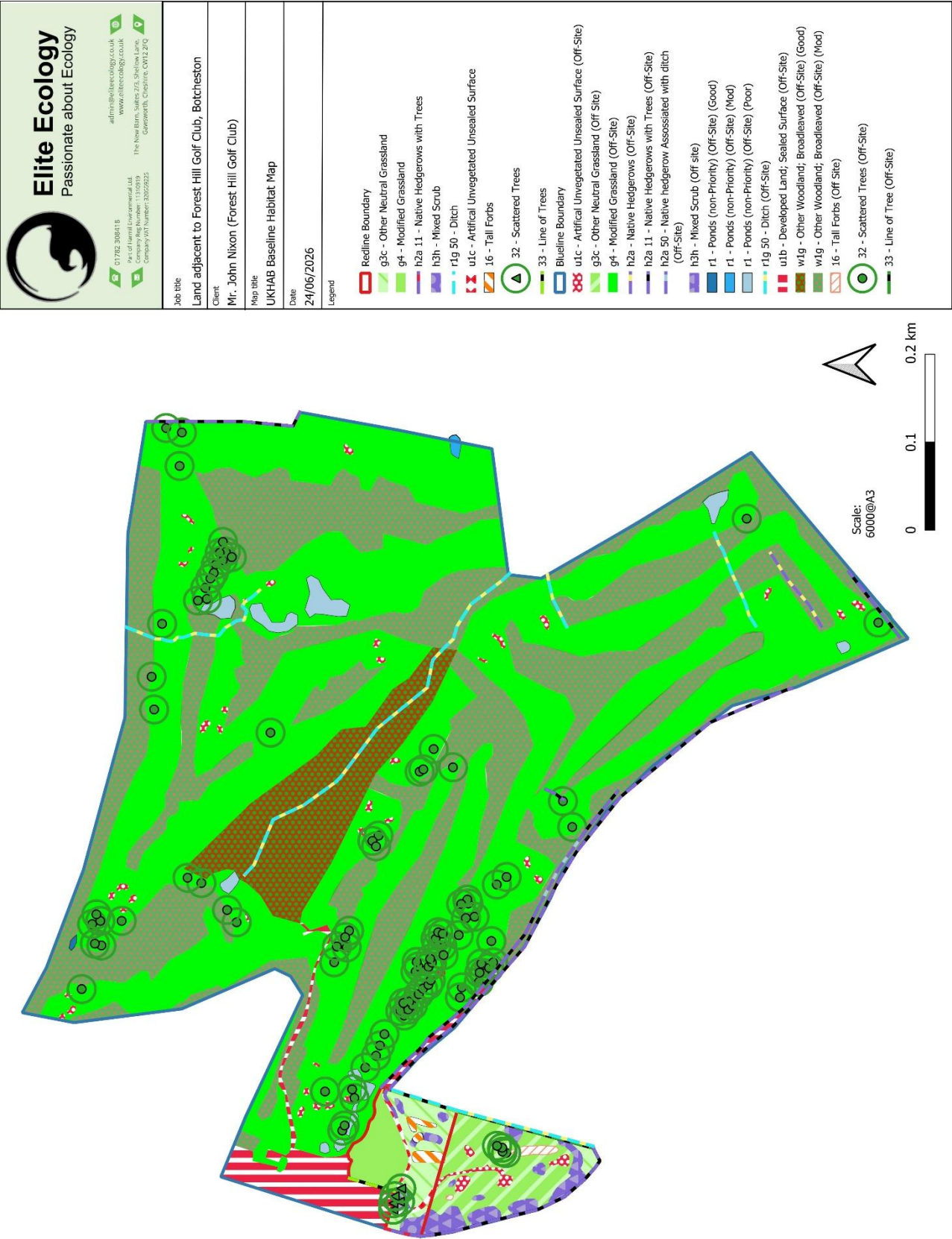
Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). *Definitions: wild, native or alien?* [online] Available on: [Definitions: wild, native or alien? – Botanical Society of Britain & Ireland \(bsbi.org\)](#)

Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) *Online Atlas of the British and Irish Flora*. [online] Available on: [Acknowledgements | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](#)

Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNS) (2022) Available on: [Home » NNSS \(nonnativespecies.org\)](#)

Footnote 8 – 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 \(www.gov.uk\)](#)

Appendix C: Baseline Habitat Map



Elite Ecology
 Passionate about Ecology

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 01782 238118
 Forest Hill Environmental Ltd
 Company Reg Number: 1109091
 Company Reg Address: 2504025
 The Newbury Arms, 15 St. James Street
 Goudworth, Goudworth, CW12 2DQ

Job title
 Land adjacent to Forest Hill Golf Club, Barcheston

Client
 Mr. John Nixon (Forest Hill Golf Club)

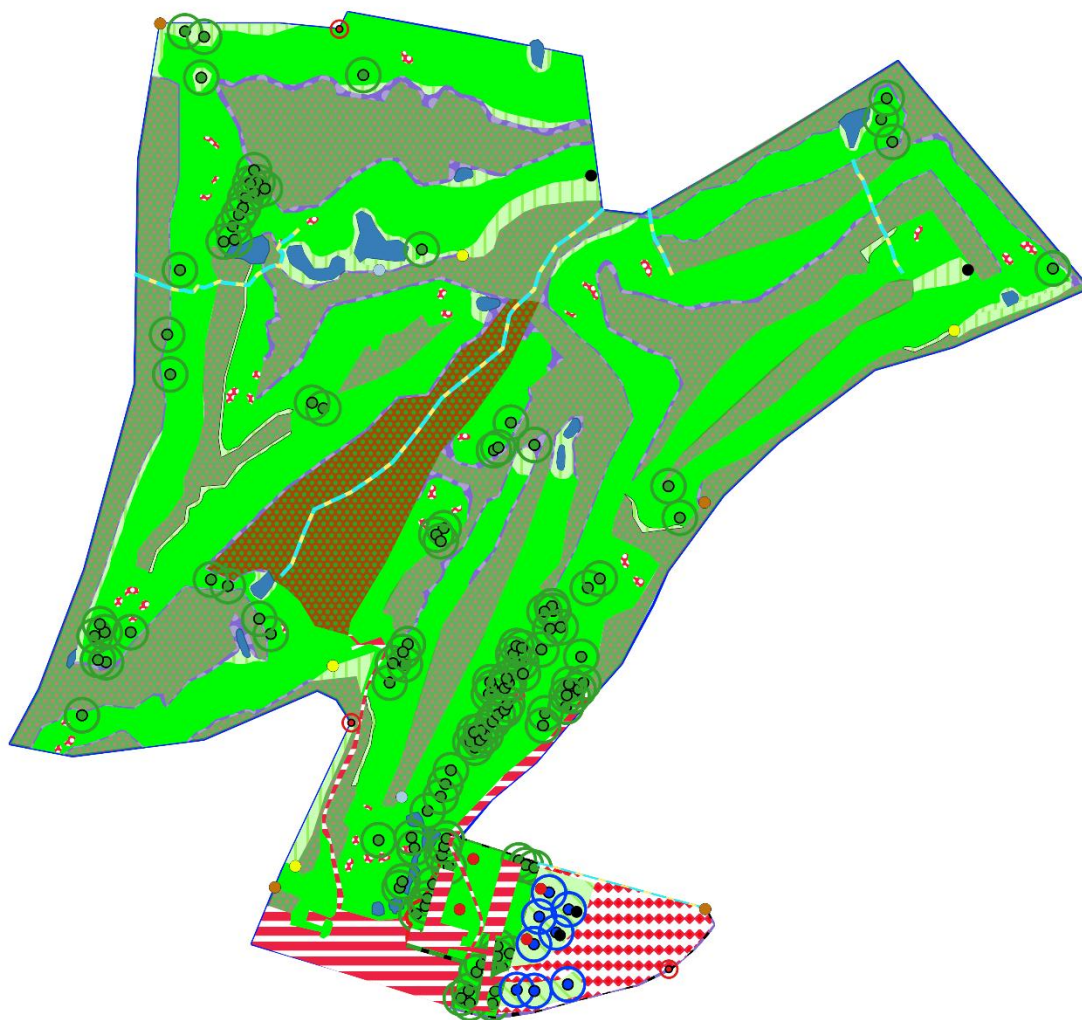
Map title
 New Habitat Map

Date
 29/01/2026

Legend

- Amphibian Hibernacula
- Bat Boxes
- Bee Boxes
- Bird Boxes
- Hedgehog Boxes
- Hedgehog Highways
- 32 - Scattered Trees (Off Site)
- 32 - Scattered Trees
- 33 - Line of Trees
- g3c - Other Neutral Grassland (Off Site)
- g4 - Modified Grassland
- g3c - Other Neutral Grassland
- h2a - Native Hedgerow with Trees
- h3h - Mixed Scrub
- u1c - Artificial Surface (Off Site)
- u1b - Developed Land; Sealed Surface
- r1 - Ponds (non-priority habitat)
- r1g 50 - Ditches
- w1g - Other Broadleaved Woodland (Good)
- w1g - Other Broadleaved Woodland (Mod)
- Redline Boundary
- BlueLine Boundary

Scale: 6000@A3 0 0.1 0.2 km



Appendix E: Site Photographs

Plate and Description	Image
Plate 1: Image showing the site clearance.	 A wide-angle photograph of a cleared site. The foreground is a flat, brownish-grey area with some sparse green vegetation and small puddles. In the background, a dense line of green trees is visible under a sky filled with large, grey clouds. A blue container is visible on the right side of the cleared area.
Plate 2: Image showing the site clearance and retained hedgerow with trees.	 A photograph showing a cleared area with a retained hedgerow. The foreground is a flat, brownish-grey area with some sparse green vegetation and small puddles. A line of trees and a hedgerow are visible in the background under a sky filled with large, grey clouds.

Plate 3: Image showing the site clearance and retained line of trees.



Plate 4: Image showing the site clearance.

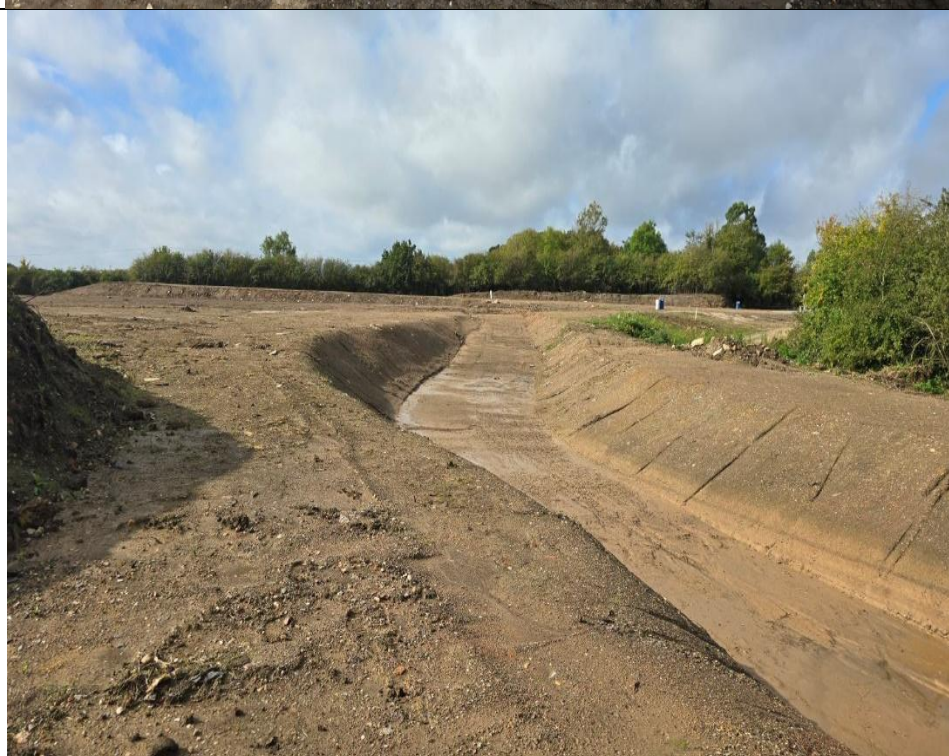


Plate 5: Image showing the modified grassland.



Plate 6: Image showing the site clearance and line of trees.



Plate 7: Image of one of the ponds located off site.



Plate 8: Image of some of the scattered trees located off site.



Plate 9: Image of some of the woodland habitat located off site.



Plate 10: Image of another of the ponds located off site.



Plate 11: Image of some of the modified grassland and woodland edge off site.



Plate 12: Image of one of the ditches located off site.



Plate 13: Image of the ditches located on site behind the line of trees.



Appendix F: Biodiversity Net Gain Relevant Policies

Environmental Act 2021

Part 6 on nature and biodiversity covers all areas of biodiversity net gain across two core sections. This Act mandates that all planning meets a minimum of a 10% gain in biodiversity calculated using the appropriate Metric and that the newly created habitats are secured for at least 30 years.

National Planning Policy Framework (NPPF)

While currently not a legal obligation, biodiversity and environmental net gains are mentioned in the revised National Planning Policy Framework (NPPF) within the following paragraphs (please refer to the NPPF for the full quotations):

Achieving sustainable development

Paragraph 8 Section C. *“an environmental objective – **to protect and enhance our natural, built and historic environment**; including making effective use of land, **improving biodiversity**, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”*

Preparing and reviewing plans

Paragraph 32. *“Local plans and spatial development strategies should be informed throughout their preparation by a sustainability appraisal that meets the relevant legal requirements. This **should demonstrate how the plan** has addressed relevant economic, social and **environmental objectives** (including **opportunities for net gains**). Significant **adverse impacts on these objectives should be avoided** and, wherever possible, alternative options which reduce or eliminate such impacts should be pursued. Where significant adverse impacts are unavoidable, suitable mitigation measures should be proposed (or, where this is not possible, compensatory measures should be considered).”*

Identifying land for homes

Paragraph 73 section C. *“consider the opportunities presented by existing or planned investment in infrastructure, the area’s economic potential and the scope for **net environmental gains**”*

Transport infrastructure:

Paragraph 104. *“Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:
d) the environmental impacts of traffic and transport infrastructure can be identified assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for **net environmental gains**.*

Planning decisions:

Paragraph 119 *“Planning decisions and planning policy should a) encourage multiple benefits from both urban and rural land ... and taking opportunities to **achieve net environmental gains - such as developments that would enable new habitat creation.**”*

Conserving and enhancing the natural environment

Paragraph 174 Section D. “**minimising impacts on and providing net gains for biodiversity**, including by establishing coherent ecological networks that are more resilient to current and future pressures”

Habitats and biodiversity

Paragraph 179. “To protect and enhance biodiversity and geodiversity, plans should:

a) Identify, map and **safeguard components of local wildlife-rich habitats** and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, **enhancement, restoration or creation**;

and b) 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 180. “When determining planning applications, local planning authorities should apply the following principles:

a) if **significant harm to biodiversity** resulting from a development **cannot be avoided** (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then **planning permission should be refused**;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the **loss or deterioration of irreplaceable habitats** (such as ancient woodland and ancient or veteran trees) **should be refused**, unless there are wholly exceptional reasons and a suitable compensation strategy exists;

and d) 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.”

Local Plan

Biodiversity Net Gain is not mentioned with the Hinckley & Bosworth Borough Council Local Development Framework Core Strategy.

Appendix G: Bats and Artificial Light

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotis bats (*Myotis* spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

➤ **To introduce lighting curfews or use of PIR sensors.**

Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

➤ **To consider no lighting solutions where possible.**

Options such as white lining, good signage and LED cat's eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

➤ **To use only high pressure sodium or warm white LED lamps where possible.**

High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

➤ **To minimise the spread of light.**

The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

➤ **To consider the height of the lighting column.**

While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

➤ **To avoid reflective surfaces below lights.**

The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

11. Notice to Readers: Conditions of this Report

All reports are certified products and cannot be shown, copied, or distributed to third parties without the written permission of Elite Ecology. No liability is accepted for the contents of the report, other than to that of the client(s). If any part of this report is altered without the written permission of Elite Ecology, then the whole report becomes invalid.

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Elite Ecology undertake all site surveys with reasonable skill, care, and diligence, within the terms of the contract that has been agreed with the client and abiding by the Elite Ecology Terms and Conditions. The actions of the surveyors on site, and during the production of the report, were undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management.

The latest good practice guidelines put in place by Natural England or the relevant statutory conservation bodies have been followed by the surveyors on site. If those methodologies fail to identify a protected species during the survey efforts, no responsibility can be attributed to Elite Ecology. If any of these guidelines are adapted between the date(s) of the surveys being undertaken and the submission of this report, then Elite Ecology takes no responsibility for this.

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The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

Elite Ecology has been provided with full payment for this report and thus the product has been released to the client(s) for the purpose of their planning application. If any part of the report is lost or altered without the written permission of Elite Ecology, then the entire report becomes invalid. Due to the potential for continual change within the natural world, this report is valid for **2 years only** from the date of the last survey visit. If this report is submitted after the 2 year deadline, then a further updated inspection will be required to ascertain whether the site remains in the same condition as it was when initially inspected.

No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.