



Peel Park, Prescott – Phase 1

Landscape and Habitat Creation Scheme

July 2026

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<i>V3</i>				

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1. Introduction

- 1.1 Bowland Ecology Ltd was commissioned by Harris Partnership to produce a Landscape and Habitat Creation Scheme for a development site off Cables Way, Prescott (NGR: SJ 46336 92304).
- 1.2 The development is set to occur in three phases (see Appendix D). Phase 1 outlines the construction of two employment units. Phase 2 outlines the construction of one retail unit and Phase 3 which outlines the construction of a further three retail units.
- 1.3 Planning permission has been granted for Phase 1 of the development. As part of the planning conditions the following condition in relation to ecology was included;

Condition 16. A. Landscape and Habitat Creation Scheme

Prior to the commencement of above ground works (excluding earthworks) for each phase of the development hereby permitted, (as shown on phasing plan reference 1031NESW-140 REV C) a landscape and habitat creation scheme shall be submitted to and approved in writing by the local planning authority. The details to be submitted shall relate to all land surfaces not built upon and shall include, but not limited to:

- a) Land-levels and gradients resulting in the formation of any banks, terraces or other earthworks including details of any retaining structures.*
- b) All proposals for new planting and turfing indicating the location, arrangement, species, sizes, specifications, numbers and planting densities per sqm of all new planting; the planting shall maintain a foraging and commuting corridor along the northern boundary for foraging and commuting bats and other mammals;*
- c) Wildflower planting - including translocation of most diverse areas of grassland at TN4, as indicated on Appendix C Phase 1 Habitat Plan within the Ecology Appraisal by Bowland Ecology dated April 2020.*
- d) An outline specification for ground preparation.*
- e) Where safe to do so, retention of dead tree TN7 for use as a potential roost feature*
- f) Retention of brash piles and deadwood in woodland areas.*
- g) Improvement of the retained woodland to increase and better the understory and ground flora - to include native bluebell planting.*
- h) The proposed arrangements and specifications for initial establishment maintenance and longer-term maintenance of all planted and/or turfed areas.*
- i) Hedgehog and badger highways to be installed in boundary treatments.*
- j) Creation of invertebrate mounds/amphibian refugia/small mammals refugia e.g., hedgehog boxes and bug hotels.*
- k) Installation of bird and bat boxes across the site to include the erection of a mix of 21 box types including 3 owl boxes and bat box installation along northern boundary interior of the site on mature trees.*
- l) timetable for implementation.*

The approved landscaping shall be wholly implemented in its finally approved form for each phase (1031NESW-140 REV C) within the first available planting season following the substantial completion of development within that phase. Any tree or other planting which is lost, felled, removed, becomes diseased, or is substantially damaged within a period of five years thereafter shall be replaced in kind during the first available planting season following the date of loss or damage. The development shall be fully constructed in accordance with the approved scheme in accordance with timescales contained therein.

Existing Site Description

- 1.4 Phase 1 of the development is approximately 1.6 ha in size and is dominated by broadleaved woodland, scrub, semi-improved grassland and introduced shrubs. The surrounding habitats are predominantly residential and commercial with some large areas of urban greenspace in the wider area.
- 1.5 An Ecological Appraisal undertaken in 2020 identified habitats on site suitable for a range of species including bats, amphibians, birds, invertebrates and small mammals. This landscape and habitat creation scheme reflects the habitats present during the survey and the species which may utilise the site. It aims to reduce the loss of habitat and ensure the created habitats still provide opportunities for the above species.
- 1.6 This report should be read in conjunction with BOW17/834 Cables Way, Prescott – Ecological Appraisal (Bowland Ecology, 2020) .

Landscape and Habitat Creation Scheme Overview

- 1.7 The current report provides information towards the discharge of Condition 16, focussing on the ecology-related elements of the condition. Each element of the condition is listed below, with the location of information provided.
- 1.8 The current report is in relation to Phase 1 of the development only.

Table 1: Planning Condition 16 requirements

Condition wording	Location of information	Comments
a. Land-levels and gradients resulting in the formation of any banks, terraces or other earthworks including details of any retaining structures.	Client to confirm	Not ecology related
b. All proposals for new planting and turfing indicating the location, arrangement, species, sizes, specifications, numbers and planting densities per sqm of all new planting; the planting shall maintain a foraging and commuting corridor along the northern boundary for foraging and commuting bats and other mammals.	Landscaping Plan (Vector Design Concepts, Drawing ref: 1031-1VL L02 Rev.C)	Landscaping Plan includes Planting Schedule. The planting layout maintains a foraging and commuting corridor along the northern boundary for foraging and commuting bats and other mammals.
c. Wildflower planting - including translocation of most diverse areas of grassland at TN4, as indicated on Appendix C Phase 1 Habitat Plan within the Ecology Appraisal by Bowland Ecology dated April 2020.	Landscaping Plan (Vector Design Concepts, Drawing ref: 1031-1VL L02 Rev.C) Grassland translocation methods detailed in current report (Section 2)	Landscaping Plan specifies EL1 Flowering Lawn Mixture. Note that grassland at TN4 is located within Phase 2. It is anticipated that some will be translocated into Phase 1, some into Phase 2.

d. An outline specification for ground preparation.	Landscaping Plan (Vector Design Concepts, Drawing ref: 1031-1VL L02 Rev.C)	Landscaping Plan includes specifications re subsoil, topsoil, cultivation and soil ameliorant.
e. Where safe to do so, retention of dead tree TN7 for use as a potential roost feature.	n/a	Tree at TN7 located within Phase 2.
f. Retention of brash piles and deadwood in woodland areas.	Detail included in current report (Section 2).	-
g. Improvement of the retained woodland to increase and better the understory and ground flora - to include native bluebell planting.	Woodland management specifications included in current report (Section 2)	Retained woodland is located within Phase 2 of the development and not covered in this plan. Native bluebell planting should be conducted within the retained woodland.
h. The proposed arrangements and specifications for initial establishment maintenance and longer-term maintenance of all planted and/or turfed areas.	Management specifications for semi-natural habitats included in current report (Section 2). Maintenance of ornamental planting detailed on Landscaping Plan (Vector Design Concepts, Drawing ref: 1031-1VL L02 Rev.C)	-
i. Hedgehog and badger highways to be installed in boundary treatments.	Specifications included in current report (Section 3).	-
j. Creation of invertebrate mounds/amphibian refugia/small mammals refugia e.g., hedgehog boxes and bug hotels.	Specifications included in current report (Section 3).	-
k. Installation of bird and bat boxes across the site to include the erection of a mix of 21 box types including 3 owl boxes and bat box installation along northern boundary interior of the site on mature trees.	Specifications included in current report (Section 3).	The site is not considered suitable for the erection of owl boxes owing to the presence of major roads 200 m west of the site.
l. timetable for implementation.	Included in current report (Section 4).	-

2. Habitat Creation, Enhancement and Management

Other Neutral grassland ('Flowering lawn / meadow mix')

- 2.1 This is mapped as 'Flowering lawn / meadow mix' on the Landscaping Plan

Soil conditions

- 2.2 Prior to commencement of the habitat creation on existing site-won topsoils, soil testing will be required to ensure seed mixes match site conditions. In particular, understanding existing nutrient levels is important and should nutrient levels be particularly high, nutrient stripping methodologies may be required.
- 2.3 All other soil specifications and ground preparation methods are detailed on the Landscaping Plan.

Habitat Creation

- 2.4 The wildflower meadow creation should be undertaken in spring (March/April) or autumn (September/October) when vigorous competition species have either not yet established or are declining. Many native species require exposure to a frost to trigger germination.
- 2.5 The seed must be surface sown and can be applied by machine or broadcast by hand. The seed should then be firmed in with a roll, or by treading, to give good soil/seed contact. Areas should be er be seeded to improve botanical diversity. EL1 Flowering Lawn Mixture by Emorsgate (can be sourced at <https://wildseed.co.uk/>) is specified by the Landscaping Plan as the flowering mix chosen for this habitat creation. Species present within the mix include kidney vetch (*Anthyllis vulneraria*), common knapweed (*Centaurea nigra*), hedge bedstraw (*Galium mollugo*), oxeye daisy (*Leucanthemum vulgare*), birds foot trefoil (*Lotus corniculatus*), bladder campion (*Silene vulgaris*), white clover (*Trifolium repens*), common bent (*Agrostis capillaris*), crested dogs tail (*Cynosurus cristatus*), red fescue (*Festuca rubra*), small cats tail (*Phleum bertolonii*) and smooth stalked meadow-grass (*Poa pratensis*).
- 2.6 It is recommended that at least one of the following species be added to the seed mix: yellow rattle (*Rhinanthus minor*), red bartsia (*Odontites verna*) and eyebright (*Euphrasia* sp.). These species are hemi-parasitic of grasses which maintain open grassland swards structure and increase success of other flowering species. These should be seeded in autumn, allowing for a sowing rate of 0.1g/1m². This can either seeded directly to bare ground be at the time of initial seeding of EL1, or can be introduced in subsequent years, to localised areas of scarification.

Maintenance

- 2.7 During the first year the seed should be kept watered to ensure that there is healthy growth whilst the seeds are establishing. To control the flush of annual weeds within the first growing season there should be two or three cut-and-collects between April and September & remove arisings to prevent the plants setting seed.
- 2.8 From then onwards the site should be subject to an annual cut-and-collect in late summer or autumn. No cuts shall be undertaken between May and mid-July, to allow plants to flower and set seed to ensure regeneration. Following the late-summer cut, arisings should be left

for 2-3 days (and turned if possible), such that seed can fall from cuttings to the ground. If there is sufficient growth in Autumn, an additional cut shall be undertaken to control the vigour of grasses as well as reduce soil nutrients. An early spring cut could also be undertaken if there has been grass growth over the winter period. This can also help create open microhabitats suitable for the establishment of less-competitive species.

- 2.9 It is important that the arisings are removed from the grassland to keep soil conditions nutrient poor, which favours less vigorous native grass species and flowers. Arisings can be used to create compost or grass cutting piles which can be used by local wildlife such as reptiles for egg laying.
- 2.10 Checks in late spring and mid-summer should be conducted for rank or injurious weeds (such as creeping thistle and docks (*Rumex* sp.)) which should be hand pulled or if absolutely necessary spot treated with herbicide, to prevent these species from outcompeting less vigorous native species.

Grassland Translocation

- 2.11 Development Phases 1 and 2 have the most space available to act as receptor sites for grassland translocation. Species-diverse grassland is present within the Phase 2 section of the site, located at TN4 (see Appendix A). This must be protected from site disturbance with clearly signed fencing, such that it is not damaged prior to translocation. Annual cuts can be taken from the grassland as per above.
- 2.12 The turf should be relocated when no further disruption to the ground surface at the receptor areas is expected. This could be during construction or after the completion of the phase. The turf should be translocated in either early spring (March-April) or autumn (September – October), weather dependent. Weather conditions during these months are most likely to support root establishment.
- 2.13 It is of note that species recorded as present within the grassland sward by the 2020 ecology survey indicate potentially very shallow soils (e.g. common centaury, yellow-wort), which may cause difficulties with translocation. An ECoW will be on site throughout and grassland translocation, to advise on / approve any adaptive techniques. If movement of turves by machine is more effective in terms of retaining soil structure, this will be chosen as the method going forwards.

Method

- 2.14 The receptor site should be prepared before any turf is removed from the ground. To prepare the receptor site for the donor turf the land should be stripped of any previous vegetation and remain bare and level with the site's gradient. The ground should be tilled to a depth of 10 cm and then raked over to create a smooth surface. The receptor sites should be small areas approximately 80 cm by 80 cm wide and located in various areas in the created grassland. Before the donor turf is laid the receptor site should be watered to help the binding of roots to the new soil from the turf.
- 2.15 Soil testing at the receptor site (see Paragraph 2.2) will be important, as the species present at the donor site are indicative of very low soil nutrient levels and an open sward.
- 2.16 Soil can be translocated by hand or machine. If the soil is translocated via machine, the method of turf excavation and translocation is summarised below:

- An ecological clerk of works will supervise all grassland translocation.
- Prior to digging up the turf it should be wetted for 5-10 minutes to reduce the risk of damaged to roots whilst extracting the turf.
- Machinery must not track over the species-rich grassland to be translocated.
- Ensure weather conditions are suitable. Avoid periods of drought, excessive rain or frost.
- Site staff are made aware of the importance of handling turfs carefully and minimising disturbance as much as possible during excavation and transportation.
- Extract surface vegetation together with as much of the underlying soil as possible within a single scoop, using a wide, bladed/smooth-edge bucket. Where appropriate, this will be completed with a forward-facing digger bucket, to undercut roots and minimise the need to tear into any vegetation from above.
- All vegetation to be placed in a single layer, vegetation side up, on a flat-bed truck or similar. Turfs are to be handled as little as possible.
- Keeping vegetation upright, carefully remove turves from flat-bedded truck and place over prepared ground and gently firmed into position. Use a minimum of machinery handling and bucket movements, to preserve the structure of soils as much as possible.
- All activity will be undertaken as swiftly as possible to minimise the length of time that the turves are exposed (maximum 1 hour).

2.17 If translocation is to be undertaken by hand, the methodology is summarised below:

- Prior to digging up the turf it should be wetted for 5-10 minutes to reduce the risk of damaged to roots whilst extracting the turf.
- The turf should then be cut into squares approximately 40 by 40cm wide using a garden fork or shovel slide the tool underneath one of the squares at least 5 cm deep. The turf should be placed into a flat wheelbarrow/truck to limit damage to the soil structure and root systems during transport.
- Approximately four small squares of turf should fit into one receptor site. There should be no gaps between the four turf sections, if any gaps are present, they should be filled with soil from the donor site.
- Once the square turf has been removed from the donor site it should be translocated within 1 hour to the receptor site.

2.18 Once the turfs are in place, mild compaction may be required to ensure they key together. The ground should be watered immediately and evenly to ensure the roots bind with the pre-soaked receptor sites soil. The turf should then be kept consistently moist for the first three weeks to aid deep and healthy growth. Disturbance, including foot traffic should be avoided.

Maintenance

2.19 The turf should first be cut once the growth reaches 10 cm. After two months no additional maintenance will be required and measures outlined within other neutral grassland maintenance can be followed. The translocated turf should be inspected annually for 5 years. Any failed patches will be assessed for likely causality, and remedial measures prescribed.

Invasive species Management

2.20 Invasive species identified within the PEA report (Japanese knotweed (*Reynoutria japonica*), bamboo (*Phyllostachys* spp.), rhododendron (*Rhododendron ponticum*) and Himalayan balsam (*Impatiens glandulifera*)) should be removed with ongoing monitoring to ensure they

do not re-establish on site. A specialist should be sought for Japanese knotweed eradication via herbicide due to the sensitivity of the plant. This typically takes three years to completely eradicate with annual checking required for three years after to ensure it is not re-established. Similarly, bamboo, depending on the species, will often require physical and chemical methods to remove the species. Again, this will require a three-year treatment with annual checks for the following three years.

- 2.21 Himalayan balsam can be managed by cutting or pulling before the seeds set between June and October, making the best time to manage it in spring. For small patches a 'balsam bashing' method can be applied, by uprooting the plant and snapping above the lowest node to prevent regrowth. The stems must be crushed to stop them, re-rooting. Alternatively, the plants can be trimmed before seeding, this method must be repeated to ensure no plants are allowed to develop viable seeds. A chemical control method is available for balsam.
- 2.22 Rhododendron can be removed from site either through manual removal, chemical control or a combination of both. Removal should occur before the seeds mature and disperse between September and February. Manual removal, followed up by a treatment of herbicide to the cut stumps within 24 hours of cutting (typically glyphosate) to cause the roots to die back. As the rhododendron identified on site is a small strand this method is deemed suitable. Any small shoots can be manually removed but must be removed from site or burnt to prevent re-rooting. Burying rhododendron is covered in the Waste Management and Licensing Regulation (1994) and the fires must be controlled.

Maintenance

- 2.23 Where invasive species are identified there should be checks for the years following the treatment to ensure that the species does not re-establish and dominate the woodland floor.

Native Scrub

Habitat Creation

- 2.24 Within the phase 1 landscape plan a 'native buffer mix' has been identified which will be created to the north of the area of tree planting.
- 2.25 Shrubs will be planted in the autumn as bare root whips in mixed groupings to create a natural growth form with a scalloped edge. Whips should be protected from grazing and browsing mammals with tubes or other suitable plant protections. The native shrub planting should follow the measures outlined below within Individual Trees (see Paragraphs 2.27 – 2.31) for the establishment and management of the newly planted shrubs.

Maintenance

- 2.26 The scrub will be allowed to develop a dense, bushy growth form with continuity of habitat. Pruning should only be carried out to maintain access and prevent significant encroachment onto other habitats with approximately one third of the scrub edge cut each autumn/winter to maintain structural diversity and prevent encroachment. Any die back or die off should be replaced with the same or similar species from the list within the phase 1 landscape plan. No flailing or heavy cutting back will be permitted as this can damage shrubs and increase the risk of fungal infection or dieback.

Individual Trees

Habitat Creation

- 2.27 The size, location, species and number of trees planted can be found within the Phase 1 Landscaping Plan. Trees will be planted approximately 1.5-2m apart in prepared pits and supported with stakes and suitable young tree protection, watered in well at the time of planting. Mulching of the trees may be utilised to provide nutrients for the first 1-2 years of growth, which may include an application of well-rotted farmyard manure placed around the base of each tree or other organic mulch (e.g. seaweed). The mulching should be to a depth of approximately 50 mm and should not touch the trees.
- 2.28 Trees should be planted in the autumn, once the vegetation has died down. The trees should be watered every day for two weeks to aid establishment then watered every 2-3 days for the next four weeks. Then for following eight weeks they should be watered during any prolonged periods of drought. Any newly planted and retained trees should have root protection areas in place to ensure that they will be free from any impact from the development either during or after construction.
- 2.29 The following tree species are listed by the Planting Schedule. Locally native species are bold:
- Field maple (*Acer campestre*)
 - **Silver birch (*Betula pendula*)**
 - Beech (*Fagus sylvatica*)
 - Scot's pine (*Pinus sylvestris*)
 - **Wild cherry (*Prunus avium*)**
 - **English oak (*Quercus robur*)**
 - **Rowan (*Sorbus aucuparia*)**
 - **Small leaved lime (*Tilia cordata*)**

Maintenance

- 2.30 The trees should be checked for the first two years after planting to ensure that they are growing and established within the soil. As outlined above, nutrients may be required to support the growth of the trees, where needed it should be applied carefully to avoid nutrient enrichment of the surrounding areas.
- 2.31 Where needed weeding around the bases of the trees may be required to give the tree space to grow and establish within the soil. If there are dead branches on the tree within the first three years, these should be removed to encourage regrowth. If using stakes-and-guards, it is to be ensured that they do not damage growing trees/shrubs and that they are removed once the shrubs and trees are established or loosened to avoid impacting the tree/shrub. This should be implemented not only within individual tree planting but within shrub and woodland creation as well.

3. Species-specific Habitat Creation

Bats

- 3.1 Twenty bat boxes comprising a combination of Schwegler 2FN or 2F bat boxes will be installed retained trees, dark areas of buildings and on mature trees on the northern boundary of the site. Ten of the bat boxes should be installed after the completion of phase 1.
- 3.2 The following bat boxes will be installed:
- 10x 2FN Schwegler Bat Box. These can be sourced from the link below:
<https://www.nhbs.com/2fn-schwegler-bat-box>
 - 10x 2F Schwegler Bat Box (General Purpose). These can be sourced from the link below:
<https://www.nhbs.com/2f-schwegler-bat-box-general-purpose>
- 3.3 Bat boxes can be installed in clusters of two or three on the same tree or adjacent trees, which will face between south-east and south-west to provide varying conditions depending on weather conditions. Boxes will be installed with the flight paths to the entrance unobstructed, at a height of 4-5 m above ground level and will be located away from sources of artificial illumination. These must be installed using aluminium nails into the main stem of the tree.
- 3.4 The retention of the lines of trees around the east and south of the development and the creation of woodland to the north of the Phase 1 plan retains a commuting corridor for bats.

Maintenance

- 3.5 Bat droppings may typically accumulate within these types of boxes should they be in use over long periods including maternity season and hibernation. However, droppings are not likely to accumulate to a level likely to cause problems for future habitation, where installed correctly, therefore, cleaning is not a necessity. As bats and their habitats receive legal protection, if cleaning of the boxes is required, this should be undertaken in the presence of a suitably licensed bat ecologist. Damaged boxes should be repaired or replaced over time under supervision of a suitably qualified ecologist.

Birds

- 3.6 21 bird boxes comprising different types to suit different species will be installed on suitable retained trees. 50% of the bird boxes should be installed after the completion of phase 1, within the habitats created during that phase. The site holds limited habitat suitable for owl boxes with the presence of the M56 200 m west of the site and the lack of suitable connecting habitat.
- 3.7 The following bird boxes (or similar) will be installed.
- 3x 1B Schwegler Nest Box 26mm entrance hole. These can be sourced from the link below:
[1B Schwegler Nest Box | NHBS Practical Conservation Equipment](#)

- 3x 1B Schwegler Nest Box 32mm entrance hole. These can be sourced from the link below:
[1B Schwegler Nest Box | NHBS Practical Conservation Equipment](#)
- 3x 1B 2GR Schwegler Nest Box. These can be sourced from the link below:
[2GR Schwegler Nest Box | NHBS Practical Conservation Equipment](#)
- 3x 2M Schwegler Nest Box. These can be sourced from the link below:
<https://www.nhbs.com/2m-schwegler-nest-box>
- 3x 2H Schwegler Robin Box. These can be sourced from the link below:
[2H Schwegler Robin Box | NHBS Practical Conservation Equipment](#)
- 3x 2H Schwegler 2B Tree Creeper Nest Box with Predator Protection. These can be sourced from the link below:
[Schwegler 2B Tree Creeper Nest Box with Predator Protection | NHBS Practical Conservation Equipment](#)

- 3.8 Bird boxes will be installed at a height of between 1.5m and 3m high and facing between north and north-east, sheltered from the prevailing wind and avoiding the full heat of the sun. Open fronted boxes will be located away from any potential perches for predators and should be sited in vegetation such as ivy to provide cover for the nest.

Maintenance

- 3.9 Cleaning/maintenance should be undertaken between September to February (inclusive), outside of the nesting bird season to prevent issues with persistent disease or parasites. It is advisable to wear gloves and a dust mask when cleaning out bird nest boxes. The old nesting material which accumulates after every breeding season and the droppings from the earlier season should be removed. This can be undertaken without a specific licence, although in the unlikely event that active nests are located, these should remain unaffected until all chicks have fledged. Damaged boxes should be repaired or replaced over time.

Badger and Hedgehog Pathways

- 3.10 Hedgehog and badger highways should be installed in the boundaries of the site, where any fencing encloses or partially encloses the site. This is primarily along the northern boundary, where retained and created habitat provides opportunities for foraging and commuting. The badger and hedgehog pathways should be installed as soon as Phase 1 construction has been completed.
- 3.11 Badger gates should ideally be located along current mammal trails. Initially the gap within the fence should be left open with the flap either not present or held above the gap, to allow badgers to become familiar with the gate. Three months later the flap should be added. The gate should be installed level with the ground, so the floor block sits at ground level. Alternatively the gaps in the fences can be left open with no formal badger gate. The gap should be approximately 25 cm by 20 cm. The badger gate for Phase 1 of the development should be placed so it is leading onto the 'native buffer mix', see Appendix B with suggested locations. The badger gate should have a clear path, free of any obstacles.
- The badger gate can be sourced from the link below:
[Softwood Badger Gate | NHBS Practical Conservation Equipment](#)
- 3.12 Hedgehogs are a natural prey of badger and whilst there is limited evidence to suggest that hedgehog highways are a predation hotspot the two should be kept separate. It is recommended that badger gates are at least 15 m from a hedgehog highway.

- 3.13 The hedgehog gates should be installed in the base of fence or alternatively the fences can be raised, leaving a gap of 15 cm which will also allow the movement of hedgehogs between habitats. Hedgehog gates should have tall vegetation surrounding the exit/entry path so they are not emerging into open ground. Four hedgehog highways should be installed during Phase 1 of the development. These should be spaced along the fence line to allow hedgehogs to forage and up and down the site. If the fences are lifted as an alternative to installing hedgehog highways this should still be done within the four locations suggested in Appendix B.

- The hedgehog highways can be sourced from the link below:
[Eco Hedgehog Hole Fence Plate | NHBS Practical Conservation Equipment](#)

Maintenance

- 3.14 The fencing should be checked to ensure that no metal is likely to harm or injure any passing hedgehogs or badgers. There should be no obstructions preventing the passing of mammals through the gates including litter, dead wood and other debris. Where the pathway is obstructed, the obstruction should be cleared.

Small Mammal Refugia

- 3.15 To compensate for the loss of habitat suitable for hedgehog and other small mammals' hedgehog nest boxes should be installed and piles of log and brash should be created. Hedgehog box entrances should be facing between east and south and located in a quiet shaded area such as against a wall or within scrub hedgerows or the retained central woodland. The box should be covered with leaves, twigs and loose branches to camouflage it from predators, provide insulation and provide cover.
- 3.16 Wood from tree clearance and brash from vegetation clearance should be retained on site. The materials should be neatly made into piles between 30 cm and 50 cm tall. These should be placed in sheltered areas, away from disturbed from cars and foot traffic. This will help create additional features for sheltering small mammals, amphibians and invertebrates.
- 5x Hedgehog nesting boxes which can be sourced from the link below:
<https://www.nhbs.com/hedgehog-nest-box>

Maintenance

- 3.17 Cleaning or maintenance should be done either in April or in October and only done if the nest boxes are empty. If the boxes are occupied or thought to be occupied (can be monitored with trail cameras or a twig in front of the entrance to detect movement) the boxes should be left undisturbed. If unoccupied remove all old bedding and scrub using hot water only and leave to dry.

Amphibians

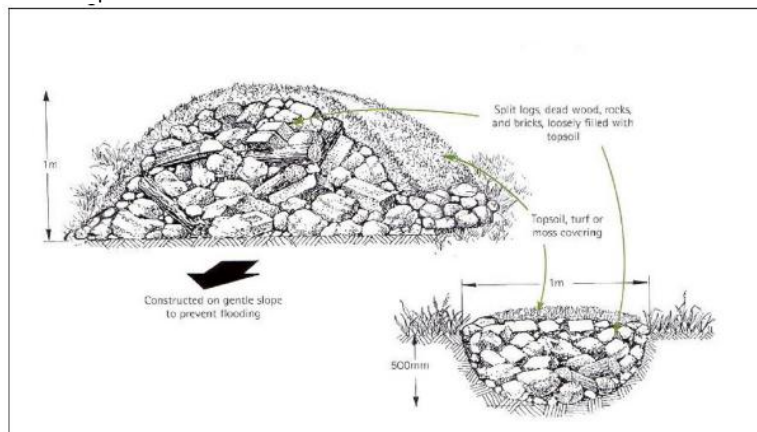
- 3.18 In order to compensate for the loss of potential resting and hibernation features three hibernacula formed of dead wood, rock and log piles created from vegetation removal at the Site should be placed within suitable locations within the Site. These can include central areas which will remain unimpacted by the development areas of new habitat creation which will receive low levels of disturbance. Two should be created in phase 1, due to the proximity of the pond habitats.

- 3.19 Hibernacula will be created by digging a hole approximately 50cm deep and 1.5 metres wide and burying logs, rocks and old bricks to a depth of 0.5m in these areas, leaving gaps between bricks and logs. Insert tubes/old drainpipes at ground level which enter the hole, and cover with turf, vegetation, soil and small dead wood vegetation to approximately 50cm in height.

Maintenance

- 3.20 Hibernacula areas should be allowed to become overgrown by vegetation and will require no maintenance unless disturbed.

Figure 1: The side profiles of a hibernacula.



Invertebrates

- 3.21 In order to compensate for the loss of suitable invertebrate habitat such as the scrub, deadwood and other neutral grassland three invertebrate mounds/insect hotels should be created. These should be placed in a variety of habitats with at least one within a shaded area (I.E under trees) and one with direct sunlight on the south facing side. A typical insect hotel will be constructed with layers of pallets. The insect hotel should be no more than a metre high (five pallets) and supported at the base to reduce the risk of collapse. The layers should be filled with a mixture of sticks, bamboo canes, pinecones, dry leaves, bark, hay or straw, deadwood, tiles, pipes, bricks and rubble. The top of the insect hotel should be of a waterproof material to stop rainwater ingress.
- 3.22 Two should be created during phase 1.

Maintenance

- 3.23 No maintenance is required for insect hotels. However, they should be checked yearly to ensure they are still intact and rebuilt where they are not.

4. Schedule of Implementation

4.1 The implementation of the habitat creation and maintenance outlined in section 1 is summarised in the table below. This table outlines the key habitat creation and maintenance features. A comprehensive list of management and monitoring can be found in Appendix E.

Table 2: Overview of action plan.

Associated Management Plan (Appendix E)	Action	Year of management / monitoring					5-30*	
		1	2	3	4	5		
Grassland enhancement / creation								
01	Sowing of an appropriate grassland seed mix	Spring / Autumn	-	-	-	-		
01	Cut of grasslands and removal of arisings.	-	Autumn & early Spring	Autumn & early Spring	Autumn & early Spring	Autumn & early Spring	-	Autumn & early Spring
01	Translocation of grassland turf from donor site to receptor site and a following check to ensure the tuft had established within the receptor site.	Spring / Autumn	Spring	-	-	-		
Individual trees								
04	Trees are planted in the Autumn annually checks for the following two years at any time of year. Any failed trees should be replaced in the Autumn.	Autumn	-	-	-	-	-	

04	Trees are checked to ensure they are establishing within the soil and where needed assistance is given.	Any time of year	Any time of year	Any time of year	-	-	-
Scrub creation							
05	Cut one third of scrub edge when required.	Autumn / winter	Autumn / winter	Autumn / winter	Autumn / winter	Autumn / winter	Autumn / winter
Invasive species management							
07	Japanese knotweed eradication by herbicide.	Summer	Summer	Summer*	-	-	Summer
07	Himalayan balsam control by cutting / pulling.	Spring	Spring	Spring	Spring	Spring	Spring
07	Bamboo removal by mechanical or chemical control	May - September	May - September	May - September	-	-	Spring
07	Rhododendron control by mechanical or chemical control	September-February	September-February	September-February	-	-	September-February
Additional features							
08	Installation of bat boxes.	Winter/ Spring	-	-	-	-	Repair as & when
08	Installation of bird boxes.	Winter/ Spring	-	-	-	-	Repair as & when
08	Installation of badger and hedgehog pathways.	Any time of year	-	-	-	-	Repair as & when

08	Installation of small mammal shelters.	Any time of year	-	-	-	-	Repair as & when
08	Creation of hibernaculum.	Spring / Autumn	-	-	-	-	-
08	Creation of insect hotels.	Any time of year	-	-	-	-	Repair as & when
*: All actions to be subject to adaptive management							

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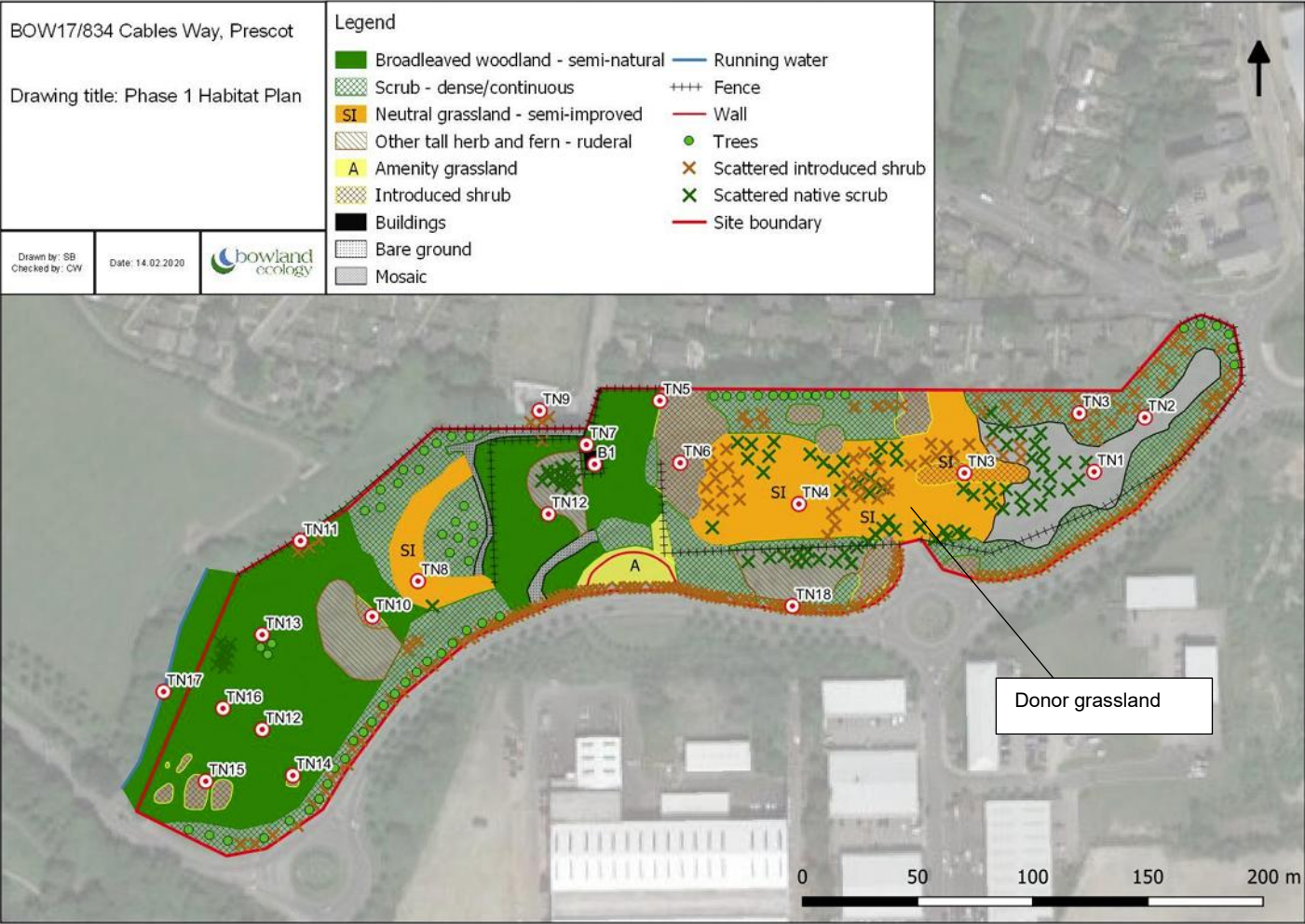
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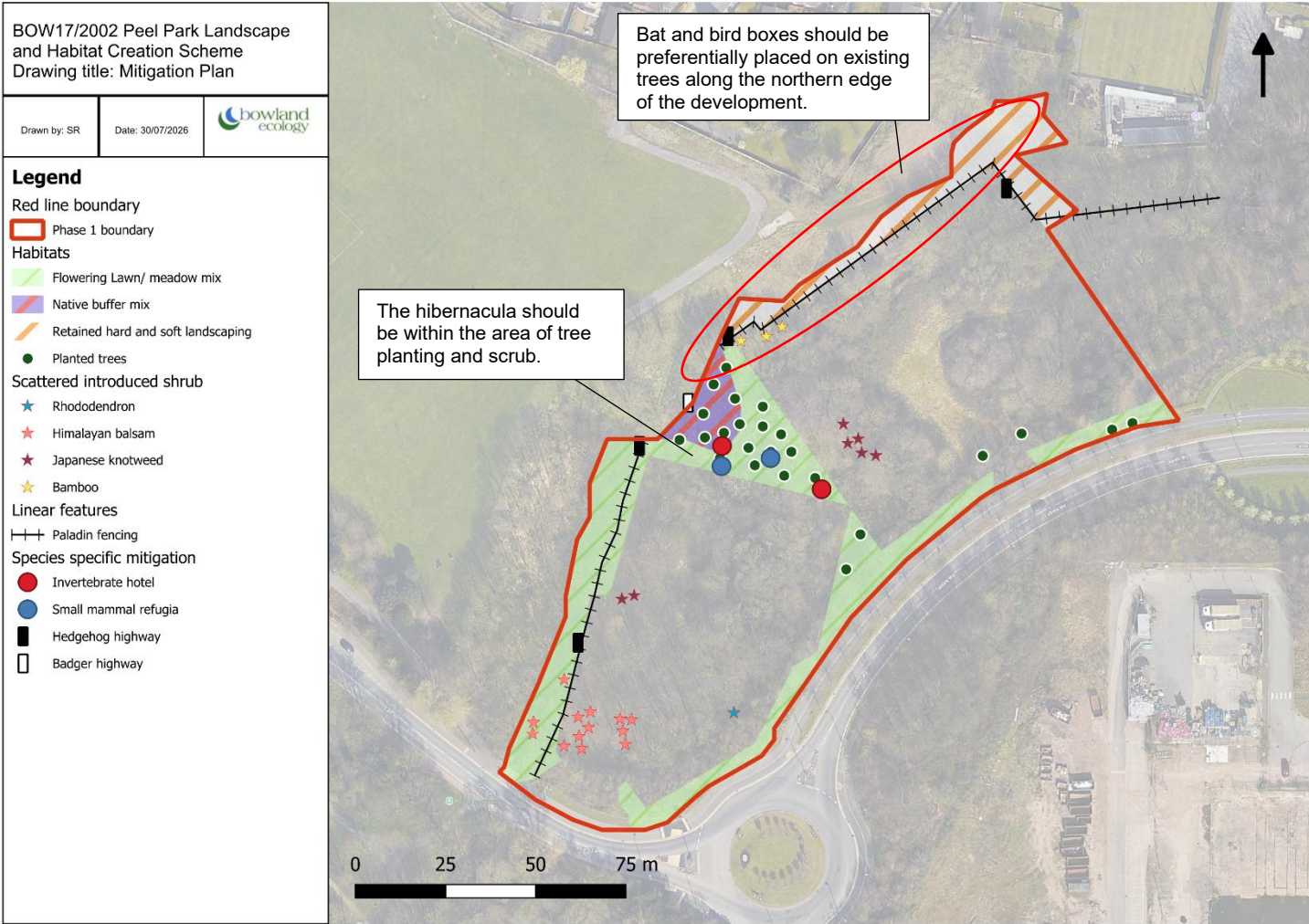
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Appendix [A] – Phase 1 Habitat Survey



Appendix [B] – Mitigation Plan and Grassland Translocation Plan







Appendix [E] – Timetable for Management and Monitoring

GRASSLAND MANAGEMENT								Project number: 01				
Action	Purpose	Timing	Year									
			1	2	3	4	5					
Remove all cuttings and leaf litter from scrub cutting - either chip and use to create footpaths, use to create log piles / dead hedges or take off site.	To avoid smothering grassland and soil enrichment.	Immediately after cutting	x	x	x							
Grass cut in Spring and Autumn	Cutting the vegetation too early will remove any annual species that have not had chance to set seed. The second cut can help create open microhabitats suitable for the establishment of less-competitive, specialist species An optional third cut can be done if growth is significant but this should avoid the main flowering season (April to June).	March and August/September	x	x	x	x	x					
During the flowering season of April to August, the field will not be cut. If & when weather conditions allow, the cut will be delayed until September.	This allows flowers to bloom and set seed. September cuts will allow the persistence of late-flowering species.	Mid-April – August / September	x	x	x	x	x					
Protection of grassland from disturbance.	To reduce current excessive levels of disturbance.	Any time of years	x	x	x	x	x					
Individual trees								Project number: 04				
Action	Purpose	Timing	Year									
			1	2	3	4	5					
Check the newly planted trees and remove any dead branches or twigs from the tree.	Reduces the risk of harm to tree via fungal infection.	October – February (outside of nesting bird season)	x	x	x							
Hand weeding around the base of the tree.	Reduces competition for the sapling and increases the chance of the tree establishing. High levels of competition around the tree may lead to unsustainable growth which could reduce the lifespan of the tree.	Summer	x	x	x							

Check of plastic guards to ensure that they are not causing harm to the growing tree and that they are not causing litter within the habitat	The plastic guard may dig into the tree and negatively impact growth. The plastic guard may encourage swept growth and reduce the stability of the tree at maturity. Any plastic guards not attracted to trees should be removed from the area.	Any time of year	x	x	x		
SCRUB Creation Project number: 05							
Action	Purpose	Timing	Year				
			1	2	3	4	5
Cut one third of scrub edge where required.	To retain habitat area whilst ensuring no encroachment into adjacent habitats. Allows two thirds of the habitat edge to flower / produce berries each year and promotes structural variation. Allows structural diversity to naturally occur.	February	x	x	x	x	x
Initial aftercare of planted trees / scrub. Minimise the use of fertiliser and herbicide wherever possible.	To ensure best chances of survival.	Apr - Sept	x				
INVASIVE SPECIES CONTROL Project number: 07							
Action	Purpose	Timing	Year				
			1	2	3	4	5
Himalayan balsam							
Identify all areas of Himalayan balsam on site and pull up all visible plants and either: crush / snap stem beneath first node, cut stems at base (below first node) and/or drape pulled plants over nearby fences or tree branches off the ground. When clearing balsam in early summer, new plants may germinate later in the summer, so it is important to go back and repeat treatment two or three times before the winter. Seeds may remain viable for up to two years, however given the extent of balsam on site, it may take several years of revisits to control the extent of the plant.	Himalayan Balsam grows in dense stands that suppress native flora and it flowers between July and October. When the seed pods mature, they explode when touched, scattering the seed up to 7 metres away. To fully eradicate Himalayan Balsam from a site, a key objective is to exhaust the plant's seed bank. This is done by repeatedly removing adult plants before they set seed.	May - June	x	x	x	x	x
Japanese knotweed							

Identify all JK plants on site and weed wipe / inject stem with herbicide (to be applied by trained operator). Glyphosate is the only herbicide to effectively control knotweed.	Japanese knotweed vigorously invades natural habitats and out competes native plants. Japanese knotweed forms tall thickets that exclude all other vegetation, shading the area below. Manual removal is not considered appropriate at this site. Using a weed wiper, or injecting herbicide directly into stems (instead of spraying) reduces impacts to surrounding habitats and wildlife.	July	x	x	x		x
Bamboo							
Each cane of bamboo is injected with herbicide (to be applied by trained operator). Glyphosate is the most effective herbicide against bamboo. The site should be inspected weekly during the first growing season after the treatment. Any new canes should be treated. During the second growing season this can be reduced to monthly checks	Bamboo can establish quickly and impact building foundations, water pipes and roads. The root systems are extensive and will often impact surrounding areas.	May-September	x	x	x		x
Rhododendron							
Each rhododendron plant should be removed physically and treated with herbicide (to be applied by trained operator). Any removed material should be removed from site and disposed of at a suitable controlled waste centre. Alternatively, waste can be burnt on site.	Rhododendron can grow in dense strands and shade out other species. Its leaf litter can alter the PH of the soil and create unsuitable growing conditions.	September-February	x	x	x		x
Species Mitigation							
Project number: 08							
Action	Purpose	Timing	Year				
			1	2	3	4	5
Check bat boxes.	To ensure they are intact and clear from debris.	January - March	x	x	x	x	x
Check bird boxes.	To ensure the bird boxes are intact and still provide suitable nesting habitat for birds. To remove and berberis and rubbish present within the bird box.	Outside bird nesting season, between September and February	x	x	x	x	x
Check badger and hedgehog pathways.	To ensure that they are free from debris and that badgers and hedgehogs can still pass through.	Any time	x	x	x	x	x

	The fence should be checked to ensure it is intact and no posing a risk of catching onto any small mammals which may utilise the pathways .						
Check the small mammal refugia.	The hedgehog boxes should be checked and cleaned to reduce the risk of diseases spreading.	April or October	x	x	x	x	x
Check invertebrate hotels.	They should be checked to ensure that they are still structurally sound and not posing a risk to the wider environment. Where any have collapsed, they should be rebuilt.	Any time	x	x	x	x	x

Appendix [F] – Legal Information

This report provides guidance of potential offences as part of the impact assessment. This report does not provide detailed legal advice and for full details of potential offences against protected species the relevant acts should be consulted in their original forms i.e. The Wildlife and Countryside Act, 1981, as amended, The Countryside and Rights of Way Act 2000, The Natural Environment and Rural Communities Act, 2006 and The Conservation of Habitats and Species Regulations 2017.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Species that are protected by European and national legislation			
Badger	Protection of Badgers Act 1992	Wilfully kill, injure or take a badger; Intentionally or recklessly damage, destroy or obstruct access to a badger sett; Disturb a badger in its sett. It is not illegal to carry out disturbance activities in the vicinity of setts that are not occupied.	Where required, licences for development activities involving sett loss, damage or disturbance are issued by Natural England (NE). Licences for activities involving watercourse maintenance, drainage works or flood defences are issued under a separate process. Licences are normally not granted from December to June inclusive because cubs may be present within setts. https://www.gov.uk/badgers-protection-surveys-and-licences
Bats <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately ¹ capture, injure or kill a bat; Deliberate disturbance ² of bats; Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.	An NE licence in respect of development is required in England. https://www.gov.uk/bats-protection-surveys-and-licences <i>European Protected Species: Mitigation Licensing- How to get a licence</i> (NE 2010) <i>Bat Mitigation Guidelines</i> (English Nature 2004) <i>Bat Workers Manual</i> (JNCC 2004) <i>BS8596:2015 Surveying for bats in trees and woodland</i> (BSI, 2015)
	Wildlife and Countryside Act 1981 (as amended) ⁴ S.9	Intentionally or recklessly ³ obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Birds	Conservation of Habitats and Species (Amendment) Regulations 2012	N/A	Authorities are required to take steps to ensure the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat. This includes activities in relation to town and country planning functions.
	Wildlife and Countryside Act 1981 (as amended) ⁴ S.1	Intentionally kill, injure or take any wild bird; Intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; Intentionally take or destroy the nest or eggs of any wild bird. Schedule 1 species Special penalties are liable for these offences involving birds on Schedule 1 (e.g. most birds of prey, kingfisher, barn owl, black redstart, little ringed plover). Intentionally or recklessly ³ disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species.	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety. https://www.gov.uk/wild-birds-protection-surveys-and-licences https://www.gov.uk/prevent-wild-birds-damaging-your-land-farm-or-business
Other species			
Rabbits, foxes and other wild mammals For BAP species and Species of Principal Importance, see below	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Natural England provides guidance in relation to rabbits (Technical Information note TIN003, Rabbits- management options for preventing damage, July 2007) and foxes (which are also protected under the Wildlife and Countryside Act 1981 from live baits and decoys, see Species Information notes SIN003 (2011), <i>Urban foxes</i> and SIN004 (2011) <i>The red fox in rural areas</i> as well as other wild mammals. Lawful and humane pest control of these species is permitted.

¹ Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing ² Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong. Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided. Thus deliberate disturbance that does not result in either (a) or (b) above would be classed as a lower level of disturbance. ³ The term 'reckless' is defined by the case of Regina versus Caldwell 1982. The prosecution has to show that a person deliberately took an unacceptable risk, or failed to notice or consider an obvious risk. ⁴ The Wildlife and Countryside Act (1981)

has been updated by various amendments, including the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. A full list of amendments can be found at <https://jncc.gov.uk/our-work/wildlife-countryside-act/>

Habitats & Species	Legislation	Guidance
Species and Habitats of Principal Importance for the Conservation of Biodiversity	Natural Environment & Rural Communities Act 2006 S.40 (which superseded S.74 of the Countryside & Rights of Way Act 2000).	S.40 of the NERC Act 2006 sets out the duty for public authorities to conserve biodiversity in England. Habitats and species of principal importance for the conservation of biodiversity in England (identified by the Secretary of State in consultation with NE) are referred to in S.41 of the NERC Act: http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx The list of habitats and species was updated in 2007 to ensure that it remained focussed on the correct priorities: https://jncc.gov.uk/our-work/uk-bap/ The criteria for selection included international threat, responsibility and importance, rate of decline/risk, importance of habitats for key species, and other important factors. Ecological impact assessments should include an assessment of the likely impacts to these habitats and species.
Hedgerows	The Hedgerow Regulations 1997	Under the regulations, it is against the law to remove or destroy hedgerows that are classified as “important” under the regulations without permission from the local planning authority. The regulations apply if a hedgerow is in or runs alongside agricultural land, common land including town or village greens, land used for forestry or for the breeding or keeping of horses etc, a local nature reserve or Site of Special Scientific Interest. A hedgerow can be classified as ‘Important’ due to its wildlife and landscape value or due to its heritage value. In general, permission will be required before removing hedges that are at least 20 metres in length, over 30 years old and contain certain species/diversity of plant. The local planning authority will assess the importance of the hedgerow using criteria set out in the regulations. See https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management for further guidance and information.
Japanese knotweed, Himalayan balsam	Wildlife and Countryside Act 1981 (as amended) S.14	It is illegal to plant these species or otherwise cause them to grow or spread in the wild. Any contaminated soil or plant material containing Japanese knotweed or giant hogweed is classified as controlled waste and should be disposed of in a suitably licensed landfill site, accompanied by appropriate Waste Transfer documentation, and must comply with section 34 of the Environmental Protection Act 1990. <i>The Knotweed Code of Practice</i> (Environment Agency, 2013) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/536762/LIT_2695.pdf https://www.gov.uk/guidance/prevent-the-spread-of-harmful-invasive-and-non-native-plants https://www.gov.uk/guidance/prevent-japanese-knotweed-from-spreading