

PIPPLEPEN SOLAR FARM

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN (LEMP)

ScottishPower Renewables (UK) Ltd A report from RSK Wilding



General notes

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1 Introduction

1.1 Background

- 1.1.1 Pipplepen Solar Farm, herein referred to as 'the Development', was granted planning permission by Somerset Council in 2023 subject to conditions.
- 1.1.2 Planning Condition 20 stated that the submitted Landscape and Ecological Management Plan (LEMP) required more information. The wording of the planning condition is included below for reference:

A Landscape and Ecological Management Plan (LEMP) shall be submitted to, and be approved in writing by, the Local Planning Authority prior to the commencement of the development [or specified phase of development. The content of the LEMP shall include the following:

a. Description and evaluation of features to be managed.

b. Ecological trends and constraints on site that might influence management.

- c. Aims and objectives of management.
- d. Appropriate management options for achieving aims and objectives.
- e. Prescriptions for management actions.

f. Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period).

g. Details of the body or organization responsible for implementation of the plan.

h. On-going monitoring and remedial measures.

The LEMP shall also include details of the legal and funding mechanism(s) by which the long-term implementation of the plan will be secured by the developer with the management body(ies) responsible for its delivery. The plan shall also set out (where the results from monitoring show that conservation aims and objectives of the LEMP are not being met) how contingencies and/or remedial action will be identified, agreed and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally approved scheme. The approved plan will be implemented in accordance with the approved details.

Reason: In the interests of the 'Favourable Conservation Status' of populations of European and UK protected species, UK priority species and habitats listed on s41 of the Natural Environment and Rural Communities Act 2006 and in accordance with South Somerset District Council Local Plan policies EQ4, EQ5 and EQ6, and the NPPF.

1.1.3 The existing LEMP was produced as part of the initial application (RPS Group Plc, 2022a). This document has been prepared by RSK Wilding on behalf of ScottishPower Renewables (UK) Ltd (SPR) and comprises a revised LEMP, which builds on the initial proposals aiming to discharge Condition 20.

1.2 Scope of this document

- 1.2.1 This LEMP provides detailed information on the proposed ecological features that will be retained, enhanced or created on site through the development and how they would be delivered and managed for 30 years.
- 1.2.2 Condition 20 is guided by the British Standards institute (BSI) Standards Publication 42020:3012 (BSI, 2013), which sets out recommended LEMP content. The recommended

content from the BSI is shown in Table 1, along with the relevant Sections in this document where the necessary information is captured.

Table 1 Recommended LEMP content

Recommended LEMP Content (BSI, 2013)	Section in this document which contains the necessary information
Description and evaluation of features to be managed.	Section 3 – Description and evaluation of proposed ecological features.
Ecological trends and constraints on site that might influence management.	Section 6 – Factors that might influence management of proposed ecological features.
Aims and objectives of management	Section 4 – Target habitats and management objectives.
Appropriate management options for achieving aims and objectives	Section 4 – Target habitats and management objectives.
Prescriptions for management actions	Section 7 – LEMP delivery
Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period).	Section 7 – LEMP delivery
Details of the body or organization responsible for implementation of the plan.	Section 8 – Responsibilities and agreements
Details of the legal and funding mechanism(s) by which the long-term implementation of the plan will be secured.	Section 8 – Responsibilities and agreements
Ongoing monitoring and remedial measures	Section 9 – Monitoring and remedial measures

- 1.2.3 This LEMP is further guided by biodiversity net gain guidance (Defra, 2023) to ensure that the proposed ecological features presented in this report deliver the percentage (%) net gain that is promised.
- 1.2.4 The BNG assessment was updated in line with additions to this LEMP. The results of this re-assessment are presented in Section 5
- 1.2.5 This document should be read alongside the Construction Environmental Management Plan (CEMP) (Construction Environmental Management Plan: Biodiversity, document reference: ECO01128)
- 1.2.6 The CEMP sets out measures to ensure that environmental effects of the construction activities are mitigated. As such, these measures are not repeated here.

2 Site Context

2.1 The Development

- 2.1.1 Full details of the Development are presented within the Planning Statement which accompanied the planning application to Somerset Council (RPS Group Plc, 2021).
- 2.1.2 The development site, herein referred to as 'the Site' is located in the south of South Somerset, approximately 2 kilometres (km) to the east of Misterton, 1 km south of North Perrott and o.8 km north of South Perrott, on land at Pipplepen Farm, School Hill, Crewkerne. The Site comprises mainly agricultural farmland including a number of small field parcels over an area of approximately 55 hectares (ha). A Public Right of Way (PRoW) crosses the centre of the Site, running north to south. Another PRoW runs adjacent to the western boundary, along Wood Lane.
- 2.1.3 Solar panels are to be installed within the existing dairy pasture. The panels would be fixed in place with posts approximately 1.5 metres (m) deep or by concrete bases.
- 2.1.4 Inverter substations would also be installed into each field and access roads would be constructed between them, largely utilising existing farm tracks.
- 2.1.5 Temporary construction access to the Site would be from the south, utilising the existing farm tracks from the A356 east of South Perrott. The track will require construction using a crushed rock/aggregate base laid over cleared ground. It will not require significant additional widening.
- 2.1.6 Operational and maintenance access would be via the shorter track from Pipplepen Lane to the west.

2.2 Ecological Baseline

2.2.1 The full ecological baseline of the Site (before development) and evaluation of potential impacts is captured within the Preliminary Ecological Appraisal (PEA) (RPS Group Plc, 2020) and Ecological Addendum (RPS Group Plc, 2022b). Information on baseline habitats and species is provided below to give context to the proposed ecological features.

Habitats

- 2.2.2 The baseline habitats recorded on site during the PEA (RPS Group Plc, 2020) are presented in Table 2. These were initially mapped using the Phase 1 Habitat Survey methodology (JNCC, 2010) however these have been translated to the UK Habitat Classification System (UKHab ltd, 2023) to align with the re-valuation using the Statutory Metric and proposed management objectives presented within this LEMP. The baseline habitats are displayed on Figure 1, Appendix A.
- 2.2.3 Baseline condition is informed by PEA (RPS Group Plc, 2020), the addendum (RPS Group Plc, 2022b) and the initial Biodiversity Net Gain (BNG) assessment (RPS Group Plc, 2022c).

Table 2 Baseline habitats

UK Habitat Classification	Habitat Condition	Description
Modified grassland	Poor	The majority of the grassland across the Site was improved for grazing, dominated by Perennial Rye-grass (<i>Lolium perenne</i>) with White Clover (<i>Trifolium repens</i>). Broad-leaved Dock (<i>Rumex obtusifolius</i>), Daisy (<i>Bellis perennis</i>), Creeping Thistle (<i>Cirsium arvense</i>) and Spear Thistle (<i>C. vulgare</i>). Dandelion (<i>Taraxacum officinale</i> agg.) and Creeping Buttercup (<i>Ranunculus repens</i>) were also present.
		The north-east and north-west fields adjacent to the railway were wetter and supported species such as Pendulous Sedge (<i>Carex pendula</i>) and Hard Rush (<i>Juncus inflexus</i>).
Lowland mixed deciduous woodland	Good	Open woodland dominated by Pedunculate Oak (<i>Quercus robur</i>), and Ash (<i>Fraxinius excelsior</i>), with Field Maple (<i>Acer campestre</i>), willows (<i>Salix</i> spp.), and occasional Grey Poplar (<i>Populus canescens</i>) and Elm (<i>Ulmus procera</i>). Understorey included frequent Hazel (<i>Corylus avellana</i>), Hawthorn (<i>Crataegus monogyna</i>), with occasional Holly (<i>Ilex aquifolia</i>), Elder (<i>Sambucus nigra</i>) and Blackthorn (<i>Prunus spinosa</i>). Ground flora species included Lord's-and-ladies (<i>Arum maculatum</i>), Dog's Mercury (<i>Mercurialis perennis</i>), Bluebell (<i>Hyacinthoides non-scripta</i>), Ramsons (<i>Alium ursinum</i>), Dog Violets (<i>Viola riviniana</i>), Lesser Celandine (<i>Ficaria verna</i>), Primrose (<i>Primula vulgaris</i>), Hart's-tongue Fern (<i>Asplenium scolopendrium</i>), Common Polypody (<i>Polypodium vulgare</i>). Ivy (<i>Hedera helix</i>), Dog Rose (<i>Rosa canina</i>). Bramble (<i>Rubus fruticosus</i> agg.), Pendulous Sedge and Common Nettle (<i>Urtica dioica</i>) also occurred frequently. This is considered to be a habitat of principal importance under Section 41 of the Natural Environment Rural Communities (NERC) Act 2006.
Other broadleaved woodland	Good	Two areas of other woodland were identified, one in the north-east of the site along the road, and the other in the south-west of the site. Both areas are not considered to be priority habitat.
Native species- rich hedgerow with trees	Moderate	These hedges consisted of rather wide and slightly gappy, under-managed hedges, with a number of woody species present, such as willows, Pedunculate Oak, Ash, Field Maple and Elm, with frequent Hawthorn, Blackthorn, Hazel and Elder. Ground flora tended to be rather limited in diversity, often dominated by Ivy, but frequently limited to Bramble and ruderals, especially in areas where cattle grazing pressure was higher. Hedges were "leggy in many places (i.e. woody vegetation less dense at ground and lower levels, and in a number of places cattle had pushed into the hedges, forming areas which were largely bare ground at base, but covered with canopy from hedgerow trees. This is considered to be a habitat of principal importance under Section 41 of the NERC Act 2006.
Native hedgerow with trees	Moderate	Many of the hedgerows across the site were of hawthorn, with occasional other species such as hazel, blackthorn and elm. Bramble was common and ground flora often dominated by ivy, with common nettle and other ruderals also present. Hedges were often associated with ditches, many being permanently dry. No substantial banks were noted. As with species-rich hedgerows, the species -poor hedges were "leggy" in some places and had some loss of ground flora from grazing pressure. This is considered to be a habitat of principal importance under Section 41 of the NERC Act 2006.
Individual trees	Not assessed – assumed Moderate	Standalone trees were noted through the site. These were recorded on the Phase 1 map in the PEA as broadleaved trees however no species identification was given.
Other rivers and streams	Not assessed –	A tributary to the River Parrett flowed through the site. The stream was relatively shallow and permanently-flowing, running between deeply incised banks, suggesting that it has been modified along much of its length. The section through the woodland

UK Habitat Classification	Habitat Condition	Description
	assumed poor	at the north-west of the site was more sinuous in shape. Aquatic and emergent vegetation along the stream was relatively limited.
Ditch	Poor	Ditches were noted that drained the land towards the stream. These were ephemeral and dried out over the summer months. Aquatic vegetation along all ditches was relatively limited.

Protected and/or notable species

2.2.4 Ecological surveys undertaken in 2020 -2022 (RPS, 2020, RPS, 2022b) identified that the Site had the potential to support a number of protected and notable species including: great crested newts (GCN) (*triturus cristatus*), reptiles, breeding birds, roosting bats, foraging and commuting bats, badgers (*Meles meles*) and otters (*Lutra lutra*). A description of the results of the surveys is presented in Table 3.

Table 3 Protected/notable species presence

Species	Description
GCN	Environmental DNA (eDNA) results confirmed the presence of GCN in one pond 479 m from the boundary of the main site and 168 m from the temporary construction southern access track. It is possible (but very unlikely) that GCN could be encountered on the main site, but much more likely that they could be encountered during the construction of the southern access track.
Reptiles	A low population of adder and grass snake, and an exceptional population of slow worm (following Froglife population size guidance (Froglife, 1999) were recorded on site. There was a higher presence of slow worms and adders along the margins of the railway line on the northern boundary. Grass snakes were more associated with the watercourse margins.
Breeding birds	The habitats present on the site indicate that a diverse assemblage of farmland bird species are likely to be breeding on the site. The heavy levels of cattle grazing in fields associated with the main site appears to preclude use by ground-nesting species, but the woodland and hedgerows all provide suitable habitats for non-ground nesting birds.
Bats (roosts)	A total of 67 trees within the solar array boundary and a further 26 trees along the temporary southern access route were assessed for bat roost potential, of which three were considered to have high bat roosting potential, 18 were considered to have moderate potential, and 56 as having low potential to support roosting bats (following guidance from Collins, 2016). All other trees were considered to have negligible potential. No trees with High or Moderate potential were identified along the temporary southern access route.
Bats (activity)	The hedgerows and streams provided linear features for bats to commute along and were likely to support a variety of night flying invertebrates. The areas of improved (modified) grassland fields were considered lower value habitat for foraging and commuting bats which were likely to support fewer invertebrates for foraging and lacked linear features for commuting.
Badger	There are very low levels of badger activity on site and no active badger setts are present within 30m of the proposed development.
Otter	Otters were identified nearby in the desk-study, although no evidence for their presence was found along the water courses on the site. Given the transient nature of otter behaviour, their presence cannot be totally discounted, and it is possible that they may occasionally travel along the water courses while hunting or while migrating between catchments.

3 Description and evaluation of proposed ecological features

3.1 Site vision

- 3.1.1 The Development will generate energy in a landscape enhanced for biodiversity. Biodiverse green corridors will dissect the site, comprising a mosaic of floristically-rich grassland, scrub, hedgerow and woodland. These will support a wide range of species and provide greater permeability for wildlife in the local area. Enhancing habitat networks through the Site will improve connectivity between areas of valuable habitat within and adjacent to the Site, such as those within Local Wildlife Sites (LWS) Haselbury Park Wood to the east and Crondle Hill Plantation, Coppice and Field to the north.
- 3.1.2 Alongside the biodiversity benefits, interventions will screen the panels from surrounding areas and enhance the recreational experience along the PRoW that crosses the Site.
- 3.1.3 This vision is presented in the following sections by ecological feature and displayed on Figure 2. Each ecological feature has been assigned an ID number, which links the description with objectives set out in Section 4 and prescriptions set out in Section 7.

3.2 Grassland enhancement (ID No. G1-3)

3.2.1 Three areas of grassland enhancement will occur within the site, which are as follows:

Wildflower meadow (ID No. G1)

3.2.2 This area will support a species-rich sward and be managed as a hay meadow. This habitat will be subject to nutrient stripping and seeded using green hay collected at a site in the local area, preserving the local genetic provenance of wildflower grasslands. It will also provide an important foraging resource for local wildlife. This area will be connected to the wider landscape through the buffer areas, described below, and function as a 'stepping stone' habitat within the local area.

Green corridors (ID No. G2)

- 3.2.3 Buffer areas within the green corridors along existing hedgerows, scrub planting, the watercourse and individual trees will support neutral grassland swards, being floristically-rich in places and becoming tussocky closer to hedgerows and individual trees. Two different seed mixes will be planted throughout this grassland to diversify the sward, one floristically-rich and one that is shade tolerant closer to existing and new vegetation. This habitat will be subjected to nutrient stripping prior to seeding and will be managed through a cutting regime.
- 3.2.4 The mosaic of shorter flower-rich grassland, tussocky grassland, hedgerow edge and scattered scrub and trees, where present, will maximise the number of microhabitats present in the area for a wide range of species.

Under the panels (ID No. G₃)

3.2.5 The grassland under the panels will become less species-poor over time through stopping nutrient input associated with dairy practices and introducing low level grazing with sheep. Species-diversity will be lower than the wildflower meadow and buffer areas however flowering plants will be present, creating a varied sward height with sheltering and foraging opportunities for invertebrates and small mammals.

3.3 Hedgerow Enhancement and Creation (ID No. H1-2)

- 3.3.1 The existing leggy hedgerows within the site will be retained and enhanced through hedge laying to encourage vigorous new growth and planting new woody species, where necessary. These will become species-rich and structurally diverse, providing dense vegetative cover with fruiting shrub species for wildlife such as small mammals and birds. Gaps between the hedgerow bases and the green corridor grassland will be minimal, creating an ecotone from short grassland to woody vegetation.
- 3.3.2 Newly created hedgerows will be species-rich and complement the existing network, allowing them to further reinforce the vegetative connectivity throughout the site. Those planted along PRoW will be both aesthetically pleasing to recreational users and screen the panels.
- 3.3.3 Hedgerows will be managed in the long term through a three-year rotational cutting regime, where 1/3 of the hedgerows are cut each year and allowed to regrow. Cutting will be incremental, with each cut being at least 10 centimetres (cm) above the previous one. As this management plan progresses in the long term, hedgerows should be considered for non-intervention periods and/or rejuvenation cycles to maintain the condition of this habitat.

3.4 Scrub creation (ID No. S1)

- 3.4.1 Two bands of mixed scrub will be created through the Site along the watercourse and existing hedgerows that connects the east of the site with the woodland in the north of the site. These bands of scrub will be over 20 m wide in places and incorporate existing hedgerows, trees and woody vegetation with new scrub enhancing species diversity with mixture of native woody species.
- 3.4.2 A further band of scrub will form part of the eastern boundary, reinforcing the connectivity between the green corridor on site and habitats at Knowle Hill to the east. The scrub will be structurally diverse and include fruiting shrubs.
- 3.4.3 Scrub will be largely created through planting, however small areas will be left to succeed naturally. These areas will further enhance the structural diversity of the scrub habitat.
- 3.4.4 In time, the existing hedgerows will form an established line of vegetation within the scrub but will eventually cease to function as standalone linear features. Scrub is a very valuable habitat and the hedgerows will provide a mature vegetative resource, reducing the time needed to reach good ecological condition.

3.5 Woodland retention and creation (ID No. W1-3)

- 3.5.1 The lowland mixed deciduous woodland in the north of the site will be retained and will therefore continue to support a rich ground flora and diverse range of tree species.
- 3.5.2 The other broadleaved woodlands, in the north-east and south of the site will also be retained and continue to provide mature woodland cover.
- 3.5.3 Woodland strips will be planted along the western and southern border of the site, creating an upper canopy resource once mature and connecting with the broadleaved woodland in the south of the site. Woodland ground flora will be seeded prior to planting to enhance this habitat. Part of these woodland strips will comprise existing hedgerows, which will be allowed to grow mature and bushy and become incorporated into the woodland strips as time goes on.

3.6 Trees (ID No. T1-2)

- 3.6.1 Individual trees within hedgerows and standalone individuals in the fields will be retained. Incorporating most of these within the green corridor provides buffering habitat which will maintain the presence and health of the mature woody resource on site.
- 3.6.2 Planting new individual trees within the green corridor will supplement the mature individuals and provide the next generation of standalone trees. Any standing dead trees will be left in situ, where safe to do so, to provision dead wood habitat which will be particularly beneficial to invertebrates and bats.

3.7 Measures to benefit fauna (ID No. F1-3)

- 3.7.1 The ecological features described above as well as providing habitat with its own intrinsic value in its own right will also enhance the area for the protected and/or notable species recorded present, or likely present on site as follows:
 - The green corridors will provide a mosaic of habitats that are beneficial to reptiles, foraging amphibians, invertebrates, small mammals and foraging and commuting bats.
 - The increase in dense woody hedgerow and scrub vegetation, with fruiting species, will increase the nesting and foraging resource available to farmland birds.
 - Increasing the extent and quality of riparian vegetation along the main watercourse would benefit otters.
- 3.7.2 These habitat interventions would be supplemented with the creation of the following specific features to benefit legally protected or otherwise notable species:
 - 51 Bat boxes These will supplement the existing roost resource on site and allow for expansion of the current bat population.
 - 3 Log pile refugia These will be sited in sunny areas along hedgerow and scrub edges using arisings from vegetation management. They will provide a valuable sheltering resource for amphibians and reptiles and dead wood habitats for invertebrates.
 - 3 Clean stone hibernacula These will be partially buried and placed within sun exposed areas to provide another resource for sheltering amphibians, reptiles and small mammals.
 - Dead wood Leaving standing dead wood in place, or if felling is required pile adjacent to hedgerows or buffer strip, will benefit local invertebrates.

4 Target habitats and management objectives

4.1.1 To deliver and maintain the proposed ecological features described in Section 3, target habitat classification, condition and management objectives are required. Objectives for each proposed ecological feature are displayed within Table 4 along with the target habitat classification (UKHab ltd, 2023) and condition (following the Statutory Metric condition criteria (Natural England, 2024a)).

ID No.	Proposed ecological feature	Target UK Habitat Classification (UKHabs code)	Target condition	Management objectives
G1	Grassland enhancement – wildflower meadow	Other neutral grassland (g3c)	Good	 The grassland represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species. Sward height is varied (at least 20% of the sward is < 7 cm and at least 20% is > 7 cm. Cover of bare ground is between 1% and 5%, including localised areas. Cover of Bracken (<i>Pteridium aquilinum</i>) is <20% and cover of scrub (including Bramble) is <5%. Combined cover of species indicative of suboptimal condition and physical damage <5% of total area. No invasive non-native plant species are present. There are ≥ 10 vascular plant species per m², including forbs that are characteristic of the habitat type.
G2	Grassland enhancement – green corridor	Other neutral grassland (g3c)	Moderate	 The grassland represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species. Sward height is varied (at least 20% of the sward is < 7 cm and at least 20% is > 7 cm. Cover of bare ground is between 1% and %, including localised areas. Cover of Bracken is <20% and cover of scrub (including Bramble) is <5%.
G3	Grassland enhancement – under panels	Modified grassland (g4)	Fairly Poor	 There are 6-8 vascular plant species per m², including at least 2 forbs. There is o% coverage of scrub in the total grassland area. Cover of Bracken is o% No invasive non-native plant species are present.
Hı	Hedgerow enhancement	Species-rich native hedgerow with trees (H2a)	Good	 There are > 5 woody species per 30 m on average. Average height and width > 1.5 m Gap between ground and base of canopy < 0.5 m for 90% of length Gaps in canopy < 10% of total length. No gaps > 5 m > 1 m of undisturbed ground with perennial herbaceous vegetation at the base of the hedge. > 90% of hedgerow and undisturbed ground free of invasive non-native plant species and damage caused by humans. There is more than one age-class of tree present with at least one mature tree present per 50 m.

Table 4 Target habitat, condition and management objectives

ID No.	Proposed ecological feature	Target UK Habitat Classification (UKHabs code)	Target condition	Management objectives
				 95% of hedgerow trees are in healthy condition – i.e. subject to damage which compromises the survival and health of the individual specimens.
H2	Hedgerow creation	Species-rich native hedgerow with trees (H2a)	Moderate	 There are > 5 woody species per 30 m on average. Average height and width > 1.5 m Gap between ground and base of canopy < 0.5 m for 90% of length Gaps in canopy < 10% of total length. No gaps > 5 m > 1 m of undisturbed ground with perennial herbaceous vegetation at the base of the hedge. > 90% of hedgerow and undisturbed ground free of invasive non-native plant species and damage caused by humans. 95% of hedgerow trees are in healthy condition – i.e. subject to damage which compromises the survival and health of the individual specimens.
51	Scrub creation	Mixed scrub (hȝh)	Good	 Appearance and composition of the vegetation closely matches its UKHab description. At least 80% of scrub is native. > 3 native woody species. No single species comprises > 75% cover. Seedlings, saplings, young shrubs and mature shrubs are all present. No invasive non-native plant species are present and species indicative of suboptimal condition < 5% of ground cover. There is a well-developed edge with scattered scrub and tall grassland and/or forbs present between the scrub and adjacent habitat. There are clearings, glades or rides present, providing sheltered edges.
Wı	Woodland retention	Lowland mixed deciduous woodland (w1f)	Good	 Three age classes present. Limited browsing damage evident. No invasive plant species are present. Five or more native tree or shrub species across woodland parcel. >80% of canopy and understorey are native. Three classes of woodland regen are present (trees 4-7 cm Diameter at Breast Height (DBH), saplings and seedlings. Tree mortality 10% or less.

ID No.	Proposed ecological feature	Target UK Habitat Classification (UKHabs code)	Target condition	Management objectives
				 Maintenance of existing ground flora with ancient woodland indicator species. Three or more woodland storeys are present – i.e., upper canopy, low canopy and shrub layer. Deadwood, standing or fallen, is present within the woodland. There is no nutrient enrichment or damaged ground present.
W2	Woodland retention	Other woodland, broadleaved (w1g)	Moderate	 Two age classes present. No significant browsing damage evident. No invasive plant species are present. Five or more native tree or shrub species across woodland parcel. >80% of canopy and understorey are native. Tree mortality 10% or less. Two storeys are present – i.e., low canopy and shrub layer Deadwood, standing or fallen, is present within the woodland. There is no nutrient enrichment or damaged ground present.
W ₃	Woodland creation	Other woodland, broadleaved (w1g)	Poor	 No significant browsing damage evident. No invasive plant species are present. Five or more native tree or shrub species across woodland parcel. >80% of canopy and understorey are native. Tree mortality 10% or less. Two storeys are present – i.e., low canopy and shrub layer Deadwood is present within the woodland. There is no nutrient enrichment or damaged ground present.
Tı	Retained standalone individual trees	Individual trees	Good	 The tree is a native species. Tree canopy is predominately continuous, with gaps making up < 10 % of total area. The tree is mature. There is little or no evidence of an adverse impact on tree health by human activities. More than 20% of the tree canopy area is oversailing vegetation beneath.
T2	New standalone individual trees	Individual trees	Moderate	 The tree is a native species. Tree canopy is predominately continuous, with gaps making up < 10 % of total area.

ID No.	Proposed ecological feature	Target UK Habitat Classification (UKHabs code)	Target condition	Management objectives
				 There is little or no evidence of an adverse impact on tree health by human activities. More than 20% of the tree canopy area is oversailing vegetation beneath.
F1	Wildlife features – bat boxes	N/A	N/A	 Boxes will be installed by or under the instruction of an appropriately experienced ecologist. Each box should be sited considering the following requirements: To be located in groups of three (51 No.); Targeted to larger existing trees in hedgerows; At least 15 m from working areas; At a height of at least approximately 5-6 m; Facing south west or south east in order to capture sunlight for part of the day; Sheltered from strong winds; and Free from obstacles such as branches, that could obstruct potential entry routes.
F2	Wildlife features – Log pile refugia	N/A	N/A	 Located in green corridor, particularly adjacent to railway line (3 No.). Located in sunny, south-facing locations.
F3	Wildlife features – Clean stone hibernacula	N/A	N/A	 Partially buried, clean stone piles topped with turf (3 No.). Located in sunny, south facing locations.

5 BNG assessment

5.1 The Statutory Biodiversity Metric

5.1.1 Defra's Statutory Biodiversity Metric (Defra, 2023) was used to assess the value of the baseline and proposed habitats and understand the net change in value of the site vision. The metric provides a separate assessment for habitat areas (referred to as habitat units), linear vegetated habitats (referred to as hedgerow units), and linear aquatic habitats (referred to as watercourse units). The results of this assessment are summarised below. The full detailed assessment is presented in the Statutory Biodiversity Metric calculation tool appended to this plan.

5.2 Habitat Units

5.2.1 The number of habitat units derived from the baseline and the site vision are displayed in the Table 5, along with the resulting net change in biodiversity value.

Table 5 Change in habitat units resulting in implementation of the site vision

Baseline habitat units	Habitat units delivered by the site vision	Net change in habitat units	Habitat unit % change
126.67	215.17	88.5	69.87

5.3 Hedgerow Units

5.3.1 The number of hedgerow units derived from the baseline and the site vision are displayed in the Table 6, along with the resulting net change in biodiversity value.

Table 6 Change in hedgerow units resulting in implementation of the site vision

Baseline hedgerow	Hedgerow units delivered	Net change in	Hedgerow unit %
units	by the site vision	hedgerow units	change
61.47	99.72	38.25	62.23

5.4 Watercourse Units

5.4.1 Watercourse units were not considered in this project due to no impacts to the watercourse on site.

6 Factors that might influence management of proposed ecological features

6.1.1 There are numerous factors that may affect the management of the ecological features proposed within the site vision. The section below considers these factors under three categories: on-site natural, on-site man-induced, and external. These should be considered when implementing the LEMP.

6.2 On site natural factors

- Protected and/or notable species could be present during creation or management of the ecological features.
- Invasive or undesirable species could colonise areas through use of the site by native wildlife and affect the ecological condition of habitats.
- Wild grazing animals including deer could impact the establishment and development of proposed scrub and tree planting and the condition of retained woodland habitat.

6.3 On site man-induced factors

- Management of much of the site may depend on availability of resources for cutting grassland and removal and disposal of hay/grassland arisings.
- The availability of livestock will determine potential for future grazing amongst the panels. Success of using grazing as a management method would depend on stocking density, breed of sheep, height of panels and the length of time livestock are released into the area. A reliable water supply for livestock would be needed.
- Success of habitat creation, particularly species-rich grassland enhancement, may be affected by nutrient levels within the site, particularly from historical dairy farming activities.
- Invasive species could be introduced to the site and affect the ecological condition of habitats. Introduction could happen through habitat creation/management activities, such as the sourcing of species which may be carrying invasive species, or species introduced through construction/operational activities or recreation.

6.4 External factors

 Changes in the hydrology of the site through flooding events and/or drought could affect the success of ecological features on site through inundation or drying out. Climate change could increase the frequency of extreme weather events.

7 LEMP delivery

7.1 Introduction

- 7.1.1 The following splits the delivery of the LEMP into two stages:
 - Section 7.2 initial habitat creation and enhancement over the first five years.
 - Section 7.3 long term habitat management from years 6-30
- 7.1.2 Ecological features are displayed on Figure 2, Appendix A.

7.2 Habitat creation and enhancement prescriptions and schedule

7.2.1 Table 7 sets out the prescriptions needed to create the ecological features described in Section 3 from year 1 to year 5 following project implementation. These are set out by ecological feature with each prescription given its own unique ID number for ease of reference i.e., G1.1, G2.3, H1.2 etc... Also included is the target condition, additional details, the target years and the timings of when the prescription should be undertaken by month.

Table 7 Habitat creation and enhancement prescriptions and schedule

	Durantinting		Target					Tim	ing (mon	ths)				
ID NO.	Prescription	Additional details	years	J	F	М	Α	м	J	J	Α	s	ο	Ν	D
Prescript	ion Number: G1, Ecological Fea	ture: Grassland enhancement – wildflower meadow, Targe	t Habitat: O	ther	neut	ral g	rassla	and, '	Targ	et co	ondit	ion:	Good	1	
G1.1	Initial implementation phase to reduce nutrient levels: Cut grassland sward and remove arisings	Undertake multiple times over the summer to reduce nutrient levels in the soil. This can be undertaken before and during installation of infrastructure. Remove arisings from the grassland. Keep vegetation short prior to scarification	1-2			x	x	x	x	x	x	x	x		
G1.2	Source donor site for green hay of local provenance	Donor site needs to be in close proximity to the site. Arrange with landowners of donor site when green hay can be collected, and any costs associated with it. A smaller area of hay collected is needed to seed area on site (at a ratio of 1:3).	1-2	x	x	x	x	x	x	x	x	x	x	x	x

	Procerintian	Additional dataile	Target					Tim	ing (mon	ths)				
			years	J	F	М	Α	Μ	J	J	Α	S	0	Ν	D
G1.3	Lightly scarify area to prepare for green hay scattering	Using chain harrow or similar, ensure at least 50% of bare ground is present. Take care around retained mature trees.	2-3						x	x					
G1.4	Harvest and scatter green hay over area	This could be transported and spread from a trailer given the area on site is < 1 ha. Clumps of green hay should be scattered to create an even covering.	2-3						x	x					
G1.5	Contact seeds from green hay with the soil	Field should be rolled straight after the seed has been spread	2-3						х	х					
G1.6	Restrict vegetation growth in autumn and winter – if required.	This should reduce dominance of vigorous grasses and could be achieved through a late autumn cut or grazing. Cut or graze again, in early spring if winter growth is high before ground nesting bird season. Remove livestock if ground conditions are too wet.	2-5		x	x						x	x	x	
G1.7	Undertake a hay cut	Leave shut up from April-June to allow flower and seed set. Cut from mid-July at the earliest. Leave 20% of area uncut until the winter to allow seed set of late flowering species. Rotate the 20% of area between years. Cut grass from the centre outwards to allow animals to escape. Follow G1.6 for autumn/winter management.	3-5							x	×	×			
G1.8	Control of problem perennial species i.e., docks – as and when.	Mechanical removal or electro control would be preferable. Spot spray as a last resort	3-5				х	x							

Prescription Number: G2, Ecological Feature: Grassland enhancement – green corridors, Target Habitat: Other neutral grassland, Target condition: Moderate

G2.1	Cut grassland sward and remove arisings	Undertake multiple times over the summer to reduce nutrient levels in the soil. This can be undertaken before and during installation of infrastructure. Remove arisings from the grassland. Keep vegetation short prior to scarification	1-2			x	x	x	x	x	x	x	x		
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	Ducastisticu		Target					Tim	ing (mon	ths)				
ID NO.	Prescription	Additional details	years	J	F	М	Α	М	J	J	Α	s	ο	Ν	D
G2.2	Source seed	 Source seed for the two following treatments: Treatment 1: Hedgerow mixture (e.g. Hedgerow and light shade seed mix (https://britishwildflowermeadowseeds.co.uk/product s/hedgerow-and-light-shade-seed-mix)). Treatment 2: floristically-rich neutral grassland (e.g., Somerset (South) Meadow Seed Mix (https://britishwildflowermeadowseeds.co.uk/product s/somerset-south-meadow-seed-mix)) Seed mix to ideally be of local provenance. 	2-3		x	x	x				x	×	x		
G2.3	Lightly scarify area to prepare for seeding	Undertake after hedge laying (See Prescription H1) Using chain harrow or similar, ensure at least 50% of bare ground is present. Take care around retained mature trees and hedgerows, leaving a buffer if appropriate. Hedgerow management may expose areas of bare ground.	2-3			x	x					x	x		
G2.4	Seed green corridor grassland areas	Surface sow with the aim to get an even distribution across the entire area. Treatment 1: sow within 2m of hedgerows and underneath retained trees. Treatment 2: sow in remaining areas.	2-3			x	x					x	x		
G2.5	Encourage seed contact with the ground	Firm with a roll or tread into soil to give good contact	2-3			x	x					х	x		
G2.6	Cut to 5cm height and remove flush of annual weed	There will be a flush of annual weeds from the soil bank as the wildflower seeds germinate. Cut and remove arisings from site	2-3						х	х	х				
G2.7	Restrict vegetation growth in autumn and winter – if required.	This should reduce dominance of vigorous grasses and could be achieved through a late autumn cut. Cut again, in early spring if winter growth is high before ground nesting bird season.	3-5		x	x						х	x	x	

	Duscription		Target					Tim	ing (mon	ths)				
	rescription		years	J	F	М	Α	М	J	J	Α	S	ο	Ν	D
G2.8	Cut Treatment 1 grassland on rotation every 2-3 years	Leave treatment 1 areas to go tussocky and cut on a rotational basis, leaving parts as an undisturbed winter refuge.	4-5	х	x								x	x	X
G2.9	Cut Treatment 2 grassland once a year	Undertake a cut in summer when conditions are suitable. Consider rotational cutting over the summer i.e., cut 25% then cut the next 25% a month later to leave a floral resource. Cut from the fence towards the hedgerow, leaving Treatment 1 areas uncut. Allow arisings to dry where possible before removing them from the area. Follow G2.7 for autumn/winter management.	4-5						x	x	x	x			
G2.10	Control of problem perennial species i.e., docks – as and when.	Mechanical removal or electro control would be preferable. Spot spray as a last resort.	4-5				х	x							

Prescription Number: G3, Ecological Feature: Grassland enhancement – under panels, Target Habitat: Modified grassland, Target condition: Good

G3.1	Cut grassland sward and remove arisings	Undertake multiple times over the summer to reduce nutrient levels in the soil, preferably before installation of the panels. Remove arisings from the grassland.	1			x	x	x	x	x	x	x	x		
G3.2	Install grazing infrastructure	Ensure security fence and gates are stock proof and supply water troughs.	1	х	x	х	х	х	х	х	х	х	x	x	x
G3.3	Produce a conservation grazing plan (Department for Environment, Food and Rural Affairs, 2024a)	Defining the type of sheep used, the grazier, the stocking density, the rotation plan, and the nutritional needs of the livestock to avoid supplementary feeding.	1	x	x	x	x	x	x	x	x	x	x	x	x
G3.4	Graze with sheep	50-75% of areas to be shut up over the summer to allow flowering plants to set seed. This should be rotated year on year. Stocking density to be low (4 – 7 sheep per ha) to avoid overgrazing and poaching. Remove livestock if ground conditions are too wet.	2-5	x	x							x	×	x	×

	Brecevintion		Target					Tim	ing (mon	ths)				
ID NO.	riescription		years	J	F	М	Α	м	J	J	Α	S	0	Ν	D
Prescrip	tion Number: H1, Ecological Fea	ture: Hedgerow enhancement, Target Habitat: Species-ric	h hedgerow	with	tree	s, Ta	rget	cond	litio	n: Go	od				
H1.1	Source hedgerow whips ahead of hedge laying and planting	 Find a suitable source, of local provenance if possible. Suggested species list to include: Hawthorn (<i>Crataegus monogyna</i>) Blackthorn (<i>Prunus spinosa</i>) Pedunculate Oak (<i>Quercus robur</i>) Dogwood (<i>Cornus sanguinea</i>) Elder (<i>Sambucus nigra</i>) Rose (<i>Rosa</i> sp.) Additional species to consider that are found in the local area include: Whitebeam (<i>Sorbus aria</i>) Hornbeam (<i>Carpinus betulus</i>) Holly (<i>Ilex aquifolium</i>) Yew (<i>Taxus baccata</i>) Way-faring tree (<i>Viburnum lantana</i>) Downy Birch (<i>Betula pubescens</i>) – In wetter areas 	1-2	×	x	×	х	x	Х	×	х	x	×	×	X
H1.2	Identify sections of existing hedgerows that require laying	Identify and map species-rich and species-poor hedgerows/ hedgerow sections that are leggy and in need of rejuvenation through laying. Identify and map species-rich and species-poor hedgerows/ hedgerow sections that can be left without laying.	1-2	x	x	x	x	x	x	x	x	x	x	x	x
H1.3	Lay hedgerows	Find a suitable local hedgelayer and ensure identified hedgerow/ hedgerow sections are laid in the local style (more info and database of hedgelayers is here: <u>https://hedgelaying.org.uk/</u>). Undertake this over two years to retain dense vegetation resource Leave hedge trees standing.	1-2	x	x								x	×	x

	Properintian		Target					Tim	ing (mon	ths)				
ID NO.	rescription		years	J	F	М	Α	М	J	J	Α	S	0	Ν	D
H1.4	Plant up gaps	 Plant up gaps in newly laid species-poor hedgerows with whips of local provenance. Aim for at least 5 woody species (including existing and new plants) per 30m. Consider if whip protection is necessary, depending on presence and abundance of rabbits and deer (The Tree Council, 2021). 	1-2	x	×								x	x	×
H1.5	Seed and manage hedgerow grassland buffer	See Grassland 'Treatment 1' in Prescription G2	3-5							-					
H1.6	Cut back new growth of laid hedgerows	Undertake incremental cutting/trimming – cutting higher and wider than the last cut, leaving at least 10cm. Undertake this on a rotational basis, i.e. cut 50% one year and 50% the next year. Brash to be used as a dead-hedge material to reinforce laid boundary feature or create brash piles within green corridor. Cut to be outside of the nesting bird season.	2-5	x	x								x	x	x
H1.7	Rotational cut of non-laid hedgerows	Retained, un-laid hedgerows should enter a three-year rotational cutting regime where they are left uncut for three years. 1/3 of the hedgerows to be cut each year. Cutting should be incremental - cutting higher and wider than the last cut, leaving at least 10cm. Brash to be used to create new brash piles in the green corridor. Cut to be outside of the nesting bird season.	1-5	x	x								x	x	x
Prescript	tion Number: H2, Ecological Fe	ature: Hedgerow creation, Target Habitat: Species-rich hed	gerow with	trees	, Tar	get c	ondi	ition	: Goo	bd					

H2.1	Source hedgerow whips ahead of hedge planting	 Find a suitable source, of local provenance if possible. Suggested species list to include: Hawthorn (<i>Crataegus monogyna</i>) Blackthorn (<i>Prunus spinosa</i>) Pedunculate Oak (<i>Quercus robur</i>) 	1-2	x	x	x	x	x	x	x	x	x	x	x	x
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ID No.	Propertiation		Target					Tim	ing (mon	ths)				
ID NO.	rescription		years	J	F	М	Α	М	J	J	Α	S	0	Ν	D
		 Dogwood (Cornus sanguinea) Elder (Sambucus nigra) Rose (Rosa sp.) Additional species to consider that are found in the local area include: Whitebeam (Sorbus aria) Hornbeam (Carpinus betulus) Holly (Ilex aquifolium) Yew (Taxus baccata) Way-faring tree (Viburnum lantana) Downy Birch (Betula pubescens) – In wetter areas 													
H2.2	Prepare ground	Follow method for Grassland Treatment 1, Prescription G2	1-2							-					
H2.3	Plant hedgerow whips	Plant new hedgerows at a density of 7 plants per metre in a staggered double row with 20 – 40 cm between each row. Aim for at least 5 woody species (including existing and new plants) per 30 m. Consider if whip protection is necessary, depending on presence and abundance of rabbits and deer (The Tree Council, 2021).	1-2	x	x								x	x	х
H2.4	Consider planting older trees instead of whips	Plant feathered or light standard trees, if appropriate. Aim for at least 5 woody species (including existing and new plants) per 30 m. Consider if tree protection is necessary, depending on presence and abundance of rabbits and deer (The Tree Council, 2021).	1-2	x	x								x	x	x
H2.5	Water new plants – as and when	Consider watering, particularly in periods of drought.	2-5				X	X	Х	X	Х	Х			
H2.6	Leave to grow untrimmed	This is to prepare the hedge for laying within the first 10 years to ensure that the hedgerow will be thick at the base for screening of panels from PRoW.	2-5							-					

	Procernition	Additional dataile	Target					Tim	ning ((mor	nths)				
ID NO.	riescription		years	J	F	М	Α	м	J	J	Α	S	0	Ν	D
Prescript	tion Number: S1, Ecological Fea	ture: Scrub creation, Target Habitat: Mixed scrub, Target o	ondition: M	oder	ate	-	-					-	-		
51.1	Source scrub whips ahead of planting	 Find a suitable source, of local provenance if possible. Suggested species list to include: Hawthorn (<i>Crataegus monogyna</i>) Blackthorn (<i>Prunus spinosa</i>) Elder (<i>Sambucus nigra</i>) Rose (<i>Rosa</i> sp.) Whitebeam (<i>Sorbus aria</i>) Hornbeam (<i>Carpinus betulus</i>) Holly (<i>Ilex aquifolium</i>) Yew (<i>Taxus baccata</i>) Way-faring tree (<i>Viburnum lantana</i>) Downy Birch (<i>Betula pubescens</i>) – In wetter areas 	1-2	×	x	x	x	x	x	×	x	x	×	×	×
S1.2	Prepare ground	Follow method for Grassland Treatment 1, Prescription G2	2-3							-					
51.3	Plant scrub whips	 Plant in random formation to create a natural aesthetic with glades and scalloped edges. Vary the density across the area with an overall guide of 2000 plants per hectare. Aim for at least 5 native woody species in the area, with no one species > 75%. Consider if whip protection is necessary, depending on presence and abundance of rabbits and deer (The Tree Council, 2021). 	3	x	x								x	x	x
51.5	Replace failed whips, if required	Replace whips that have failed. Follow Prescription S1.3.	3-5	х	х								x	х	Х
S1.5	Water new plants – as and when	Consider watering, particularly in periods of drought.	3-5				X	X	X	X	X	X			
51.6	Define areas for scrub natural succession	Ensure these areas are omitted from cutting regime for Grassland Treatment 1 (prescription G2).	1	х	x	х	х	x	х	x	x	x	х	x	Х
51.7	Fence if necessary	Consider fencing if scrub seedlings are heavily browsed	1-5	Х	X	X	X	X	X	X	X	X	X	х	Х

	Properties	Additional dataile	Target				Т	iming	j (me	onths)				
ID NO.		Additional details	years	J	F	Μ	A	I J	J	A	S	0	N	D

Prescription Number: W1, Ecological Feature: Woodland retention, Target Habitat: Lowland mixed deciduous woodland, Target condition: Good

W1.1	Consider coppicing or thinning select scrub – as and when	Consider coppicing individual trees within woodland to reinforce shrub layer. Consider thinning individual trees within woodland to allow more sunlight to penetrate to the ground. Consider bark ringing selected trees to create standing dead wood resource in woodland. Undertake outside of nesting bird season. Ensure that no bat roost features are affected. Use timber to create log piles within and adjacent to woodland.	1-5	x	x								x	x	x
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Prescription Number: W2, Ecological Feature: Woodland retention, Target Habitat: Other woodland, broadleaved, Target condition: Moderate

W2.1	Consider coppicing trees – as and when	Consider coppicing individual trees within woodland to encourage development of dense and vigorous shrub layer. Consider bark ringing selected trees to create standing dead wood resource in woodland. Undertake outside of nesting bird season. Ensure that no bat roost features are affected. Use timber to create log piles within and adjacent to woodland.	1-5	x	x								x	x	х
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Prescription Number: W3, Ecological Feature: Woodland creation, Target Habitat: Other woodland, broadleaved, Target condition: Poor

W3.1	Source tree whips ahead of planting	 Find a suitable source, of local provenance if possible. Suggested species list to include the following, which are recorded in the local area: Oak (<i>Quercus robur</i>) Whitebeam (<i>Sorbus aria</i>) Hornbeam (<i>Carpinus betulus</i>) Wild service tree (<i>Sorbus torminalis</i>) Field Maple (<i>Acer campestre</i>) Alder (<i>Alnus glutinosa</i>) – In wetter areas 	1-3	x	x	x	x	x	x	x	x	×	x	x	x
W3.2	Cut grassland sward and remove arisings	Undertake multiple times over the summer to reduce nutrient levels in the soil.	1-3			x	х	x	x	x	x	x	x		

	Properintion	Additional dataile	Target					Tim	ing (mon	ths)				
ID NO.	riescription		years	J	F	Μ	Α	М	J	J	Α	S	0	Ν	D
		Remove arisings from the grassland. Keep vegetation short prior to scarification													
W3.3	Source seed	Source woodland ground flora seed for the following treatment; - Treatment 3: Woodland mixture (e.g. Emorsgate EW1 (https://wildseed.co.uk/product/mixtures/complete- mixtures/special-habitat-mixtures/woodland- mixture/)). Seed would ideally be of local provenance however a commercial example is provided above.	2-3		x	x	x				x	x	x		
W3.4	Lightly scarify area to prepare for seeding	Using chain harrow or similar, ensure at least 50% of bare ground is present. Take care around retained mature trees.	2-3			x	x					x	x		
W3.5	Seed woodland planting areas	Surface sow with the aim to get an even distribution across the entire area.	2-3			x	х					x	x		
W3.6	Plant tree whips	Plant in random formation to create a natural aesthetic at a max average density of 1600 plants per hectare. Aim for at least 5 native woody species in the area, with no one species > 75%. Consider if whip protection is necessary, depending on presence and abundance of rabbits and deer (The Tree Council, 2021).	3	x	x								x	x	x
W3.7	Replace failed whips, if required	Replace whips that have failed. Follow Prescription W3.6.	3-5	х	x								х	х	Х
W3.8	Water new plants – as and when	Consider watering, particularly in periods of drought.	3-5				Х	Х	Х	X	Х	Х			

Prescription Number: T1, Ecological Feature: Retained standalone individual trees, Target Habitat: Individual trees, Target condition: Good

T1.1	Maintain tussocky grass sward underneath trees	Follow Grassland Treatment 1, Prescription G2	2-5	-
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		A didate web disectly	Target					Tim	ning (mon	ths)				
TD No.	Prescription	Additional details	years	J	F	м	Α	М	J	J	A	S	0	Ν	D
Prescript	tion Number: T2, Ecological Fea	ture: New standalone individual trees, Target Habitat: Indi	vidual trees,	Targ	jet c	ondi	ion:	Mod	lerat	e					
T2.1	Confirm planting location and number	Identify on site where new individual trees will be planted	2-3	x	x	x	х	x	x	x	x	x	x	x	х
T2.2	Source tree whips ahead of planting	 Find a suitable source, of local provenance if possible. Suggested species list to include: Oak (<i>Quercus robur</i>) Whitebeam (<i>Sorbus aria</i>) Hornbeam (<i>Carpinus betulus</i>) Alder (<i>Alnus glutinosa</i>) – In wetter areas 	2-3	x	x	x	x	×	x	x	x	x	×	x	×
T2.3	Prepare ground	Follow method Grassland Treatment 1, Prescription G2	2-3							-					
T2.4	Plant tree whips	Consider if whip protection is necessary, depending on presence and abundance of rabbits and deer (The Tree Council, 2021).	3	x	x								x	x	x
T2.5	Replace failed whips, if required	Replace whips that have failed. Follow Prescription T2.4.	3-5	x	x								х	x	Х
T2.6	Water new plants – as and when	Consider watering, particularly in periods of drought.	3-5				х	X	X	X	x	X			
Prescript	tion Number: F1, Ecological Fea	ture: Bat Boxes, Target Habitat: Bat roosts, Target conditi	on: N/A												
F1.1	Identify suitable trees for bat box installation.	Verify suggested trees on landscape plan with a visit on site.	1	x	x	x	х	x	x	x	x	x	х	x	Х
F1.2	Install bat boxes.	As per manufacturers guidance	1-5	X	X	X	Х	X	X	X	Х	X	Х	Х	Х
Prescript	tion Number: F2, Ecological Fea	ture: Log pile refugia, Target Habitat: refugia, Target conc	dition: N/A												
F2.1	Confirm refugia locations	Verify suggested locations on landscape plan with a visit on site.	1	x	x	x	х	x	x	x	x	x	х	x	Х
F2.3	Construct refugia	Source logs and brash from construction activities. Place in targeted locations. Ensure small holes are present for wildlife to access feature, avoid large holes to restrict drafts.	1-5			x	х	x	x	x	x	x			

	Procerintion		Target					Tim	ing (mon	ths)				
ID NO.	Prescription		years	J	F	М	Α	М	J	J	Α	S	0	Ν	D
		Cover with soil, ensuring some logs are left exposed. Seed with grassland mix used in Treatment 2 (see Prescription Number G2).													
F2.4	Leave a tussocky buffer	Leave a 1m strip of grassland around the refugia to develop into a tussocky sward. This should be cut every 2-3 years with arisings removed.	1-5	x	x								x	x	х

Prescription Number: F3, Ecological Feature: Clean stone hibernacula, Target Habitat: hibernacula, Target condition: N/A

F3.1	Confirm hibernacula locations	Verify suggested locations on landscape plan with a visit on site.	1	x	x	x	x	x	x	x	x	x	x	x	х
F3.2	Excavate hole in target locations	Between Undertake under a watching brief to ensure no protected species are impacted. Set aside turf.	1-5			x	x	x	x	x	x	x			
F3.3	Construct hibernacula	Source a mix of materials, preferably from site activities – i.e., stone, rock, rubble, wood. Place in the hole and ensure that feature stands above ground level. Ensure small holes are present for wildlife to access feature, avoid large holes to restrict drafts. Cover with excavated turf or soil, ensuring some logs are left exposed. Seed with grassland mix used in Treatment 2 if not covered with turf (see Prescription Number G2).	1-5			x	x	x	x	x	x	x			
F3.4	Leave a tussocky buffer	Leave a 1m strip of grassland around the hibernacula to develop into a tussocky sward. This should be cut every 2-3 years with arisings removed.	1-5	x	x								x	x	Х

7.3 Habitat management prescriptions and schedule

7.3.1 Table 8 sets out the prescriptions needed to create the ecological features described in Section 3 from year 6 to year 30 following project implementation. These are set out by ecological feature with each prescription given its own unique prescription number for ease of reference i.e., GM1.3, GM2.1, HM1.2 etc... Also included is the target condition, additional details, the target years and the timings of when the prescription should be undertaken by month.

Table 8 Habitat management prescriptions and schedule

	Duranistica	Target					Tim	ing (mon	ths)				
ID NO.	Prescription	years	J	F	М	Α	М	J	J	Α	S	0	N	D

Prescription Number: GM1, Ecological Feature: Grassland enhancement – wildflower meadow, Target Habitat: Other neutral grassland, Target condition: Good

GM1.1	Restrict vegetation growth in autumn and winter – if required.	This should reduce dominance of vigorous grasses and could be achieved through a late autumn cut. Cut again, in early spring if winter growth is high. Remove arisings.	6-30	x	x					x	x	х	
GM1.2	Undertake a hay cut	Leave shut up from April-June. Cut from mid-July at the earliest. Leave cut vegetation in situ to dry before removing from site. Arisings should be turned once a day to aid drying process. Hay should be removed from site once dry and baled if possible. Cut hay from the centre outwards to allow animals to escape. Follow G1.6 for autumn/winter management.	6-30					x	x	x			
GM1.3	Control of problem perennial species i.e., docks – as and when.	Mechanical removal or electro control would be preferable. Spot spray as a last resort	6-30			x	x						

Prescription Number: GM2, Ecological Feature: Grassland enhancement – green corridors, Target Habitat: Other neutral grassland, Target condition: Moderate

GM2.1	Restrict vegetation growth in autumn and winter – if required.	This should reduce dominance of vigorous grasses and could be achieved through a late autumn cut. Cut again, in early spring if winter growth is high. Remove arisings.	6-30		x	x			x	x	x	
GM2.2	Cut Treatment 1 grassland on rotation every 2-3 years	Leave treatment 1 areas to go tussocky and cut on a rotational basis, leaving parts as an undisturbed winter refuge.	6-30	х	х					х	х	х

	Processintian		Target					Tim	ing (mon	ths)				
	rescription		years	J	F	м	Α	м	J	J	Α	S	ο	Ν	D
GM2.3	Cut Treatment 2 grassland once a year	Undertake a cut in summer when conditions are suitable. Consider rotational cutting over the summer i.e., cut 25% then cut the next 25% a month later to leave a floral resource. Cut from the security fence towards the hedgerow, leaving Treatment 1 areas uncut. Allow arisings to dry where possible before removing them from the area. Follow GM2.1 for autumn/winter management.	6-30						x	x	x	x			
GM2.4	Control of problem perennial species i.e., docks – as and when.	Mechanical removal or electro control would be preferable. Spot spray as a last resort.	6-30				x	x							

Prescription Number: GM3, Ecological Feature: Grassland enhancement – under panels, Target Habitat: Modified grassland, Target condition: Good

GM3.1	Maintain grazing infrastructure, as and when	Ensure security fence and gates are stock proof and water troughs are functioning	6-30	Х	x	х	х	х	х	х	х	x	x	x	х
GM3.2	Graze with sheep	Areas to be shut up over the summer to allow flowering plants to set seed. Stocking density to be low to avoid overgrazing and poaching. Remove livestock if ground conditions are too wet.	6-30	x	x							x	x	x	x
GM3.3	Review grazing management plan, as and when	Review the grazing management plan and alter rotation and stocking density, if required.	6-30	х	x	x	х	х	х	х	x	x	x	x	x
GM3.4	Cut grassland (Alternative option if grazing not possible)	Follow GM2.1 and GM2.3. Consider additional cuts in summer, if grass growth is very strong around the panels	6-30		x	x		x	x	x	x	x	x	x	

Prescription Number: HM1, Ecological Feature: Hedgerow enhancement, Target Habitat: Species-rich hedgerow with trees, Target condition: Good

HM1.1	Rotational cut of hedgerows	Hedgerows should enter a three-year rotational cutting regime where they are left uncut for three years. After three years have elapsed 1/3 of the hedgerows to be cut each year.	6-30	x	x								x	x	x
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	Processintian		Target					Tim	ing (mon	ths)				
	rescription		years	J	F	Μ	Α	М	J	J	Α	S	0	Ν	D
		Cutting should be incremental - cutting higher and wider than the last cut, leaving at least 10cm. Brash to be used to create new brash piles in the green corridor. Cut to be outside of the nesting bird season.													
HM1.2	Consider a non-intervention period, as and when	Consider sections of hedgerow to be removed from rotational cut if in good condition and allowed to grow for 2 years before re-introducing into rotation.	15-30							-					
HM1.3	Lay, coppice or reshape, if required	Undertake appropriate hedgerow management where features do not meet condition requirements or in need of rejuvenation.	15-30							_					

Prescription Number: HM2, Ecological Feature: Hedgerow creation, Target Habitat: Species-rich hedgerow with trees, Target condition: Good

HM3.1	Leave to grow untrimmed	This is to prepare the hedge for laying in year 7-10 to ensure that the hedgerow will be thick at the base for screening of panels from PRoW	5-6				-				
HM3.2	Lay hedgerows	Find a suitable local hedgelayer and ensure identified hedgerow/ hedgerow sections are laid in the local style (more info and database of hedgelayers is here: <u>https://hedgelaying.org.uk/</u>). Undertake this over two years. Leave hedge trees standing.	7-10	x	x				x	x	x
HM3.3	Cut back new growth of laid hedgerows	Undertake incremental cutting – cutting higher and wider than the last cut, leaving at least 10cm. Undertake this on a rotational basis, i.e. cut 50% one year and 50% the next year. Brash to be used as a dead-hedge material to reinforce laid boundary feature or create brash piles within green corridor. Cut to be outside of the nesting bird season; If cuts are to take place in Autumn, these are to be rotational with only a third of the hedge cut in any one year.	7-12	x	x				×	x	x
HM3.4	Rotational cut of hedgerows	Hedgerows should enter a three-year rotational cutting regime where they are left uncut for three years.	12-30	х	х				х	х	х

	Dressription	مططنه ومساطعه والم	Target					Tim	ning (mon	ths)				
ID NO.	rescription		years	J	F	М	Α	М	J	J	Α	S	0	Ν	D
		After 3 years have elapsed 1/3 of the hedgerows to be cut each year. Cutting should be incremental - cutting higher and wider than the last cut, leaving at least 10cm. Brash to be used to create new brash piles in the green corridor. Cut to be outside of the nesting bird season.													
HM3.5	Consider a non-intervention period, as and when	Consider sections of hedgerow to be removed from rotational cut if in good condition and allowed to grow for 2 years before re-introducing into rotation.	25-30		-		-			-					
HM3.6	Lay, coppice or reshape, if required	Undertake appropriate hedgerow management where features do not meet condition requirements or in need of rejuvenation.	25-30							-					

Prescription Number: SM1, Ecological Feature: Scrub creation, Target Habitat: Mixed scrub, Target condition: Moderate

SM1.1	Rotational cut of scrub	Scrub should enter a three-five-year rotational cutting regime where they are left uncut for three-five years. After 5 years have elapsed consider 1/3 of the scrub to be cut/ flailed each year. Cutting/ flailing should be incremental - cutting higher and wider than the last cut, leaving at least 20cm of newer growth. Brash to be used to create new brash piles in the green corridor. Cut/flail to be outside of the nesting bird season. Omit natural succession areas from cutting regime unit year 10.	6-30	x	x				x	x	x
SM1.2	Coppice scrub, as and when	Coppice areas of scrub, as and when, to open existing and new glades and maintain structural diversity of scrub. Brash to be used to create new brash piles in the green corridor. Coppicing to be outside of the nesting bird season.	6-30	x	x				x	x	х

Prescription Number: WM1, Ecological Feature: Woodland retention, Target Habitat: Lowland mixed deciduous woodland, Target condition: Good

W1.1	Consider coppicing or thinning select scrub/trees – as and when	Consider coppicing individual scrub within woodland to reinforce shrub layer.	6-30	х	x								x	x	x
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ID No. P	Description		Target					Tim	ing (mon	ths)				
ID No.		Additional details	years	J	F	М	Α	М	J	J	Α	S	ο	Ν	D
		Consider thinning individual trees within woodland to allow more sunlight to penetrate to the ground. Undertake outside of nesting bird season. Use timber to create log piles within and adjacent to woodland.													
Prescrip	tion Number: WM2, Ecologica	Feature: Woodland retention, Target Habitat: Other woodla	and, broadle	aved	, Tai	get	cond	ition	: Mo	dera	te				
W2.1	Consider coppicing or thinning select scrub/trees – as and when	Consider coppicing individual scrub within woodland to reinforce shrub layer. Consider thinning individual trees within woodland to allow more sunlight to penetrate to the ground. Undertake outside of nesting bird season. Use timber to create log piles within and adjacent to woodland.	6-30	x	x								x	x	x
Prescrip	tion Number: WM3, Ecologica	Feature: Woodland creation, Target Habitat: Other woodlar	nd, broadlea	ved,	Targ	jet c	ondi	tion:	Poor	r					
W3.1	Consider coppicing scrub – as and when	Consider coppicing scrub within woodland to reinforce shrub layer. Consider thinning individual scrub within woodland to allow more sunlight to penetrate to the ground.	6-30	x	x								x	x	x

Undertake outside of nesting bird season. Use timber to create log piles within and adjacent to woodland. Prescription Number: TM1, Ecological Feature: Retained standalone individual trees, Target Habitat: Individual trees, Target condition: Good

TM1.1	Maintain tussocky grass sward underneath trees	Follow Grassland Treatment 1, Prescription GM2	6-30	-
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Prescription Number: TM2, Ecological Feature: New standalone individual trees, Target Habitat: Individual trees, Target condition: Moderate

TM2.1	Maintain tussocky grass sward underneath trees	Follow Grassland Treatment 1, Prescription GM2	6-30						-	-					
Prescrip	tion Number: FM1, Ecological	Feature: Bat Boxes, Target Habitat: Bat roosts, Target cond	ition: N/A												
FM1.2	Maintain bat boxes resource	Repair or replace bat boxes that fail over time, as per manufacturer's instructions.	6-30	x	x	x	x	x	x	x	x	x	x	x	x

ID No.	Ducconintion		Target	Timing (months)											
	Prescription	Additional details	years	J	F	М	Α	М	J	J	Α	s	0	Ν	D
		Ensure box is not in use before removing – this will require a licensed ecologist to check before removal and replacement.													

Prescription Number: FM2, Ecological Feature: Log pile refugia, Target Habitat: refugia, Target condition: N/A

FM2.1	Maintain a tussocky buffer	Leave a 1m strip of tussocky grassland around the refugia. This should be cut every 2-3 years with arisings removed.	6-30	x	x					x	х	х
FM2.2	Maintain refugia, as and when	Maintain refugia, as and whenEnsure feature is still fit for purpose.Undertake any maintenance with ecological supervision when weather is warm to allow any sheltering animals to move.					x	x	x			
FM2.3	Consider creating additional refugia, to replace old ones	Follow Prescription F2, Table 7	6-30					-				

Prescription Number: FM3, Ecological Feature: Clean stone hibernacula, Target Habitat: hibernacula, Target condition: N/A

FM3.1	Maintain a tussocky buffer	Leave a 1m strip of tussocky grassland around the hibernacula. This should be cut every 2-3 years with arisings removed.	6-30	x	x					x	х	x
FM3.2	Maintain hibernacula, as and when Ensure feature is still fit for purpose. Undertake any maintenance with ecological supervision when weather is warm to allow any sheltering animals to move.		6-30				x	x	x			
FM3.3	Consider creating additional hibernacula, to replace old ones	Follow prescription F2, Table 7	6-30					-				

8 Responsibilities and agreements

8.1 Responsible parties in LEMP implementation

8.1.1 SPR is part of the ScottishPower group of companies operating in the UK under the Iberdrola Group. SPR is at the forefront of the development of the renewables industry through pioneering ideas, forward thinking and outstanding innovation. Its ambitious growth plans include expansion of its existing onshore wind portfolio, investment in new large-scale solar deployment and innovative grid storage systems including batteries.

Throughout the scope of existing operations, SPR implement Ecological and Habitat Management Plans and undertake a broad range of conservation management in addition to supporting and implementing research, working in partnership with a wide range of industry bodies. As such, SPR's in-house ecology team will be responsible for the implementation of the LEMP as approved, and supported, where appropriate, with external qualified consultants.

- 8.1.2 SPR also have an Environmental Management System, accredited to ISO 14001. The system prescribes a code of practice for ensuring that environmental considerations in day-to-day work are completely integrated in the decision-making processes of the organisation, helping SPR to achieve environmental goals and pursue continual improvement. As part of the site maintenance programme, regular site visits are undertaken throughout the year over the lifetime of the development, to review landscaping/mitigation provisions in order to ensure their ongoing maintenance and if necessary, arrange replacements, if planting is unsuccessful.
- 8.1.3 The construction site manager, landscape contractor(s) and any landscape management group(s) will be responsible for the practical undertaking of works described in this plan.
- 8.1.4 The habitat intervention measures detailed in this plan should be implemented by a suitably qualified professional and appropriately experienced and where necessary qualified contractors. All works to be undertaken with heavy machinery should be carried out by appropriately experienced and where necessary, qualified operator(s).
- 8.1.5 All material, operations, workmanship and quality should be carried out in accordance with the relevant British Standards, HSE standards or appropriate code of practice.
- 8.1.6 The LEMP must be carried out under the guidance of an appropriately experienced ecologist (the "project ecologist") and where the prescriptions require, an on-site ecological watching brief should be provided by an appropriately experienced Ecology Clerk of Works (ECoW).
- 8.1.7 Suitably experienced ecologists should be appointed for these roles prior to implementation of the LEMP and they should be informed in good time, of all activities programmed.
- 8.1.8 Site inductions and toolbox talks provided to all contractors and site workers, including landscape contractors, prior to the commencement of works in any phase or sub-phase of the development should include detailed reference to the requirements of this plan. Where considered necessary, onsite instruction of contractors should be undertaken by the project ecologist or ECoW.
- 8.1.9 All site workers and landscape contractors should be informed of the role of the project ecologist and ECoW. Contact details for the project ecologist and ECoW should be made available to site workers and contractors as requested or required.

- 8.1.10 A copy of this plan should be kept on site at all times during construction and site workers should be made aware of its location and/or who to contact in order to review a copy of the plan when necessary.
- 8.1.11 Any known breaches of the requirements of this plan should be reported to the project ecologist as soon as practicable. Should a breach of the requirements of the plan occur, the project ecologist should be responsible for reporting this breach to the Developer and construction site manager as soon as practicable. Where necessary, the project ecologist or the Developer should report any breaches to the Local Planning Authority (LPA) and / or Natural England.

8.2 Legal Agreements

- 8.2.1 For significant on-site habitat enhancements delivering BNG, The Developer (and/or any future successor(s)) must have a legal agreement or planning condition. Significant enhancements are areas of habitat enhancement which contribute significantly to the proposed development's BNG, relative to the biodiversity value before development. This can be:
 - habitats of medium or higher distinctiveness in the biodiversity metric.
 - habitats of low distinctiveness which create a large number of biodiversity units relative to the biodiversity value of the site before development.
 - enhancements to habitat condition, for example from poor or moderate to good.
- 8.2.2 The proposed ecological features in this LEMP are considered to fit within the above criteria therefore a legal agreement or planning condition will be sought. This will secure the LEMP for BNG and set out who will deliver the proposed ecological features. The agreement for on-site gains will last for at least 30 years from the date the development is complete.
- 8.2.3 Two types of legal agreements for BNG are available:
 - Planning obligation (Section 106) with the Local Planning Authority (LPA).
 - Conservation covenant agreement with a responsible body.
- 8.2.4 The chosen legal agreement will be informed by legal advice and will be in writing and signed by all parties.
- 8.2.5 This process will follow guidance given by DEFRA (Department for Environment, Food and Rural Affairs, 2024b).

9 Monitoring and remedial measures

9.1 Monitoring

- 9.1.1 Monitoring the ecological features during the life of the LEMP is key to understanding the progress of the habitat interventions. Monitoring will consist of the following:
 - habitats will be classified using the UK Hab survey methodology (UKHab Ltd, 2023).
 - The extent of each target habitat will be measured.
 - The condition of each habitat will be assessed following the Statutory Metric methodology (Natural England, 2024a).
- 9.1.2 The information gathered through the monitoring visits will be assessed against the target habitats, conditions and objectives set out in Section o. Timing of the monitoring visit should be undertaken at the appropriate time of year to provide a robust assessment. These timings are displayed in Table 9, set out by ecological feature and including target habitat, condition, likely time the feature will take to reach its target condition and suggested monitoring years post intervention. The suggested monitoring years aim to ensure successful establishment of the ecological feature, with more years initially to enable the need for remedial action to be taken.
- 9.1.3 Table 9 also provides additional information on specific survey methodologies per ecological feature, where necessary, and potential remedial measures should target condition not be reached.
- 9.1.4 Results of each monitoring visit will be compiled into a short monitoring report for the Site. These should follow BNG monitoring guidance (Natural England, 2024a) and present survey details, summary of progress, an overview of site wide successes and challenges, detailed review of the progress of each ecological feature and a list of actions or adaptive management practices required for the next monitoring period.

Table 9 Monitoring schedule

ID No.	Target habitat	Target condition	Likely time to target condition (years from intervention)	Optimum monitoring season	Suggested monitoring years post intervention	Additional survey methodology information	Potential remedial measures should target condition not be reached.
Gı	Other neutral grassland	Good	15	June/July – before the hay cut	2, 3, 4, 5, 8, 12, 20, 30	Indicator species list to be developed based upon source of green hay, with indicator species monitored in the ecological feature. Quadrats to be used to understand the average species per m ² to enable robust condition assessment.	Supplement meadow with additional green hay, following Prescription G1 in Table 7. Plug plant target species. Consider hemi parasitic plant species if grasses are too dominant.
G2	Other neutral grassland	Moderate	10	May-July – before cutting	2, 3, 4, 5, 8, 12, 20, 30	Indicator species list to be developed based upon seed mix used for Treatments 1 and 2, with indicator species monitored in the ecological feature. Quadrats to be used to understand the average species per m ² to enable robust condition assessment.	Supplement grassland with additional seed, following Prescription G2 in Table 7. Plug plant target species. Consider hemi parasitic plant species if grasses are too dominant.
G3	Modified grassland	Good	8	May-July – before grazing	2, 3, 4, 5, 8, 12, 20, 30	Quadrats to be used to understand the average species per m ² to enable robust condition assessment.	Review stocking density of grazing animals. Review grazing period and rotation. Consider overseeding grassland.
Hı	Species-rich hedgerow with trees	Good	4	May – July – Whilst ground flora is in flower	2, 3, 5, 8, 12, 20, 30		Adjust hedgerow management schedule. Consider if hedgerow sections need rejuvenation through management.
H2	Species-rich hedgerow with trees	Moderate	10	May – July – Whilst ground flora is in flower	2, 3, 5, 8, 12, 20, 30		Adjust hedgerow management schedule. Consider if hedgerow sections need rejuvenation through management.
51	Mixed scrub	Good	10	April – September	3, 4, 5, 8, 12, 20, 30		Adjust scrub management schedule. Plant additional species. Consider coppicing.
Wı	Lowland mixed deciduous woodland	Good	0	Late April/ May – Whilst ground flora is in flower	5, 8, 20, 30		Consider thinning or coppicing. Add more dead wood features.
W2	Other woodland, broadleaved	Moderate	0	Late April/ May — Whilst ground flora is in flower	5, 8, 20, 30		Consider thinning or coppicing. Add more dead wood features.

ID No.	Target habitat	Target condition	Likely time to target condition (years from intervention)	Optimum monitoring season	Suggested monitoring years post intervention	Additional survey methodology information	Potential remedial measures should target condition not be reached.
W3	Other woodland, broadleaved	Poor	5	Late April/ May – Whilst ground flora is in flower	3, 4, 5, 12, 20, 30		Consider thinning or coppicing. Add more dead wood features.
Tı	Individual trees	Good	16	Spring – Autumn – when trees have leaves	5, 8, 20, 30		Consider longevity measures such as pruning or pollarding.
T2	Individual trees	Moderate	27	Spring – Autumn – when trees have leaves	3, 4, 5, 12, 20, 30		Consider longevity measures such as pruning or pollarding.
Fı	Bat boxes	N/A	N/A	Autumn to spring -	5, 8, 12, 20, 30	Visual inspection from ground level will be sufficient with remediation following Prescription No. WM1, Table 8.	Replace degraded boxes
F2	Refugia	N/A	N/A	Autumn to spring	5, 8, 12, 20, 30	Visual inspection by an ecologist with remediation following Prescription No. WM2, Table 8.	Create additional refugia
F3	Hibernacula	N/A	N/A	Autumn to spring	5, 8, 12, 20, 30	Visual inspection by an ecologist with remediation following Prescription No. WM3, Table 8 .	Create additional hibernacula.

9.2 Review process

- 9.2.1 Adaptive management allows for actions and prescriptions to be altered to deliver the desired target habitats, conditions and management objectives based upon continually monitoring the effectiveness of habitat intervention and management strategies.
- 9.2.2 Reviewing this LEMP in line with data collected from the monitoring protocols in Table 9 will enable an informed decision to be made as to if the management prescriptions remain suitable for achieving the desired objectives set out in Section 3.
- 9.2.3 Remedial measures have been suggested in Table 9 however these are not exhaustive and may change over the lifetime of this plan. The report from each monitoring visit will highlight if any remedial measures are needed. The Developer (or any future successor(s)), or their nominated landscape contractor, will be responsible for the implementation of the suggested measure.
- 9.2.4 This document should be reviewed following the production of each monitoring report and updated as necessary. The timetable for the habitat creation and enhancement prescriptions and schedule (Section 7.1) covers 5 years. Follow up reviews following this initial review after 5 years are proposed to occur every 10 years. A review of the information captured within this table should be undertaken at the end of this period and any prescriptions still relevant be carried into the habitat management prescriptions and schedule (Section 7.3).

10 References

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Appendix A – Figures