
AMERICAN BARN AT MILL FARM, BLACKLAND, WILTSHIRE

BIODIVERSITY NET GAIN REPORT

On behalf of

MR & MRS RAVEN

Final Report

10th November 2025

Prepared by



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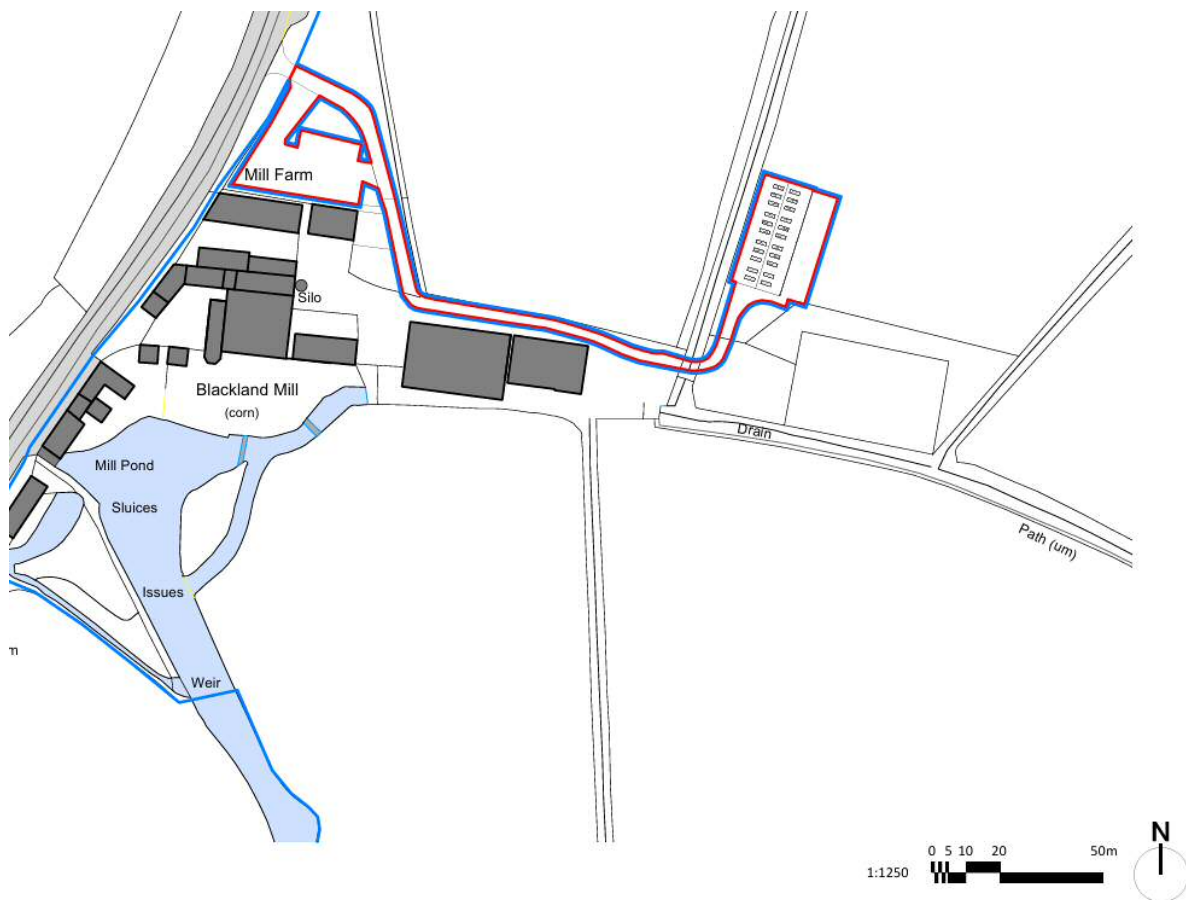
1 Introduction

1.1 Background

The client is submitting a planning application to Wiltshire Council to construct an American style horse stabling barn, which measures 14.07m wide by 32.07m long (451m²). The new barn will be located within a grass horse paddock on land at Mill Farm, Blackland, Calne, Wiltshire, SN11 8PR, see Figure 1. The new barn will be accessed and served via an existing hard-standing vehicle track and parking.

The paddock grassland will also provide the land for compensatory habitat creation (enhanced grass and mixed native scrub) to off-set the loss of grass within the development plot.

Figure 1 *Location of American Barn, Access and Compensatory Habitats*



1.2 Scope of work and experience

A Biodiversity Net Gain (BNG) Metric calculation and this BNG Report has been produced as part of the planning application submission documentation, as required by The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024.

To inform the BNG calculations, a habitat survey of the land within the red line application site has been undertaken using UKHabs methodology, which identifies, categorises and quantifies baseline habitats affected by the proposed development.

The baseline habitat data and proposed development plan have been used to populate the Defra Statutory Biodiversity Metric Calculation Tool V1.0.4 to run a BNG calculation (version of the Metric accompanying this report).

The BNG assessment has been completed by Dr Stephen Dangerfield who has 30 years' experience. Stephen is a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

2 Methodology

2.1 Field survey

A habitat survey of the proposed development site was undertaken on 8th August 2025. The survey determined habitat type(s) according to UK Habitats Classification (UKHab Ltd, 2023) as well as extent and condition (Natural England, 2024). Botanical species within each habitat type were recorded where appropriate. BNG habitat condition assessments of relevant baseline and future habitats are provided.

2.2 Study limitations

There are no limitations for the survey – the survey area was accessible and weather conditions were good (dry, 20°C, 20% cloud, sunny and BS1).

2.3 Biodiversity Net Gain

2.3.1 Approach

The Environment Act 2021 covers targets, plans and policies for, *inter alia*, 'improving the natural environment' and 'nature and biodiversity'. The Act brings in new requirements in relation to Biodiversity Net Gain (BNG).

The Environment Act establishes the precedent for achieving a biodiversity gain as a condition of planning permission and establishes that a biodiversity gain is met if the biodiversity value attributable to the development exceeds the pre-development biodiversity value of the on-site habitat by at least 10%. Furthermore, any habitat enhancement must be maintained for at least 30 years after the development is completed.

Site habitat losses/gains have been calculated based on a comparison of baseline habitat and the proposed scheme layout habitat.

The baseline habitat survey data and proposed development plans have been used to quantify area (ha) to populate the Defra Statutory Biodiversity Metric, which is used to calculate Biodiversity Net Gain (BNG) in terms of habitat unit gains or deficits. Data are used to create BNG baseline and proposed plans (see Appendix A). Habitat condition assessments of relevant baseline or future habitats have been provided (see Appendix B).

The means by which BNG can be demonstrated is set out in the following guidance and resources. These have been used to inform the BNG assessment and overall approach set out in this report.

- ❖ CIEEM, CIRIA, IEMA (2019) Biodiversity Net Gain: Good practice principles for development.
- ❖ CIEEM (2021) Biodiversity Net Gain Report and Audit Templates.
- ❖ British Standard (2021) BS 8683:2021 Process for designing and implementing Biodiversity Net Gain – Specification.
- ❖ Defra (2024) The Statutory Biodiversity Metric - including the Technical Supplement, User Guide, Calculation Tool and Habitat Condition Sheets.
- ❖ The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024.
- ❖ UKHab Ltd (2023). UK Habitat Classification Version 2.0.

The BNG User Guide (Defra, February 2024) identifies limitations of the biodiversity metric defined as principles that inform the use of the biodiversity metric tool, including:

- ❖ Principle 1: The metric assessment should be completed by a competent person.
- ❖ Principle 2: The use of the biodiversity metric does not override existing biodiversity protections, statutory obligations, policy requirements, ecological mitigation hierarchy or any other requirements. This includes consenting or licensing processes, for example woodlands.
- ❖ Principle 3: The biodiversity metric should be used in accordance with established good practice guidance and professional codes.
- ❖ Principle 4: The biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice.
- ❖ Principle 5: Biodiversity units are a proxy for biodiversity and should be treated as relative values.
- ❖ Principle 6: The biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance.
- ❖ Principle 7: Habitat interventions need to be realistic and deliverable within a relevant project timeframe.
- ❖ Principle 8: Created and enhanced habitats should be, where practical and reasonable, local to any impact and deliver strategically important outcomes for nature conservation.
- ❖ Principle 9: The biodiversity metric does not enforce a minimum habitat size ratio for compensation of losses. Proposals should aim to:
 - maintain habitat extent - supporting more, bigger, better and more joined up ecological networks.
 - ensure that proposed or retained habitat parcels are of sufficient size for ecological function.

2.3.2 BNG trading rules

The BNG trading rules are set out in the table below (extract from Statutory Biodiversity Metric User Guide, Natural England, 2024). These set minimum habitat creation and enhancement requirements to compensate for specific habitat losses, up to the point of no net loss. They are based on the habitat type and distinctiveness of the lost habitat.

Baseline habitat distinctiveness band	Area module (area units)	Hedgerow module (hedgerow units)	Watercourse module (watercourse units)
Very High	Priority should be given to replacing losses with area habitat units of the same habitat type (see below notes on trading)	Losses must be replaced with hedgerow units of the same habitat type	Priority should be given to replacing losses with watercourse units of the same habitat type (see below notes on trading)

Baseline habitat distinctiveness band	Area module (area units)	Hedgerow module (hedgerow units)	Watercourse module (watercourse units)
High	Losses must be replaced with area habitat units of the same habitat type	Losses must be replaced with hedgerow units of the same habitat type or of a higher band	Losses must be replaced with watercourse units of the same habitat type
Medium	Losses must be replaced by area habitat units of medium band habitats within the same broad habitat type	Losses must be replaced with hedgerow units of the same band	Losses must be replaced with watercourse units of the same habitat type
Low	Losses must be replaced with area habitat units of the same or higher band	Losses must be replaced with hedgerow units of the same or of a higher band	Losses must be replaced with watercourse units of a higher band
Very low	Trading rules do not apply	Losses must be replaced with hedgerow units of the same or of a higher band	Not applicable

3 Existing Habitats

3.1 Modified grass

Most of the American Barn and compensatory habitats (enhanced grass and mixed native scrub) sits within part of a grass horse paddock and cover 0.0657 ha.

The field is permanent pasture that is heavily grazed and trampled by horses. The grassland is dominated (ca. 90%) rye grass (*Lolium* sp) with much smaller amounts of rough meadow-grass (*Poa trivialis*) and Yorkshire fog (*Holcus lanatus*). Forbs are restricted to very small amounts of white clover (*Trifolium repens*), broad-leaved dock (*Rumex obtusifolius*), broad-leaved plantain (*Plantago major*) and sow thistle (*Sonchus* sp). The grassland suffers excessive trampling and there are bare patches throughout the sward.

Only along the field edge, which is less disturbed / grazed, do a few other ruderal or unpalatable plants occur such as creeping and spear thistle (*Cirsium arvense*, *C. vulgare*), nettle (*Urtica dioica*) and creeping buttercup (*Ranunculus repens*).

The average number of plants per m² is less than three as shown below based on the average number of plants recorded in five random 1m² quadrats selected within the development site.

Plants	Q1	Q2	Q3	Q4	Q5
Rye grass	X	X	X	X	X
Rough meadow-grass		X	X	X	X
White clover				X	X
Sow thistle					X
Total number	1	2	2	3	4
Average number	2.4				

The Modified Grassland has a Habitat Condition of Poor (see Appendix B).



Grassland in location of proposed barn (top) and compensatory habitats (left)

3.2 Artificial land, unsealed surface

The majority of the existing access road and associated car parking are surfaced with gravel or compacted stone/clinker, which covers 0.1492 ha.

At the entrance of the paddock is a small area of compacted stone, which covers 0.005 ha.

Artificial Unsealed land does not require a Habitat Condition to be set.



Existing vehicle parking (top left) and access road leading to the site of the proposed American barn



Area of hard-standing at entrance to horse paddock

3.3 Developed land, sealed surface

There is a small area of tarmac at the entrance of the existing vehicle access road, which covers 0.0125 ha.



4 Proposed Habitats

4.1 Developed land, sealed surface

The new American barn will measure 14.07m wide by 32.07m long (0.0451 ha).

The small area of tarmac at the entrance of the existing vehicle access road is retained and will continue to cover 0.0125 ha.

Developed Sealed land does not require a Habitat Condition to be set.

4.2 Artificial land, unsealed surface

The existing vehicle access and parking is retained and will continue to cover 0.1492 ha.

Artificial Unsealed land does not require a Habitat Condition to be set.

4.3 Modified grassland

A strip of existing modified grassland along the eastern side of the new barn, which measures 3m wide by 32m long (0.0096 ha) will be retained and managed to enhance its condition from 'poor' to 'good', which is set with a standard target timescale of 7 years.

This will be achieved by primarily altering the management of the grassland to prevent horse-grazing of this strip of grassland, which will only be used to allow horses into and out of the wider paddock. The removal of high grazing pressure should allow the grassland to naturally regenerate an enhanced botanical diversity. The grassland will preferably be left as a longer sward with just occasional light topping as required to allow horses to move through safely.

If the grassland does not naturally achieve 'good' condition through altered management alone then the grassland botanical diversity can be enhanced using an appropriate seed mix obtained from a reputable seed house, for example, Emorsgate EM1F (Basic General Purpose Wild Flowers), Naturescape N1F (General Purpose Mix Flowers Only) or equivalent.

If supplementary seeding is required then the grassland will be prepared in late summer by cutting the existing sward very hard and creating gaps in the sward (aiming to create 50% bare soil) by raking. Seeds will be sown at the rate specified by the supplier. The grassland seed mix will be sown preferably in the autumn (August-September) or alternatively in spring (March-April).

Some weed control within the grassland may need to be implemented when required, which could involve hand pulling of self-set, young woody / scrub species (from adjacent planted scrub belt – see Section 4.4) and potentially the targeted use of herbicide for docks/thistles or other invasive or undesirable species which could appear.

The applicant will be responsible for the management / creation and aftercare of the grassland.

The Modified Grassland has a target Habitat Condition of Good (see Appendix B) with a standard timeframe of 7 years to reach the target condition.

4.4 Mixed native scrub

A strip of existing modified grassland along the eastern side of the new barn, which measures 5m wide by 32m long (0.0160 ha) will be replaced with newly planted mixed native scrub, which is set with a standard target timescale of 5 years. This scrub belt will provide both visual screening and enhanced habitat diversity on-site.

A recommended planting mix, which is considered safe for horses, is shown below.

Common name	Scientific name	Notes
Crab apple	<i>Malus sylvestica</i>	<i>Understorey & Canopy tree</i>
Dogwood	<i>Cornus sanguinea</i>	<i>Understorey</i>
Field maple	<i>Acer campestre</i>	<i>Understorey & Canopy tree</i>
Field rose	<i>Rosa arvensis</i>	<i>Understorey</i>
Goat willow	<i>Salix caprea</i>	<i>Understorey & Canopy tree</i>
Hawthorn	<i>Crataegus monogyna</i>	<i>Understorey</i>
Hazel	<i>Corylus avellana</i>	<i>Understorey</i>
Hornbeam	<i>Carpinus betulus</i>	<i>Canopy tree</i>

Trees and shrubs will be planted on a 1m x 1m grid and planting will avoid a rigid grid structure to achieve a naturalistic planting. Each tree or shrub will have a tree-stake for support, will be mulched and will be protected from grazing animals using tree guards and stock-proof fencing.

New planting should preferably take place between November and March, and newly planted areas should be inspected regularly to confirm establishment or identify remedial action. Any significant gaps, diseased or dead plants should be replaced with new plants of the same species.

Once established scrub requires little intervention with management restricted to occasional cutting back, generally the sides to ensure scrub does not invade other habitats where it would be undesirable such as the retained grassland.

The applicant will be responsible for the planting / creation and aftercare of the new scrub.

The Mixed Native Scrub has a target Habitat Condition of Moderate (see Appendix B) with a standard timeframe of 5 years to reach the target condition.

5 Habitat Change Summary

The calculated changes in baseline and proposed habitats are summarised in the table below.

Existing habitats			Proposed habitats		
Type	Size (ha)	Condition	Type	Size (ha)	Condition
Modified grass	0.0657	Poor	Modified grass	0.0096	Good
Mixed scrub	0	n/a	Mixed scrub	0.0160	Moderate
Developed, sealed	0.0125	n/a	Developed, sealed	0.0576	n/a
Artificial, unsealed	0.1542	n/a	Artificial, unsealed	0.1492	n/a
TOTAL	0.2324			0.2324	

6 Wildlife

6.1 Constraints

The study area encompasses a small area of grass paddock that is heavily horse grazed maintaining a very low, uniform sward height with very restricted botanical diversity. No structures, trees, shrubs or hedge are within or affected by the proposed development. The new barn will be accessed / served by an existing vehicle track and parking.

There are no protected species issues associated with this proposed development. Roosting bats are not present and the small area of grass has negligible value for foraging bats. There is no badger sett within or adjacent to the development site and no signs of badger foraging were observed. No other protected mammals are present within or adjacent to the application site. More common / widespread mammals, such as deer, fox or hedgehog, could pass through the development site.

The application site is unsuitable for ground nesting birds, being small and enclosed, and no other vegetation that could support nesting birds is affected by the proposed development. The grass paddock is unsuitable for supporting reptiles or great crested newt / amphibians being heavily grazed with a low open sward.

6.2 Impacts and mitigation

Construction of the new American barn, which will involve creation of small excavations and laying of pipes, has the potential to injure / cause mortality to common mammals if undertaken without appropriate safeguards during the construction phase, which is a negative impact in a Local (site) context.

To ensure protection of common mammals that may traverse the site during the construction phase the following actions will be implemented:

- ❖ Any excavations that need to be left overnight will be covered, appropriately profiled or fitted with a ramp to ensure that any animals that enter the hole can safely escape.
- ❖ Any open pipework with an outside diameter of greater than 120 mm will be covered at the end of each working day to prevent animals entering/becoming trapped.
- ❖ Any excavations or pipes left overnight will be inspected last thing in the working day and first thing the next morning, and if an animal is found an appropriately qualified person should be contacted to agree appropriate action.

7 BNG Assessment

The Defra Statutory Biodiversity Metric V1.0.4 has been used to quantify 'habitat' losses/gains based on information from the baseline habitat survey and the proposed scheme design (see Sections 3, 4 and 5).

Baseline habitat = 0.13 units

Proposed habitat = 0.15 units

Therefore, for this proposed development the calculated habitat gains are:

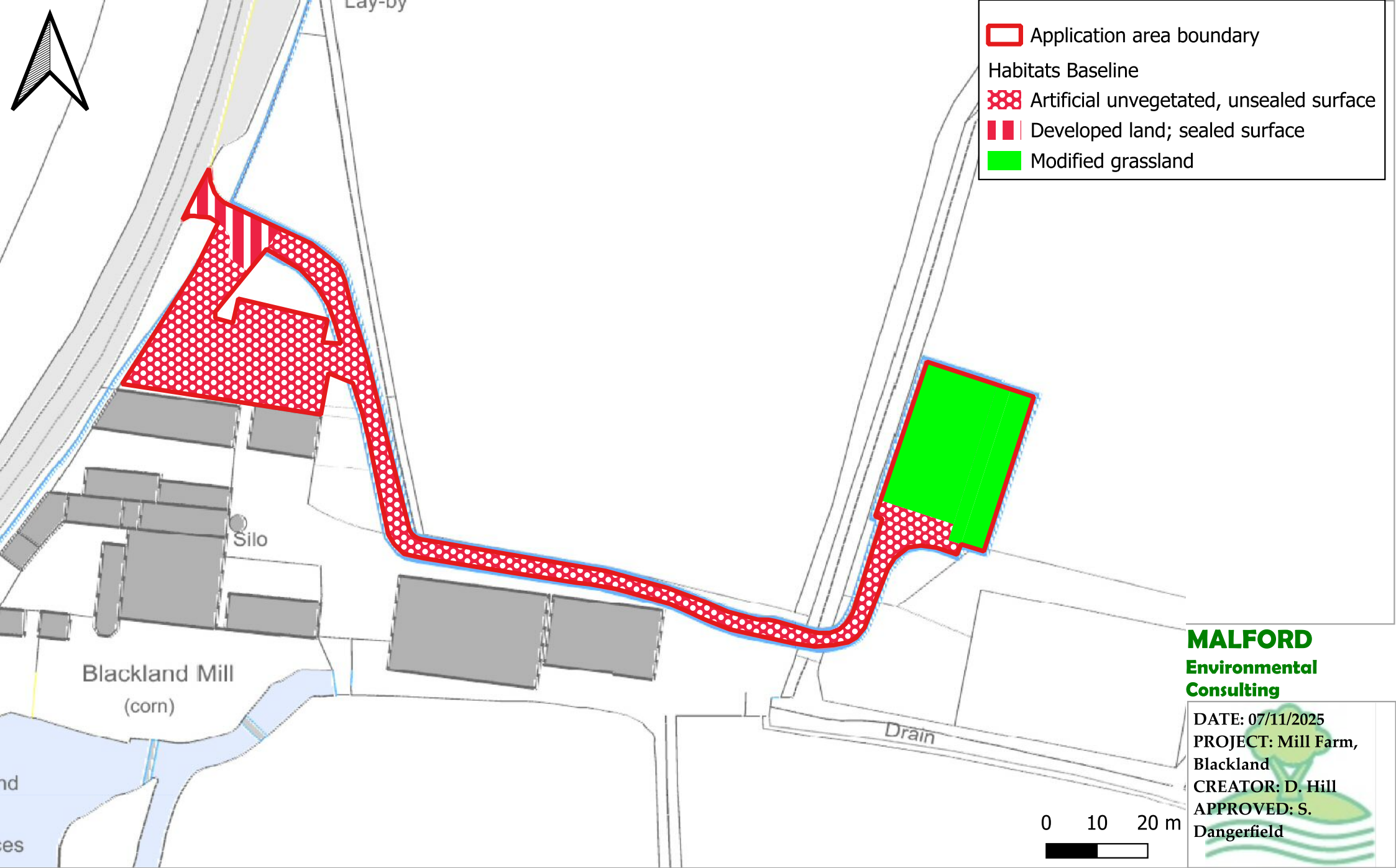
❖ Total habitat net unit change = + 0.02 units

❖ Total net percentage change = + **13.26 %**

The proposed development, which includes grassland management and scrub creation, therefore provides a biodiversity gain in accordance with the Environment Act 2021 (BNG targets met and biodiversity trading rules have been satisfied).

The applicant will be responsible for the management, creation and aftercare of the compensatory habitats that form the Biodiversity Net Gain requirement, which will be secured as part of the planning permission.

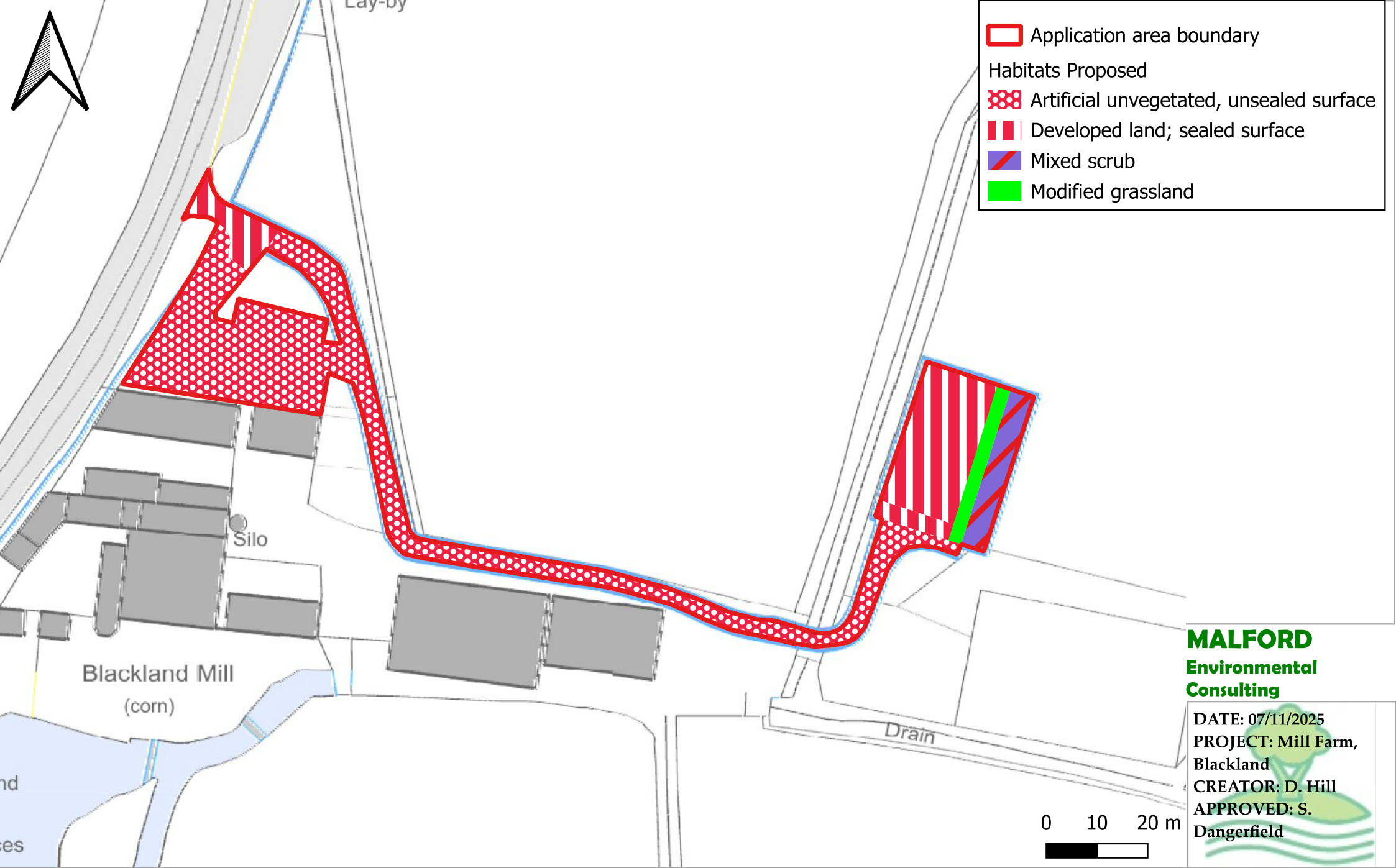
Appendix A BNG Baseline and Proposed Plans



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DATE: 07/11/2025
PROJECT: Mill Farm,
Blackland
CREATOR: D. Hill
APPROVED: S.
Dangerfield

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- Application area boundary
- Habitats Proposed
 - Artificial unvegetated, unsealed surface
 - Developed land; sealed surface
 - Mixed scrub
 - Modified grassland

MALFORD
Environmental
Consulting

DATE: 07/11/2025
PROJECT: Mill Farm,
Blackland
CREATOR: D. Hill
APPROVED: S.
Dangerfield

Appendix B BNG Habitat Conditions

Baseline Habitats

Modified Grassland (Paddock)

The existing Modified Grassland is classed as having a 'poor' condition as it achieves 4 criteria out of the total of 7 criteria (not red), as set out below.

1. There are 6-8 vascular plant species per m² present, including at least 2 forbs (these may include those listed in Footnote).
2. 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.
3. Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present).
4. 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.
5. Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
6. Cover of bracken *Pteridium aquilinum* is less than 20%.
7. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA4).

Footnote: 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*).

Post-development Habitats

Modified Grassland (Access strip)

To achieve a 'good' condition status the future management of the Modified Grassland strip will aim to achieve 6 of the following 7 criteria (not red).

1. There are 6-8 vascular plant species per m² present, including at least 2 forbs (these may include those listed in Footnote).
2. 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.
3. Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present).
4. 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.
5. Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
6. Cover of bracken *Pteridium aquilinum* is less than 20%.
7. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA4).

Footnote: 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*).

Mixed native scrub

To achieve a 'moderate' condition status the management of the Mixed Native Scrub will aim to achieve 4 of the following 5 criteria (not red).

1. The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description, which includes:
 - ❖ At least 80% of scrub is native.
 - ❖ There are at least three native woody species.
 - ❖ No single species comprises more than 75% of the cover (except hazel *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* (only in its restricted native range), or box *Buxus sempervirens*, which can be up to 100% cover).
2. Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.
3. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.
4. The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.
5. There are clearings, glades or rides present within the scrub, providing sheltered edges.

Species indicative of suboptimal condition for this habitat type may include: non-native conifers, tree-of-heaven (*Alianthus altissima*), holm oak (*Quercus ilex*), European turkey oak (*Quercus cerris*), cherry laurel (*Prunus laurocerasus*), snowberry (*Symphoricarpos* spp.), shallon (*Gaultheria shallon*), American skunk cabbage (*Lysichiton americanus*), buddleia (*Buddleja* spp.), cotoneaster (*Cotoneaster* spp.), Spanish bluebell (*Hyacinthoides hispanica*) and hybrid bluebells (*Hyacinthoides x massartiana*). There may be additional relevant species local to the region and or site, as well as species listed on Schedule 9 of the Wildlife & Countryside Act 1981.