Habitat Management and Monitoring Plan (HMMP)

Land at Near the Junction of Lynwick Street and Guildford Road

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 INTRODUCTION

1.1 The Ecology Partnership was commissioned by Welbeck Land to complete a Habitat Management and Monitoring Plan (HMMP) for the proposed development of Land at, Land Near the Junction of Lynwick Street and Guildford Road, Horsham, West Sussex hereafter referred to as the 'site' (Figure 1 – red line). The Biodiversity Net Gain (BNG) Assessment 2025 should be read in conjunction with the HMMP.

Figure 1: Site boundary (red line).

1.2 The biodiversity management and monitoring plan is based on the proposed habitats detailed in the Biodiversity Net Gain assessment (Figure 2).

Figure 2: BNG Habitat Creation.

2.0 HABITAT MANAGEMENT AND MONITORING PLAN

Non-technical summary

2.1 The HMMP sets out the habitat creation, management and monitoring for the site. The HMMP will ensure that the biodiversity net gain (Figure 3) is achieved.

Roles and responsibilities

2.2 The owner of the site will be responsible for the habitat creation, management and monitoring.

Monitoring

2.3 A monitoring report will be submitted to the council during years 5, 10 and 30. The monitoring report will be completed by the owners of the site. Each report will detail the habitat type and the current condition. If habitats are not in the correct type or condition,

the report will detail how ongoing management will ensure the type or condition is achieved.

Habitats and condition targets

2.4 Table 1 presents a summary of what will be delivered based on the biodiversity metric. These habitat condition targets form the basis of what the management plan is setting out to achieve throughout a period of 30 years. Introduced shrub and bramble scrub have a default condition (Condition Assessment N/A), as such no detailed management strategy is provided although management will ensure they meet the UKHab definitions.

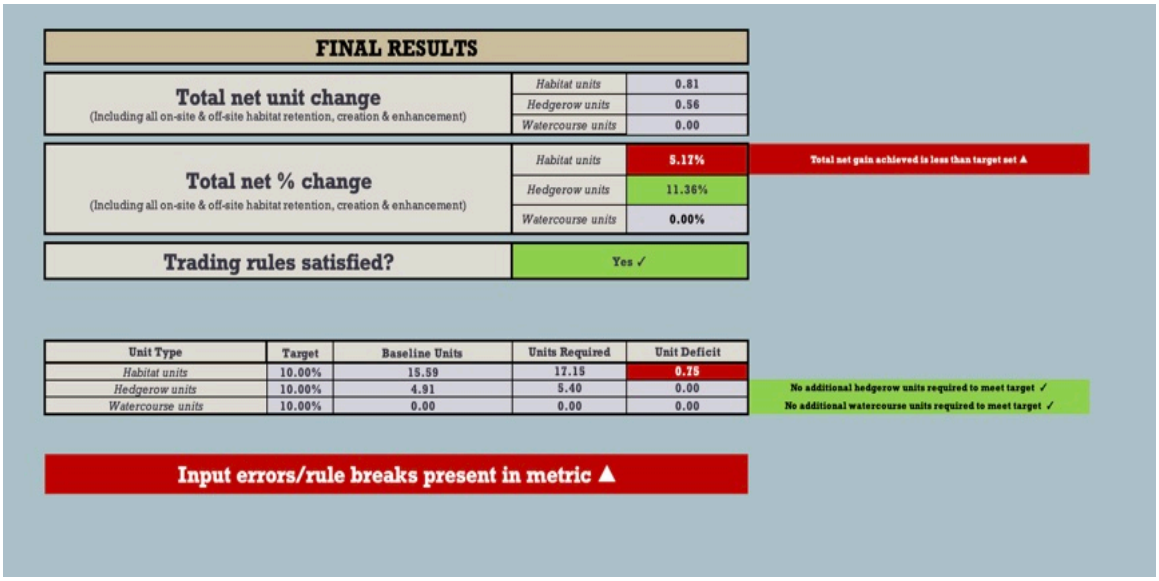

Figure 3: Headline results.

2.5 A summary of the management to achieve these target conditions is detailed for each habitat in Tables 2-7, with a collated table of management prescriptions in Table 8.

Table 1 – Target Habitat Conditions

Target Habitat Type	Retained or Created	Targeted Condition	Years to Targeted Condition	Condition Assessment Targets
Mixed scrub	Created	Good	10	Passes for criteria A, B, C, D and E
Neutral Grassland	Created	Moderate	5	Passes A, B, C, D
Neutral Grassland (SUDS)	Created	Moderate	5	Passes A, B, C, D
Rural tree	Created	Moderate	10	Passes for criteria B, D, F
Hedgerow	Created	Moderate	5	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).
Orchard	Created	Moderate	20	Passes C, D, E, F, G, H

3.0 MIXED SCRUB

3.1 The UKHab definition for broad (h) heathland and shrub habitat is "*Vegetation with a >25% cover of dwarf shrub species that are <1.5 m high or woody species ≤5 m high*" and to ensure mixed scrub habitat is created, the UKHab definition and species mix have been detailed below.

Definition

3.2 Dense scrub comprising a mixture of native species without a single species dominant or stands with a dominant species not listed in h3a-hsk.

3.3 The aim for the management of retained and enhanced mixed scrub habitats is to maintain a condition assessment score of **Good** within 30 years. To do this, at least three of the following must be met:

- Ensure at least 80% of the scrub is native and there are at least three native woody species with no single species comprising more than 75% of the cover.

- Seedlings, saplings, young shrubs and mature (ancient or veteran) shrubs are all present.
- There is an absence of invasive non-native species (as listed on Schedule 9 of WCA) and species indicative of sub-optimal conditions make up less than 5% of ground cover.
- The scrub has a well-developed edge with scattered scrub and tall grassland and or tall forbs present between the scrub and adjacent habitat.
- There are clearings, glades or rides present within the scrub, providing sheltered edges.

Ground Preparation

3.4 Based on the existing habitat, ground preparation will be subject to soil inversion. Fertile topsoil is buried, and infertile subsoil is brought to the surface, resulting in a significant reduction in nutrient levels at the soil surface for at least five years.

Planting

3.5 Planting will utilise whips. Whips are susceptible to browsing pressure and damage from voles, rabbits, grey squirrels and deer. A combination of deer culling, tree shelters, tree tubes and/or fencing will be undertaken to protect scrub from browsing pressure and ensure successful initiation. New whips will be watered for the first two weeks to ensure establishment.

Initial Management

3.6 Unwanted plants (such as bramble) should be selectively removed from the scrub.

Ongoing Management

3.7 The section of the scrub will be allowed to develop a graded edge against adjoining grassland habitat to form additional ecological niches for a wide variety of wildlife. As such, management will include a two-year cutting cycle, with light trimming on the scrub edge to prevent meaningful encroachment. Cutting will be undertaken to encourage a good structure and will avoid the nesting bird season (March – September, inclusive) or immediately follow a nesting bird check by a suitably qualified ecologist.

3.8 The scrub may need to be coppiced to improve the structure. The scrub will be managed to be approximately 4-5m in height and after five years the scrub planting will be subject to management, including selective thinning to create open space within the scrub to allow natural regeneration. See Table 2 for the full management schedule.

Table 2: Mixed Scrub Management

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11+
Water native scrub as required to ensure satisfactory establishment, and for a period of not less than two years after planting. Frequency: as required to maintain healthy plant growth.	Habitat representative of UKHab type. There are at least three native woody species with no single species comprising more than 75% of the cover (except common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens*, which can be up to 100% cover). To ensure sustained shrub growth To conserve the 'layered effect' of vegetation in the local landscape	✓		
Scrub planting should be inspected every 3 months to ensure that scrub plants are healthy, not diseased, damaged, or dead. Formative pruning as required. Dead or unhealthy shrubs should be removed on inspection and replaced with the same species and size as required to achieve the desired visual effect. • Frequency of inspections: 3 monthly • Frequency of remedial work: immediately as required. • Frequency of seasonal remedial pruning works: Pruning at the end of plant flowering seasons (spring to autumn) as required		✓		
Any species which die, become diseased or seriously defected within the first 5 years should be replaced like for like in the first available planting season. Tree replacement should be undertaken as required in early spring or late autumn.	Establishment of the habitat	✓		
Yearly pruning should be conducted between January and March based on findings of inspections. Formative pruning as required. Emergency pruning should be conducted immediately when a critical fault is noticed.	There are clearings, glades or rides present within the scrub, providing sheltered edges.	✓	✓	✓
Sensitive facing up of the edge of the scrub by trimming back the edge nearest the grassland to prevent encroachment. This should be carried out sensitively every two years.	Developing the edges of the scrub and grassland			
Invasive and non-native species to be removed • Frequency of weed removal: fortnightly from spring to autumn	There is an absence of invasive non-native plant species (as listed on Schedule 9 of	✓	✓	✓

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11+
and then monthly during the winter months; • Frequency of debris removal: bimonthly • Frequency of mulch replenishing: every 6 months	WCA) and undesirable species make up less than 5% of ground cover.			

Remedial Actions

3.9 Should the scrub monitoring indicate that the condition score is declining, arboriculture specialist advice will be sought, and appropriate actions taken to re-establish the scrub conditions as per the bullet points above. Supplementary planting of native woody species will be carried out if the coppicing/thinning management regime is not sufficient to allow natural regeneration.

4.0 NEUTRAL GRASSLAND

4.1 To ensure neutral grassland is created and maintained appropriately, the UKHab definition and species mix have been detailed below.

Definition

4.2 The UKHab definition for neutral grassland (g3c) is a grassland that supports over 20% broadleaved herbs and sedges, over 8 species per m2 and grassland species that is not generally sown for intensive agricultural production and that cover of rye grasses and white clover would be less than 30%.

4.3 The aim for the management of the new grassland habitats is to a condition assessment score of **Moderate** within 30 years. To do this, at least three of the following must be met:

- Ensure at over 8 species per m^2
- Sward height variable with 20% of the sward less than 7cm and 20% or more greater than 7cm creating microclimates;
- Cover of bracken less than 20% and bramble scrub less than 5%
- Combined cover of species indicative of sub-optimal condition[3] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.

Ground Preparation

4.4 Based on the existing habitat, ground preparation will be subject to soil inversion. Fertile topsoil is buried, and infertile subsoil is brought to the surface, resulting in a significant reduction in nutrient levels at the soil surface for at least five years.

Planting

4.5 The ground will be prepared before the new turf is laid. Turf will be laid in the Autumn or Spring. Regular watering is required to ensure the grassland is established. If seeded, the seeding will be undertaken in the spring or autumn.

Initial Management

4.6 During the 1st year of establishment meadow grassland will be cut twice in each growing month to maintain a balance between the faster growing species and flowers. The grassland will be mown to a height of 40-60mm with arisings cleared from the site.

4.7 In following seasons prior to cutting all areas shall be cleared of litter and debris in accordance with the section detailed above. To maintain diversity, all meadow grass areas will be cut annually in late July to end of August following flowering (the summer hay cut). An autumn cut will be carried out in November to leave the grass short over the winter period (cut to 40-75mm). If required a spring cut should be carried out prior to the end of May to remove the first flush of grass (cut to 40-75mm). All arisings should be left in situ for 48 to 72 hours prior to removal.

4.8 The diversity of the grassland should be subject to on-going monitoring to ensure maximum ecological benefit. The monitoring of the grassland will be undertaken by the management company and should include a review of a suitably qualified ecologist against the baseline and the aspired condition. Monitoring by an ecologist should occur in years 1,2,5,10,15,20,25 and 30..

4.9 No selective herbicides will be used within these grassland areas. Instead, pernicious weeds (for example, dock and thistle) will be removed by hand, or burnt. All arisings should be left in situ for 48 to 72 hours prior to removal. Any litter will be removed prior to each cut, and leaves will be raked off grass prior to autumn cuts.

Table 3: Wildflower Grass Management

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11+
Year 1: scarify in autumn and sow suitable native wildflower mix. Cut to a height of 50 – 75 mm four times during the first year to encourage wildflower root development. All arising should be removed. Repeat as required for 3 to 5 years to establish wildflower content. Spot treat or hand-pull undesirable weed species. Minimise chemical use.	To achieve sward establishment to 95% cover To achieve floristically diverse sward content, providing colour and seasonal variety for visitors and habitat for insects and birds. Control invasive weed species (by cutting prior to seed set)	✓	✓	
Post establishment: The wildflower meadow should be cut once per year to between 40 and 70mm (late August/ September for summer flowering meadow or July for spring flowering). However, subject to the results of monitoring, an additional cut in late March may be carried out, especially in the first few years following establishment. This measure would help control the vigour of the sward, especially of the bulkier grasses, and would encourage greater species richness. All arisings should be left in situ for 48 to 72 hours prior to removal. Minimise chemical use.	To ensure floristically diverse sward content and control invasive weed species	✓	✓	✓
Monitoring every 5 years by a suitably qualified person to review the grassland condition. This will then review management techniques.	To monitor floristically diverse sward	✓	✓	✓

Remedial Actions

4.10 Should the grassland monitoring indicate that the condition score is not reaching requirement, weeds will be targeted and cleared from the habitat, and channels of bare ground created for additional supplementary seeding using the mixes above. The above management plan should then be followed from the beginning to allow re-establishment. If these actions are not sufficient, specialist advice will be sought

5.0 NEUTRAL GRASSLAND / SUDS /SWALE

5.1 To ensure neutral grassland is created and maintained appropriately, the UKHab definition and species mix have been detailed below.

Definition

5.2 The UKHab definition for neutral grassland (g3c) is a grassland that supports over 20% broadleaved herbs and sedges, over 8 species per m2 and grassland species that is not generally sown for intensive agricultural production and that cover of rye grasses and white clover would be less than 30%.

5.3 The aim for the management of the new grassland habitats is to a condition assessment score of **Moderate** within 30 years. To do this, at least three of the following must be met:

- Ensure at over 8 species per m^2
- Sward height variable with 20% of the sward less than 7cm and 20% or more greater than 7cm creating microclimates;
- Cover of bracken less than 20% and bramble scrub less than 5%
- Combined cover of species indicative of sub-optimal condition[3] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.

Ground Preparation

5.4 Based on the existing habitat, ground preparation will be subject to soil inversion. Fertile topsoil is buried, and infertile subsoil is brought to the surface, resulting in a significant reduction in nutrient levels at the soil surface for at least five years.

Planting

5.5 A wet grassland mixture should be sown following the guidelines of the supplier, however this would be approximately 4g / M2. Seeds should be scattered and not drilled like a crop, and this scattering of the seed follows a more naturalised process.

Initial Management

5.6 During the 1st year of establishment meadow grassland will be cut twice in each growing month to maintain a balance between the faster growing species and flowers. The grassland will be mown to a height of 40-60mm with arisings cleared from the site.

5.7 In following seasons prior to cutting all areas shall be cleared of litter and debris in accordance with the section detailed above. To maintain diversity, all meadow grass areas

will be cut annually in late July to end of August following flowering (the summer hay cut). An autumn cut will be carried out in November to leave the grass short over the winter period (cut to 40-75mm). If required a spring cut should be carried out prior to the end of May to remove the first flush of grass (cut to 40-75mm). All arisings should be left in situ for 48 to 72 hours prior to removal.

5.8 The diversity of the grassland should be subject to on-going monitoring to ensure maximum ecological benefit. The monitoring of the grassland will be undertaken by the management company and should include a review of a suitably qualified ecologist against the baseline and the aspired condition. Monitoring by an ecologist should occur every 5 years.

5.9 No selective herbicides will be used within these grassland areas. Instead, pernicious weeds (for example, dock and thistle) will be removed by hand, or burnt. All arisings will be removed from site, immediately after cutting. Any litter will be removed prior to each cut, and leaves will be raked off grass prior to autumn cuts.

5.10 The attenuation swale will be managed in accordance with CIRIA SUDs Manual C753. At each maintenance visit the Contractor will inspect the SUDS facility and remove any branches and leaf debris and/or any other object that are likely to restrict water flow/capacity. All areas will be inspected and cleared of litter and other debris in accordance with the details set out above. The Contractor will inspect all outfall features, check grilles (if present), and remove any obstructions. Excess silt is to be removed from the base of facilities to maintain volume capacity and safeguard functionality of the balancing ponds themselves as necessary.

Table 4: Wildflower Grass Management / SUDS / SWALE

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11+
Year 1: scarify in autumn and sow suitable native wildflower mix. Cut to a height of 50 – 75 mm four times during the first year to encourage wildflower root development. All arising should be removed.	To achieve sward establishment to 95% cover To achieve floristically diverse sward content, providing colour and seasonal variety for visitors	✓	✓	

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11+
Repeat as required for 3 to 5 years to establish wildflower content. Spot treat or hand-pull undesirable weed species. Minimise chemical use.	and habitat for insects and birds. Control invasive weed species (by cutting prior to seed set)			
Post establishment: The wildflower meadow should be cut once per year to between 40 and 70mm (late August/ September for summer flowering meadow or July for spring flowering). However, subject to the results of monitoring, an additional cut in late March may be carried out, especially in the first few years following establishment. This measure would help control the vigour of the sward, especially of the bulkier grasses, and would encourage greater species richness. All arisings should be left in situ for 48 to 72 hours prior to removal. Minimise chemical use.	To ensure floristically diverse sward content and control invasive weed species	✓	✓	✓
Cut back vegetation as required in autumn to ensure optimum functioning and free flow of water.	To maintain structures as safe and fit for sustainable drainage function	✓	✓	✓
Inspections should be undertaken on a minimum basis of once a month, particularly during the vegetation establishment period and after significant storm events to identify areas of erosion, locations of silt deposits, and health of the vegetation and soil. Undertake any repairs/maintenance as required.	To maintain structures as safe and fit for sustainable drainage function	✓	✓	✓
Monitoring every 5 years by a suitably qualified person to review the grassland condition. This will then review management techniques.	To monitor floristically diverse sward	✓	✓	✓

Remedial Actions

5.11 Should the grassland monitoring indicate that the condition score is not reaching requirement, weeds will be targeted and cleared from the habitat, and channels of bare ground created for additional supplementary seeding using the mixes above. The above management plan should then be followed from the beginning to allow re-establishment. If these actions are not sufficient, specialist advice will be sought

6.0 ORCHARD

6.1 To ensure traditional orchard is created and maintained appropriately, the UKHab definition and species mix have been detailed below.

Definition

6.2 An open-grown fruit trees within herbaceous vegetation. The defining feature is habitat structure, rather than vegetation type, topography or soils. Traditional orchards are open-grown trees set in herbaceous vegetation, with species composition of the trees being primarily in the Rosaceae family. The minimum number of trees is 5.

6.3 The aim for the management of the new grassland habitats is to a condition assessment score of **Moderate** within 30 years. To do this, at least three of the following must be met:

- Less than 5% of fruit trees are smothered by scrub. Small patches of dense scrub and or scattered scrub growing between trees can be beneficial to biodiversity, however these occupy less than 10% of ground cover.
- There is evidence of formative and or restorative pruning to maintain longevity of trees.
- At least 95% of the trees are free from damage caused by humans or animals, for example browsing, bark stripping or rubbing on non-adjusted ties.
- Grassland is not overgrazed, poaching is not evident around the trees, with no more than 10% of trees poached under the canopy.
- Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland.
- There is an absence of invasive non-native plant species[2] (as listed on Schedule 9 of WCA[3]) and species indicative of sub-optimal condition[4] make up less than 10% of ground cover.

Planting

6.4 A species rich grassland mixture should be sown following the guidelines of the supplier, however this would be approximately 4g / M2. Seeds should be scattered and not drilled like a crop, and this scattering of the seed follows a more naturalised process.

6.5 The fruit trees should be planted within the grassland. Planting will utilise saplings to ensure condition assessment scores are met.

6.6 Saplings are susceptible to browsing pressure and damage from voles, rabbits, grey squirrels and deer. A combination of deer culling, tree shelters, tree tubes and/or fencing will be undertaken to protect trees from browsing pressure and ensure successful initiation.

6.7 New saplings will be watered for the first two weeks to ensure establishment.

Initial Management

6.8 During the 1st year of establishment meadow grassland will be cut twice in each growing month to maintain a balance between the faster growing species and flowers. The grassland will be mown to a height of 40-60mm with arisings cleared from the site. The grassland will be managed as per neutral grassland habitat management. The individual fruit trees will be managed as individual trees – see below.

6.9 The diversity of the grassland should be subject to on-going monitoring to ensure maximum ecological benefit. The heath of the fruit trees will be managed to maximise their benefit. The monitoring of the grassland will be undertaken by the management company and should include a review of a suitably qualified ecologist against the baseline and the aspired condition. Monitoring by an ecologist should occur in years 1,2,5,10,15,20,25 and 30..

Table 5: Orchard management actions and prescribed works schedule.

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11 - 30
The surrounding grassland should be planted with an Emorsgate EL2 General Purpose Meadow Mix, or similar, as agreed with the council ecologist. This should be done in autumn or spring. Water trees and scrub as required to ensure satisfactory establishment, and for a period of no less than two years after planting. Frequency: as required to maintain healthy plant growth.	Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland. To ensure sustained tree and shrub growth To conserve the 'layered effect' of vegetation in the local landscape	✓		
Trees should be inspected every 3 months for the first two years of the plan to ensure that trees are healthy, not diseased, damaged, or dead. Inspection to identify	At least 95% of the trees are free from damage caused by humans or animals, for example browsing, bark stripping or rubbing on non-adjusted ties.	✓		

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11 - 30
any dead limbs or other parts of a tree that may cause harm to the tree or a member of the public.				
Establishment maintenance for new trees (maintenance of tree stakes, ties, guys and guards). Once established any guards and stakes should be removed and taken off-site and disposed of responsibly. Tree guards will be biodegradable.	Establishment of trees	✓	✓	✓
Any species which die, become diseased or seriously defected within the first 5 years should be replaced like for like in the first available planting season. Tree replacement should be undertaken as required in early spring or late autumn.	Establishment of habitat	✓	✓	✓
Yearly pruning should be conducted between January and March based on findings of inspections. Formative pruning as required. Emergency pruning should be conducted immediately when a critical fault is noticed.	There is evidence of formative and or restorative pruning to maintain longevity of trees.	✓	✓	✓
Mow the 'orchard' area (i.e. around the fruit trees) fully in March/April, then leave the grass to grow long to protect the fruit trees until they are ripe or have been picked in October. Arisings to be removed following cut	Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland.	✓	✓	✓
Monitor the orchard area during summer and mow nettle and bramble patches selectively as needed – in blocks rather than as a single whole.	Less than 5% of fruit trees are smothered by scrub. Small patches of dense scrub and scattered scrub growing between trees can be beneficial to biodiversity, however these occupy less than 10% of ground cover.	✓	✓	✓

Remedial Actions

6.10 Should the tree monitoring indicate that their condition is declining, arboriculture specialist advice will be sought, and appropriate actions taken to re-establish the tree conditions. The grassland monitoring indicate that the condition score is not reaching requirement, weeds will be targeted and cleared from the habitat, and channels of bare ground created for additional supplementary seeding using the mixes above. The above management plan should then be followed from the beginning to allow re-establishment. If these actions are not sufficient, specialist advice will be sought

7.0 INDIVIDUAL/RURAL TREES

7.1 The rural trees need to achieve at least a **moderate** condition within 30 years. Therefore, at least three of the following conditions must be met over 30 years to ensure this condition:

- Planting native tree species.
- The tree canopy is continuous (individual trees automatically pass this criterion).
- Allowing the trees to develop to maturity.
- Preventing adverse impact on tree health by human activities (such as vandalism, or herbicide). And there is no regular pruning regime, so the trees retain >75% of expected canopy for their age and height.
- Natural ecological niches for vertebrates and invertebrates are allowed to establish, such as deadwood, cavities, ivy or loose bark.
- More than 20% of the tree canopy area is oversailing vegetation beneath.

Ground Preparation

7.2 The existing habitat will be subject to soil inversion. Fertile topsoil is buried, and infertile subsoil is brought to the surface, resulting in a significant reduction in nutrient levels at the soil surface for at least five years.

Planting

7.3 Planting will utilise saplings to ensure condition assessment scores are met.

7.4 Saplings are susceptible to browsing pressure and damage from voles, rabbits, grey squirrels and deer. A combination of deer culling, tree shelters, tree tubes and/or fencing will be undertaken to protect trees from browsing pressure and ensure successful initiation.

7.5 New saplings will be watered for the first two weeks to ensure establishment.

Initial Management - Vegetation Control

7.6 This involves measures such as watering, weeding around the base, bark mulching, tree guard checks, and replacement planting for failed specimens.

7.7 Tree growth may be suppressed by other plants competing for moisture, nutrients and light. The vegetation surrounding a tree can also affect the likelihood of damage by small mammals, as dense grass provides ideal cover for voles which can 'ring-bark' and kill young trees.

7.8 High light levels favour competitive plants, such as tall, dense grasses and bracken, and their control will be necessary. Vegetation control encourages stronger growth of trees and shrubs, and their more rapid and reliable establishment. Vegetation control may be required for first two years.

7.9 Mowing or strimming around trees prevents tall, dense vegetation from collapsing onto, and crushing, small saplings especially, when wet. Forestry practice often encourages mowing of grass areas between 'weeded' patches to reduce seeding into the weed-free areas. Mowing, however, can result in dominance of grasses which compete with trees, and it can cause ground compaction and direct damage to young stems. Mowing or strimming should be used only where there is a high risk of tall vegetation collapsing onto young trees.

Mulching

7.10 Mulching offers an effective alternative to herbicide treatment. There are a variety of organic and synthetic sheet mats as well as biodegradable materials that can be spread on the ground, providing options for different site conditions and budgets. Biodegradable materials include straw, bark, wood chip, wool fleece and paper slurry. Mulches need to be in place for at least three years (initial applications may need topping up) and cover a circular area with a diameter of at least 1.2 metres around each tree.

Ongoing Management

7.11 Trees should be managed sensitively as far as possible and so allowed to approach their natural expected canopy. Although it is accepted that additional pruning may be required for safety. Additional protective measures structures may be required if monitoring reveals vandalism and herbicide are impacting any of the trees. Replacement trees will be planted 1:1 in the case that any of them fail. See Table 7 for the full management schedule.

Table 6: Individual Tree Management

Task	Management Objective / Condition Assessment Criteria	Installation	Years 1-5	Years 5-10	Years 11-30
Planted trees should be a native species and one which is known for rapid growth. Suitable species include:	Ensures the trees are native and therefore of maximum ecological value and meet the required assessment criteria. Fast growing species are required to ensure they will grow to a suitable size within the required 30-year timeframe.	✓			
Trees planted should be a minimum of 12-14cm in girth (heavy standard).	A suitable size will be needed to ensure the trees will grow to a suitable size within the required 30-year timeframe.	✓			
Trees should be planted in areas where their canopies can over sail some form of vegetative groundcover.	Ensures the tree is planted in a suitably vegetated area to maximize ecological value and fulfil the condition.	✓			
Establishment maintenance for new trees (maintenance of tree stakes, ties, guys and guards). Once established any guards and stakes should be removed and taken off-site and disposed of responsibly. Tree guards will be biodegradable.	To successful establish trees and maintain general tree health, thus working towards target size.		✓		
Water trees as required to ensure satisfactory establishment, and for a period of not less than two years after planting. Frequency: as required to maintain healthy plant growth.	To maintain general tree health and maintain growth towards target size.		✓	✓	✓
Trees should be inspected every 3 months for the first two years of the plan to ensure that trees are healthy, not diseased, damaged, or dead. Inspection to identify any dead limbs or other parts of a tree that may cause harm to the tree or a member of the public. Limit pruning exclusively to those limbs which may otherwise fall and cause injury etc.	To maintain general tree health and maintain growth towards target size. Limits the risk to public health posed by falling deadwood etc. Limits human impacts to the tree to only those necessary for human health and ensures it maintains at least 75% natural growth form.		✓	✓	✓
Any species which die, become diseased or seriously defected within	To ensure trees are consistently present where planned, maximizing		✓	✓	✓

the first 5 years should be replaced like for like in the first available planting season. Tree replacement should be undertaken as required in early spring or late autumn.	their ability to be present and provide ecological and amenity value.				

Remedial Actions

7.12 Should the tree monitoring indicate that their condition is declining, arboriculture specialist advice will be sought, and appropriate actions taken to re-establish the tree conditions as per the bullet points above. Supplementary planting of trees will be carried out if the management regime is not sufficient to allow natural regeneration.

8.0 HEDGEROWS

Definition

8.1 A hedgerow with over 80% canopy cover of UK native or archaeophyte woody species.

Ground Preparation

8.2 The existing habitat will be subject to soil inversion. Fertile topsoil is buried, and infertile subsoil is brought to the surface, resulting in a significant reduction in nutrient levels at the soil surface for at least five years.

Planting

8.3 Planting will utilise saplings to ensure condition assessment scores are met. These will be planted at a spacing of 20-30cm double planting, approximately 6 plants for every metre of hedge.

8.4 Saplings are susceptible to browsing pressure and damage from voles, rabbits, grey squirrels and deer. A combination of tree shelters, tree tubes and/or fencing will be undertaken to protect trees from browsing pressure and ensure successful initiation. New saplings will be watered for the first two weeks to ensure establishment.

Initial Management - Vegetation Control

8.5 This involves measures such as watering, weeding around the base, bark mulching, tree guard checks, and replacement planting for failed specimens.

8.6 High light levels favour competitive plants, such as tall, dense grasses and bracken, and their control will be necessary. Vegetation control encourages stronger growth of trees and shrubs, and their more rapid and reliable establishment. Vegetation control may be required for first two years.

8.7 Mowing or strimming around hedgerow prevents tall, dense vegetation from collapsing onto, and crushing, small saplings especially, when wet. Mowing or strimming should be used only where there is a high risk of tall vegetation collapsing onto young trees.

Mulching

8.8 Mulching offers an effective alternative to herbicide treatment. There are a variety of organic and synthetic sheet mats as well as biodegradable materials that can be spread on the ground, providing options for different site conditions and budgets. Biodegradable materials include straw, bark, wood chip, wool fleece and paper slurry. Mulches need to be in place for at least three years (initial applications may need topping up) and cover a circular area with a diameter of at least 1.2 metres around each sapling planted.

Ongoing Management

8.9 Sapling should be managed sensitively as far as possible and so allowed to approach their natural expected canopy. Although it is accepted that additional pruning may be required for safety. Additional protective measures structures may be required if monitoring reveals vandalism and herbicide are impacting any of the trees. Replacement trees will be planted 1:1 in the case that any of them fail. See Table 7 for the full management schedule.

Table 7: New Hedgerow Management

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11+
Establishment maintenance for new hedges: trimming, weeding, annual inspection, replacement of losses, irrigation as required, hedgerow formative pruning, thinning). Adjustment and replacement of stakes and guards as required. Replace as necessary. Plant guards to be straightened and ties checked during each inspection (at least 4 inspections during the year) and adjust to avoid chaffing and other damage. Guards and stakes to be removed at the	To ensure successful establishment	✓		

Task	Management Objective / Performance Standard	Years 1-5	Years 5-10	Years 11+
appropriate time, typically during 4th or 5th year, dependant on the mammal population.				
Trim as required to maintain neat appearance (works subject to restrictions within bird nesting season). Gap up as required in winter.		✓	✓	✓

Table 8 Management and condition targets – Mixed scrub (good)

Mixed scrub Condition Assessment Criteria		Targeted	Creation/Enhancement Approach	Management Approach
A	The parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). - At least 80% of scrub is native, - There are at least three native woody species, No single species comprising more than 75% of the cover (except hazel *Corylus avellana,* common juniper *Juniperus communis,* sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens,* which can be up to 100% cover).	**Yes**	All scrub planting will incorporate seven different native species, planted at 1.5m intervals.	Until establishment scrub will be watered as required to ensure success.
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	**Yes**	n/a	Every 10 years 30% of the scrub area will be coppiced to ground level to allow opportunities for new seedlings to emerge and create a variety of age classes in the long term.
C	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	**Yes**	Prior to planting the area will be stripped of existing vegetation and a mulch applied around the whips to supress weed growth.	Undesirable species will be controlled as required to ensure they do not exceed 5% of ground cover. Herbicides should be avoided as a treatment however.
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	**Yes**	Planting in scalloped edges	The grassland is surrounded by other neutral grassland, which will be managed tall.
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	**Yes**	Avoid planting in some area	Clearance of area to provide for glades and rides. Monitoring of glades to ensure they are still present.

Condition Assessment Result	
Good	Passes 5 of 5 criteria
Moderate	Passes 3 or 4 of 5 criteria
Poor	Passes 2 or fewer criteria

Table 9. Management and condition targets –Urban trees (moderate)

Urban trees Condition Assessment Criteria		Targeted	Creation/Enhancement Approach	Management Approach
A	The tree is a native species (or more than 70% within the block are native species).	**Yes**	All trees will be native	n/a
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).	**No**	n/a	n/a
C	The tree is mature (or more than 50% within the block are mature).	**No**	n/a	n/a
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**	Management will not impact upon tree health.	n/a
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	**No**	n/a	n/a
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	**Yes**	All trees are planted within soft landscaped areas	n/a

Condition Assessment Result	
Good	Passes 5 or 6 criteria
Moderate	Passes 3 or 4 criteria
Poor	Passes 2 or fewer criteria

Table 10. Management and condition targets – Other neutral grassland (moderate A, B, C, D**)**

Other neutral grassland Condition Assessment Criteria		Targeted	Creation/ enhancement Approach	Management Approach
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type. Note – this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	Yes	Graze/cut existing grass to ground level (and remove cuttings) in autumn. Scarify the ground and seed with EM2 seedmix at 4g/$m^{2.}$ And gently roll the area.	Starting the following March cut to *c.*30mm and collect and remove cuttings. Repeat this process in August, September and October. On all subsequent years the sward will be cut to *c.*30mm once a month in March, May August, September, and October. Ensuring a core flowering period of April to end of July.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Yes	n/a	In addition to the above management, at least 20% of the area will continue to be cut on a monthly basis throughout May, June and July, in the form of pathways or verges. be cut. Outside of these months, a buffer of at least 20% of the total grassland area along the edge scrub/woodland habitats surrounding the grassland will be left unmown.
C	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Yes	n/a	After each spring cut, the ground will be scarified to ensure between 1 and 5% of the area comprises bare ground.
D	Cover of bracken *Pteridium aquilinum* less than 20% and cover of scrub (including bramble) less than 5%.	Yes	n/a	The management described for A&B will ensure bracken and scrub remain below these thresholds.
E	Combined cover of species indicative of suboptimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging activities) accounts for less than 5% of total area. If any invasive non-native species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.	Yes	n/a	The above management will help supress certain undesirable species.
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type.	No	The proposed seed mix, includes at least 14 different species.	The above management will help maintain species-richness., although it may not be possible for all areas to maintain above a species richness of 10 species/m^2.

Condition Assessment Result	
Good	Passes 5 of 6 criteria, including essential criterion A and F
Moderate	Passes 3 or 3 of 6 criteria, including essential criterion A
Poor	Passes 0, 1, 2, criteria of 6

Table 11. Management and condition targets – Native Hedgerows (moderate A, B, C, D**)**

Native hedgerow Condition Assessment Criteria	Targeted	Creation/ enhancement Approach	Management Approach
Height >1.5 m average along length	Yes	Double planting, use of native species	Establishment maintenance for new hedges: trimming, weeding, annual inspection, replacement of losses, irrigation as required, hedgerow formative pruning, thinning). Adjustment and replacement of stakes and guards as required. Replace as necessary.
Width >1.5 m average along length	Yes	Double planting, use of native species	Establishment maintenance for new hedges: trimming, weeding, annual inspection, replacement of losses, irrigation as required, hedgerow formative pruning, thinning). Adjustment and replacement of stakes and guards as required. Replace as necessary.
Gap – hedge base Gap between ground and base of canopy <0.5 m for >90% of length	Yes	Double planting, use of native species	Establishment maintenance for new hedges: trimming, weeding, annual inspection, replacement of losses, irrigation as required, hedgerow formative pruning, thinning). Adjustment and replacement of stakes and guards as required. Replace as necessary.
Gap – hedge canopy continuity Gaps make up <10% of total length and No canopy gaps >5 m	Yes	Double planting, use of native species	Establishment maintenance for new hedges: trimming, weeding, annual inspection, replacement of losses, irrigation as required, hedgerow formative pruning, thinning). Adjustment and replacement of stakes and guards as required. Replace as necessary.
Undisturbed perennial vegetation >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length (on one side of the hedge (at least))	Yes	Seeded with neutral grassland	Management of species rich grassland
Undesirable species Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	No	N/A	N/A
Invasive species >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.	Yes	Seeded with neutral grassland	Management of species rich grassland

Current Damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	No	N/A	N/A

Condition Assessment Result	
Good	No more than 2 failures in total; AND No more than 1 in any functional group.
Moderate	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).

Table 12. Management and condition targets – Orchard Habitat (moderate A, B, C, D**)**

	Other neutral grassland Condition Assessment Criteria	Targeted	Creation/ enhancement Approach	Management Approach
A	Presence of ancient[1] and / or veteran[2] trees. **NB - this criterion is essential for achieving Good condition.**	No	n/a	n/
B	Presence of deadwood in or on trees, or on the ground: at least 20% of mature trees have deadwood associated with them. Some examples of deadwood are: standing, attached and fallen trees or limbs; dead stems; branches and branch stubs greater than 10 cm diameter; and internal cavities. The types and distribution of deadwood provide a range of habitats suitable to support a wide assemblage of saproxylic invertebrates. **Note - this criterion is essential for achieving Good condition.**	No	n/a	n/a
C	Less than 5% of fruit trees are smothered by scrub. Small patches of dense scrub and or scattered scrub growing between trees can be beneficial to biodiversity, however these occupy less than 10% of ground cover.	Yes	Native scrub edges and pockets of bramble allowed	Scrub will be managed to ensure that this is 10% ground cover
D	There is evidence of formative and or restorative pruning to maintain longevity of trees.	Yes	Monitoring of tree health	The management will ensure no impact on the trees form
E	At least 95% of the trees are free from damage caused by humans or animals, for example browsing, bark stripping or rubbing on non-adjusted ties.	Yes	Monitoring of tree health	The trees heath will be monitored for health.
F	Grassland is not overgrazed, poaching is not evident around the trees, with no more than 10% of trees poached under the canopy.	Yes	No grazing	No grazing grassland management through mowing
G	Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland.	Yes	The proposed seed mix, includes at least 14 different species.	Starting the following March cut to *c.*30mm and collect and remove cuttings. Repeat this process in August, September and October. On all subsequent years the sward will be cut to *c.*30mm once a month in March, May August, September, and October. Ensuring a core flowering period of April to end of July.

H	There is an absence of invasive non-native plant species[2] (as listed on Schedule 9 of WCA[3]) and species indicative of sub-optimal condition[4] make up less than 10% of ground cover.	Yes	Monitoring of grassland condition	Management through mowing and monitoring of the grassland. Mowing regimes and hand weeding if requried

Condition Assessment Result	
Good	Passes 5 of 6 criteria, including essential criterion A and F
Moderate	Passes 3 or 3 of 6 criteria, including essential criterion A
Poor	Passes 0, 1, 2, criteria of 6

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