Calder Works, Simonstone

Extended Phase 1 Habitat Survey and BNG Assessment

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Executive Summary

This report presents the findings of an updated Preliminary Ecological Appraisal and a Biodiversity Net Gain Assessment of an area of land off Burnley Road, Simonstone (central National Grid Reference: SD 77429 33303) which was commissioned by Sirius Planning to inform proposals for the development of a 70 MW battery storage project.

It is based on information collected from a desk study, an Extended Phase 1 Habitat Survey carried out in January 2024, which updates a previous survey carried out in April 2021. It also includes analysis of Biodiversity Net Gain. Relevant legislation and planning guidance are also taken into account.

Key ecological features, potential impacts, further survey requirements and outline mitigation measures are summarised for species in Table 1 below.

Table 1: Key findings and recommendations

Key findings and recommendations
Habitats/BNG The site is dominated by woodland with variable scrub cover and open areas. Areas of open mosaic habitat are associated with the former infrastructure. The site is estimated to have a baseline total of **8.22 habitat biodiversity units**. Limited woodland habitat enhancements were inputted into the Biodiversity Metric calculator to give an indication of the potential increase in biodiversity units which could be achieved. Measures to improve the condition of a proportion of woodland habitat still sits at a net loss of **– 53.47% (-4.39 habitat biodiversity units**) This can either be compensated for through an agreement to pay for this unit loss or off-site habitat creation/enhancement.
Bats Retain/mitigate for the lost habitat. Sensitive lighting scheme within new development.
Badger, Small Mammals and Amphibians Pre-commencement checks for badger required prior to commencement of works. Site clearance will adopt precautionary measures to avoid harm and disturbance to these species.
Birds Any vegetation removal works should take place outside the breeding bird season which runs from March until August inclusive. Necessary clearance within the breeding bird season will be subject to a pre-clearance bird survey carried out by a suitably experienced ecologist. Installation of bird boxes in retained areas of woodland.
Invertebrates Retain/mitigate for lost habitat.

1. Introduction

1.1 Bowland Ecology Ltd. was commissioned by Sirius Planning to undertake an updated Ecological Appraisal and Biodiversity Net Gain (BNG) assessment of an area of land off Burnley Road, Simonstone (central National Grid Reference: SD774333). This is in relation to an application seeking full planning permission for the development of a 70 MW battery storage project.

1.2 The site is an irregular shaped parcel of land, approximately 1.37 ha in size, located towards the north of Altham, a small village within the Borough of Hyndburn, Lancashire. To the north-west, north and north-east of the site sits a technology park and neighbouring industrial units, beyond which sit agricultural fields interspersed with ribbons of woodland, hedgerows and running water. The River Calder and associated riparian woodland sit to the south-east of the site, whereas agricultural fields sit to the south-west, beyond which runs the River Calder.

1.3 An Ecological Appraisal of Calder Works, which included a Phase 1 habitat survey and ground level tree assessment, was undertaken in August 2021. The results of these surveys are included in an Ecological Appraisal Report (Bowland Ecology, 2021). A previous BNG calculation and habitat assessment were conducted in June 2022 (Bowland Ecology, 2022).

1.4 The assessment follows the Guidelines for Preliminary Ecological Appraisal and the Guidelines for Ecological Report Writing (CIEEM 2017a; 2017b) and is in line with the British Standard BS42020:2013 'Biodiversity – Code of practice for planning and development'. It is based on information from a desk study, an Extended UK Habitat Survey and a provisional analysis of Biodiversity Net Gain.

1.5 The BNG assessment follows the UK's Good Practice Principles for Biodiversity Net Gain (CIEEM, CIRIA & IEMA, 2016) and CIEEM's Biodiversity Net Gain and Audit Templates (CIEEM, 2021), and follows British Standard BS 8683:2021: *Process for designing and implementing Biodiversity Net Gain. Specification*.

1.6 The aims of the assessment are to:

1) identify designated sites and important habitats occurring within the area;

2) identify the presence of or potential for important species, including legally protected species; and

3) assess likely impacts and recommend suitable mitigation measures and opportunities for Biodiversity Net Gain.

2. Methodology

Biodiversity Net Gain

2.1 The Metric uses information about on-site and off-site baseline (pre-intervention) habitats and proposed (post-intervention) habitats to calculate the overall change in biodiversity units (DEFRA, 2023). Individual habitat areas are assigned a score, generated in accordance with the Technical Supplement (DEFRA, 2023). In-built criteria for baseline habitats comprise habitat area, distinctiveness, condition and strategic significance. Post-intervention habitats are also scored based on the above criteria, in addition to the difficultly of creating or restoring habitat and the time taken to reach target condition. Habitat areas are calculated using GIS and post-intervention plans display the areas of retained, enhanced and created habitats. Methodology for assigning condition scores and for the calculation followed the standard methodology as identified in the most up-to-date guidelines (DEFRA, 2023 & Gov UK, 2023). Published supporting documents were used in conjunction with the Statutory Metric Calculation Tool, such as GIS Templates and Excel conversion/import tools (Natural England, 2023).

2.2 Baseline calculations within the Metric, including condition scores, have been informed by previous site surveys and the assessment undertaken in January 2024.The post intervention calculations are based on the Development Proposals plan (Appendix B).

2.3 The southeastern corner of the site lies within the Lancashire Ecological Network for Grassland as cited within the 'Lancashire Ecological Network Approach and Analysis (v1a) June 2015'. As such, strategic significance has been classified as 'formally identified in a local strategy' for habitats occurring within the network corridor.

2.4 The baseline BNG assessment has been undertaken in line with British Standard BS 8683:2021: Process for designing and implementing Biodiversity Net Gain. Specification. The assessment has been undertaken by a suitable qualified person as defined in BS 8683:2021. Relevant CIEEM good practice guidance and standards have also been followed (CIEEM 2016 & CIEEM 2019).

Desk Study

2.5 The aim of the desk study was to identify the presence of statutory and non-statutory designated wildlife sites, legally protected species, and Habitats and Species of Principal Importance (HPI & SPI) for the conservation of biodiversity (Section 41 NERC Act 2006) within the search area.

2.6 The Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) was reviewed for information on locally, nationally and internationally designated sites of nature conservation importance (statutory sites only) and areas identified as HPI within 1 km of the site boundary.

2.7 Local species records on and within 1 km of the site were obtained in 2021 from Lancashire Environment Record Network (LERN). Species records dated within the last 10 years have been used within this report.

2.8 Ordnance Survey (OS) maps and aerial photographs were reviewed to help identify the presence of notable habitats, such as hedgerows, ponds, and woodland connected to the site. It is recommended that, for developments resulting in permanent or temporary habitat loss at distances over 0.25 km from the nearest pond, careful consideration should be given as to whether a great crested newt (*Triturus cristatus*) survey is appropriate. Although this species may use suitable terrestrial habitat up to 0.5 km from a breeding pond, in this instance a 0.25 km

search radius was considered appropriate due to the small footprint and temporary nature of the proposed works.

Extended Phase 1 Habitat Survey

2.9 An assessment was made of all areas of vegetation within the site boundaries, based on the standardised UKHab survey methodology (Butcher *et al*. 2020). This involved a walkover survey to identify vegetation types, which were then classified against those the types set out in UKHab classification system V2.0 (UKHab Ltd, 2023). All habitats within the site boundary were mapped and described.

2.10 In addition, evidence of and potential for legally protected and notable species was noted, in particular:

- Potential roosting sites for bats within trees and built structures (bridges and buildings) (survey undertaken externally and from ground level only); an assessment of the suitability of bat roosting, foraging and commuting habitat was also undertaken based on Collins (2023);

- Habitats utilised by other notable and protected species, including amphibians (particularly GCN), water vole (*Arvicola amphibius*), otter (*Lutra lutra*), badger (*Meles meles*), hedgehog (*Erinaceus europaeus*), hazel dormouse (*Muscardinus avellanarius*), invertebrates, nesting birds (including any active or disused bird nests) and reptiles; and

- The presence of the most common invasive plant species subject to strict legal control including: Japanese knotweed (*Fallopia japonica*), giant knotweed (*F. sachalinensis*), hybrid knotweed (*F. x bohemica*), giant hogweed (*Heracleum mantegazzianum*), rhododendron (*Rhododendron ponticum, R. ponticum x R. maximum* and *R. luteum*), and Himalayan balsam (*Impatiens glandulifera*).

2.11 Surveys were undertaken by [redacted] MSc, BSc (Hons) ACIEEM on the 15th January 2024. The weather was dry, with 0/8 cloud cover, still (Beaufort Scale 0) and a temperature of approximately 2°C.

Limitations

2.12 The timing of the survey was outside the optimum period for completing a UK Habitat Survey (April to September inclusive). However, there was sufficient information from current and previous site surveys to confidently recognise the type of habitats present and undertake a condition assessment to fully assess the sites value.

2.13 The habitat survey focused on the most prominent and important species within the time available, rather than aiming to identify all species that might present within site. Ecological surveys are also limited by factors that affect the presence of plants and animals, such as the time of year, migration patterns and behaviour. Therefore, the survey of the study area has not produced a complete list of plants and animals.

2.14 Desk study data should not be treated as a comprehensive list of species present within a search area. Habitat inventories shown on MAGIC vary in terms of their completeness, precision, and reliability. Many species are under-recorded and low numbers of records can indicate a lack of survey effort in some areas, rather than confirm the absence of a species.

2.15 The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The extended UK Habitat Survey checked for the presence of Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, rhododendron and Himalayan balsam. There may be other invasive plant species present on the site which were not recorded, but it is considered that the survey was sufficient to identify any significant constraints posed by invasive plants.

2.16 The information used to populate the Biodiversity Metric calculation spreadsheet was provisional and based on certain assumptions (see above); the outcome should therefore be treated as approximate and provisional.

3. Results

Desk study (2021)

3.1 The desk study revealed no statutory designated sites within 1 km of the site. However, revealed the following non-statutory designated Biological Heritage Sites (BHS) within 1 km:

Site Name	Distance from site boundary	Key features
Lower Dean Wood	0.5 km north-east	Plantation woodland on an ancient woodland site, occupying a steeply sloping clough above Dean Brook, designated for the presence of woodland and scrub.
Lower Dean Pasture	0.75 km north-east	Semi-improved neutral and acidic pasture adjoining the west bank of Dean Brook, designated for the presence of notable grassland.

3.2 MAGIC identified the following areas of habitat within 1 km of the site which potentially qualify as Habitats of Principal Importance (HPI):

Description
• Deciduous woodland, the closest of which is located within the site boundary and extends east, south and west beyond the site. However, recent site surveys have concluded that the woodland on site is not a representation of deciduous woodland HPI and has been re-classified as 'Other Broadleaved Woodland' for BNG purposes.
• Open mosaic habitats on previously developed land, the closest of which is located within the site boundary (from site survey) with another area approximately 180 m south-east of the site.
• Lowland dry acid grassland, the closest of which is located approximately 800 m north-east of the site.

3.3 The data search also identified a single area of ancient woodland within 1 km of the site, which is located approximately 650 m south-east of the site.

3.4 None of the other aforementioned designated sites are within the site boundary and are therefore unlikely to be directly impacted by the development. As such, no impacts to the BNG calculation are expected.

Habitats

3.5 The location of habitats recorded during the Extended UK Habitat Survey is mapped in Appendix C. The Target Notes (TNs) describing each habitat and key interest features for wildlife are set out in Appendix C. Each habitat type is described below. Plant species nomenclature follows Stace (2010).

<u>Other Broadleaved Woodland (w1g)</u>

3.6 This secondary woodland is young and unmanaged with semi-mature trees to the site boundaries. The canopy layer is dominated by birch (*Betula pendula*), alder (*Alnus glutinosa*) and goat willow (*Salix caprea*), with other species towards habitat edges including sycamore (*Acer pseudoplatanus*), crab apple (*Malus sylvestris*), oak (*Quercus robur*) and ash (*Fraxinus excelsior).*

The understorey layer comprises hawthorn (*Crataegus monogyna*) and dog rose (*Rosa canina*), which is near constant and locally impenetrable. The ground is compacted and uneven from past disturbance and appears to have been historically bunded to the site boundaries containing rubble, bricks and concrete slabs with embedded urban debris.

3.7 The field layer is sparse and covered by a constant layer of leaf litter. Towards the woodland edges bordering central open habitat, the woodland floor is dominated by pleurocarpus mosses including springy turf moss (*Rhytidiadelphus squarrosus*) and common feather moss (*Kindbergia praelonga*) with frequent wild strawberry (*Fragaria vesca*). Other common bryophytes throughout the woodland include Catherine's moss (*Atrichum undulatum*), neat feather moss (*Pseudoscleropodium purum*), tamarisk moss (*Thuidium tamariscinum*) and tree-moss (*Climacium dendroides*). Mosses such as silky wall feather moss (*Homalothecium sericeum*) and mouse-tail moss (*Isothecium* sp.) grow as epiphytes at tree bases. Wood avens (*Geum urbanum*) is rarely occurring and ferns occur across rubble, including broad-buckler fern (*Dryopteris dilatata*) and scaley male fern (*Dryopteris affinis*). A small patch of bracken (*Pteridium aquilinum)* is also present, indicative of locally acidic soils. The woodland is not considered to be HPI due to the age of the trees, compacted ground and lack of indicator communities from the survey in 2021 (the site remains similar to previous survey).

3.8 The woodland was assessed as being in **poor** condition following the condition assessment, achieving a score of 25/39, one point below the threshold for moderate condition (see separate condition assessment document). Whilst the woodland parcel scored highly regarding limited herbivore damage (B), number of native trees (D) cover of native trees and shrubs (E) and open space within the woodland (F); poorly scoring criteria were related to tree mortality (H), a lack of a recognisable ground flora community (I), absence of veteran trees (K), lack of deadwood (L) and high amount of woodland disturbance (M). Approximately **0.205 ha** of woodland is within the Lancashire Grassland Network so strategic significance has been set to 'high' for this section. **1.017 ha** of **other broadleaved woodland** is present on site, representing a value of **4.19 units**.

Open Mosaic Habitats on Previously Developed Land (HPI) (u1a)

3.9 The centre of the site is occupied by mosses and forbs associated with nutrient poor, moist soils, which have established across very thin soils atop areas of former hardstanding. Most of the habitat is dominated by areas of continuous springy turf moss and neat feather moss. Other species present include frequent wild strawberry, common sedge (*Carex nigra*) and creeping cinquefoil (*Potentilla reptans*), and occasional haircap moss (*Polytrichum* sp.), annual meadow grass (*Poa annua*), sow thistle (*Sonchus oleraceus*), ribwort plantain (*Plantago lanceolata*), ground ivy (*Glechoma hederacea*), willowherb (*Epilobium* sp.), selfheal (*Prunella vulgaris*), mouse ear hawkweed (*Pilosella officinarum*), dandelion *(Taraxacum* sp.), hard rush (*Juncus inflexus*) and pointed spear moss (*Calliergonella cuspidata*). Scattered willow, alder and hawthorn scrub is encroaching into this habitat from the woodland; however, the habitat remains largely open, likely owing to a combination of shallow soils, rabbit grazing and occasional disturbance to access the electricity pylon.

3.10 The area of **open mosaic habitats on previously developed land** achieved **moderate** habitat condition, passing criteria for varied sward height (A) different plant species (B) and special variation & early successional communities (D). The habitat only failed on invasive species (C) due to the presence of *Cotoneaster* (TN 6). Approximately **0.064 ha** of **OMHPDL** is within the Lancashire Grassland Network so strategic significance has been set to 'high' for this section. **0.285 ha** of **OMHPDL** is present on site representing a value of **3.53 units**.

Willow Scrub (h3j)

3.11 A linear strip of recently cut **willow scrub** is present at the western boundary. Fresh growth of willow shoots from cut bases results in a coppice-like structure. Other woody species include dog rose and blackthorn (*Prunus spinosa*). Ground flora is similar to that of OMHPDL with abundant creeping buttercup (*Ranunculus repens*).

3.12 The **willow scrub** achieved **moderate** habitat condition, passing criteria absence of non-native species (C) well developed edge (D) and clearings (E) and failing criteria for habitat type (A), and lack of variable shrub ages (B). **0.059 ha** of **willow scrub** is present on site representing a value of **0.47 units.**

Sparsely Vegetated Urban Land (u1f)

3.13 Open areas of bare ground, rubble and cleared vegetation surround the electricity pylon at the western boundary of the site. Bramble (*Rubus fruticosus*) is slowly recolonising along with willowherbs and creeping buttercup.

3.14 The area of **sparsely vegetated urban land** achieved **poor** habitat condition, failing criteria for varied sward height (A) and different plant species (B). The habitat only passed the invasive species criterion (C). **0.009 ha** of **sparsely vegetated urban land** is present on site representing a value of **0.02 units**.

Species

Bats

3.15 The data search returned records for three species of bat within 1 km of the site, comprising common pipistrelle (*Pipistrellus pipistrellus*), Noctule (*Nyctalus noctule*) and myotis (*Myotis* sp.). The closest bat activity records were for common pipistrelle and myotis located approximately 250 m, south-west of the site boundary in 2019. A single bat roosting record for common pipistrelle was returned, located approximately 675 m south-west and dated from 2020. The MAGIC website returned no granted European Protected Species Licences for bats within 1 km of the site.

3.16 Following a ground-based roost assessment of trees, a single tree was assessed as providing **low** suitability to support individual roosting bats (Tr1). Table 3 (below) provides a description of Potential Roosting Features (PRF), photograph and the assigned bat roosting potential. The location of the tree is highlighted on the plan in Appendix C.

Table 3: *Bat tree description, photograph and bat roosting potential.*

Ref	Description	Photograph
Tr1	Alder tree located along the southern boundary of the site. The tree is in poor health, with multiple dead limbs and the initial development of several knot holes which are mostly upwards facing. Heartwood is present in those visible from the ground, suggesting they do not constitute a PRF. No significant features considered suitable for roosting bats were recorded. However, due to their height, knot holes suitable for roosting bats may be present but not visible from the ground.	

3.17 Habitats within the site provide suitable foraging and commuting opportunities for a range of bat species; these include areas of woodland, scrub and open mosaic habitat. The woodland areas provide foraging habitat for species showing preference for more 'closed' habitats, including

brown long-eared (*Plecotus auritus*) and Natterer's bats (*Myotis nattereri*). The edges of the woodland and areas of scattered scrub have potential to be used by bat species known to favour 'edge' habitats, such as common pipistrelle and whiskered bats (*Myotis mystacinus*), which are flexible in their foraging habitat. Grassland areas may be used by foraging noctule, which favour more open habitats. In addition to the suitable commuting and foraging habitats present on site, the site sits adjacent to derelict buildings which may offer suitable roosting opportunities, as well as the river Calder and its associated riparian habitat, including broadleaved woodland. In line with Collins (2016), the site is considered to provide high suitability for foraging and commuting bats.

Birds

3.18 15 notable bird species were returned from the data search within 1km of the site (no species were recorded within the site boundary), including species listed under Birds of Conservation Concern 5 (BoCC 5), NERC Act Section 41, The Wildlife and Countryside Act, 1981 (as amended) and Lancashire BAP Species. Species returned include; greenfinch (*Chloris chloris*), redstart (*Phoenicurus phoenicurus*), spotted flycatcher (*Muscicapa striata*), starling (*Sturnus vulgaris*), tree sparrow (*Passer montanus*) and wren (*Troglodytes troglodytes*).

3.19 The woodland and scrub present on site provide nesting opportunities for a range of tree and scrub nesting bird species. The open mosaic habitat is considered to provide low potential for ground nesting birds due its small size and enclosed nature. However, the edges of the open glades may be used by ground nesting warblers. Furthermore, the grassland is also considered to provide low potential foraging habitat for raptors and owls due to its small size.

Badger and Other Mammals

3.20 Three records of European otter (*Lutra lutra*) were returned, the closest of which is located along the river Calder, approximately 40 m south of the site boundary, dated 2021. The site is considered unsuitable for otter due to the absence of running water and lay-up sites. Furthermore, the River Calder is separated from the site by a steep embankment and two walls either side of Burnley Road, which are considered to act as dispersal barriers for otters. As such, this species is not considered further within this report.

3.21 The data search returned no records for badger within 1 km of the site. No evidence of badger in the form of setts, latrines, footprints or hairs was recorded on site during the survey. The areas of woodland and dense scrub are considered suitable for use by badger for both sett excavating and foraging.

3.22 The areas of woodland, scrub, open mosaic, brick walls, rubble and spoil heaps provide foraging, sheltering and hibernation habitat for a variety of small mammals, specifically European hedgehog (*Erinaceus europaeus*), an SPI.

3.23 Numerous rabbit (*Oryctolagus cuniculus*) burrows were recorded within the woodland and extensive grazing by rabbits of the open mosaic habitat is evident.

Amphibians and Reptiles

3.24 The data search returned a single record of common toad (*Bufo bufo*), located approximately 850 m north-east (dated 2016). The MAGIC website returned no granted European Protected Species Licence for GCN within 1 km of the site.

3.25 Due to the absence of aquatic habitat on or within 0.25 km of the site it is considered highly unlikely that GCN is present within the site. Furthermore, there are no records of the species within 1 km of the site. As such GCN is not considered further within this report.

3.26 Common amphibians, including common frog (*Rana temporaria*) and common toad (an SPI), are less restricted in their habitat requirements, therefore their presence within the site cannot be ruled out. The broadleaved woodland, scrub, open mosaic habitat, brick wall, rubble and spoil heap are considered to provide suitable terrestrial habitats for common amphibians, and may be used for foraging, sheltering and hibernation.

3.27 The data search returned no records for reptiles within 1 km of the site. Open glades within the centre of the site may be used by basking common reptiles, however considered sub-optimal due to its small size. The woodland, scrub, brick wall, spoil and rubble heaps are considered to provide potentially suitable refuge and hibernation features for common reptile species, however, the site is small and spatially isolated from other semi-natural habitats. Therefore, reptiles are not considered further within this report.

Invertebrates

3.28 The data search returned records of four invertebrate species, including species listed under Lancashire BAP Species, BHS species, NERC Act Section 41 and The Wildlife and Countryside Act, 1981 (as amended). Species returned comprise comma (*Polygonia c-album*), ringlet (*Aphantopus hyperantus*), speckled wood (*Pararge aegeria*) and white-letter hairstreak (*Satyrium w-album*). The site is considered likely to support a range of common invertebrate species, associated with habitats on site or nearby, including woodland, scrub and open mosaic.

Biodiversity Net Gain

3.29 The provisional Biodiversity Net Gain analysis revealed that the number of habitat units provided by the site is currently 8.21 units. This could fall to 2.99 units as a result of the proposed development (see table below) unless appropriate compensation is provided.

Habitat type	Existing value (habitat units)	Value after development (habitat units)
Other broadleaved woodland	4.19	1.9
Open mosaic habitats on previously developed land	3.53	0.99
Willow scrub	0.47	0.08
Sparsely vegetated urban land	0.02	0.02
All habitats	**8.21**	**2.99**

4. Evaluation and Assessment of Constraints

4.1 This section is based on the information available on the proposed development (see below) and the professional judgement of the ecologists that prepared this report. It considers legal requirements (see Appendix F) and relevant national and local planning policies. If the proposals are changed significantly, the assessment will need to be reviewed.

Development Proposals

4.2 The site is subject to a planning application which includes the construction of a 70 MW battery storage project; the proposed site layout is included in Appendix B. The proposed development will involve the removal of broadleaved woodland, together with the loss of scattered and dense scrub and open mosaic habitat. The site location for the battery energy storage system is based upon the proximity to Padiham Electricity substation (1km away) to enable connection to the electricity grid, planning permission has been previously granted for a battery facility at this location.

Habitats of Principal Importance

Open Mosaic Habitats on Previously Developed Land (HPI)

4.3 0.2 ha of OMHPDL will be removed to facilitate the development and access track. Site clearance and construction works also have the potential to indirectly impact retained areas of OMHPDL within and in close proximity to the site through pollution (fuel spillages incidents, runoff and dust) and vibration disturbance during site clearance and construction. Dust pollution can have a variety of negative impacts, including reducing the availability of light for photosynthesis and altering the pH of soils which can affect the long-term success of plants.

Other Habitats

Broadleaved Woodland and Scrub

4.4 0.57 ha of broadleaved woodland and 0.05 ha of willow scrub will require removal in order to facilitate the development and access track. Any retained woodland may also be subject to indirect impacts in the absence of mitigation, including measures described above (paragraph 4.3) and the compaction of root systems.

Species

Bats

4.5 A single tree is considered to be of **low** suitability for roosting bats (Tr1). This tree is outside of the developmental footprint and will be retained as part of the proposed works (see Appendix C). No other trees within the developmental footprint were considered to provide suitable features for roosting bats, mainly due to their immaturity and thus lack of PRF's.

4.6 The removal of woodland, scrub and open mosaic habitat will result in a reduction in foraging opportunities at the site. In addition, disturbance during works caused by increased noise, lighting, and human presence may deter foraging and commuting bats.

4.7 Any new lighting associated with the development (including clearance, construction and completed development) has the potential to impact foraging, commuting and potentially roosting bats utilising the site. An increase in artificial illumination poses a barrier to bat movement and reduces foraging opportunities by depleting invertebrates from unlit areas,

thereby reducing food abundance. Unmitigated, potential disturbance to bats could occur through increased lighting of the site at night, particularly if light spillage occurs onto any adjacent roosting features or features which could be used for commuting and foraging.

Badgers and Small Mammals

4.8 Although no evidence of badger was recorded, badgers are a highly mobile species and habitats on site (broadleaved woodland and dense scrub) are considered suitable for badger foraging and sett establishment. New setts may potentially be excavated within or close to working areas at any time. As such, if badgers excavate new setts within or adjacent to the site, in the absence of mitigation proposals may impact badgers through disturbance, accidental entrapment of individuals within excavations or the destruction of sett(s).

4.9 Accidental disturbance and/or harm could occur to small mammals, including European hedgehog and rabbits if site clearance and construction works are undertaken without due care and attention. Works may also result in the accidental entrapment of individuals within excavations if works are completed in the absence of suitable mitigation.

4.10 The loss of woodland, scrub, open mosaic habitat, spoil piles and the brick wall may also result in the loss of suitable commuting, foraging, refuge and hibernation habitats.

4.11 Light pollution associated with site clearance, construction and the completed development may also negatively affect foraging and commuting mammals.

Birds

4.12 The removal or disturbance of suitable nesting habitats (woodland, scrub and mosaic habitat) undertaken during the nesting season (March – August inclusive) has the potential to disturb and/or harm breeding birds and nestlings. The loss of any of the aforementioned habitats will also result in the reduction of available foraging and nesting habitat for a variety of birds.

4.13 The loss of the open mosaic habitat is considered unlikely to significantly impact foraging owls, raptors and ground nesting birds due to the presence of better-quality foraging habitat within the surrounding area.

Amphibians

4.14 There is potential for common amphibians to be present in suitable terrestrial habitats. As such, site clearance and construction works may result in the accidental disturbance and/or harm of amphibians if undertaken without due care and attention. Works may also result in the accidental entrapment of individuals within excavations if works are completed in the absence of suitable mitigation.

4.15 The loss of woodland, scrub, open mosaic, spoil piles and the brick wall may also result in the loss of suitable commuting, foraging, refuge and hibernation habitats.

Invertebrates

4.16 The loss of woodland, scrub and open mosaic may also result in the loss of suitable commuting, foraging and refuge habitats for invertebrates, including SPI species.

Invasive Non-Native Species (INNS)

4.17 Certain species of *Cotoneaster* are listed on Schedule 9 of the Wildlife and Countryside Act (1981, as amended); identifying cotoneaster to species level is difficult, therefore as a precaution, it is advised that individuals recorded on site are treated as being listed on Schedule 9. This makes it

illegal to plant or otherwise cause the species to grow in the wild. Works undertaken without due care and attention in respect of the aforementioned species could cause the spread of non-native species in the wild.

Biodiversity Net Gain

4.18 With respect to the 'mitigation hierarchy' and good principles for BNG the following have been taken into account:

- As much of the woodland as feasible possible (the majority of the site is woodland, so the habitat could not be avoided) will be retained.
- Where works must be carried out close to retained habitats including; woodland and open mosaic habitat on previously developed land, mitigation will be provided in the form of root protection zones and pollution prevention measures.
- Woodland loss will be avoided as far as possible and compensatory enhancement of retained woodland will be implemented and can be managed and monitored following the CEMP and OLEMP.
- No irreplaceable habitats are present on site and broadleaved woodland is not considered to be HPI, however it is still of ecological value. Open mosaic habitat on previously developed land is HPI and 0.2 ha will be lost to the development and cannot be compensated for onsite – appropriate compensation/off-setting will be required for the loss of this habitat.
- On site habitat enhancement will provide potential for contributions to conservation goals in the form of more sustainable management of existing woodland. However, off-setting will be required to fully contribute to regional and national conservation goals.
- Enhancements within Lancashire's Grassland networks help to maintain the corridor value of the site.

4.19 The provisional Biodiversity Net Gain analysis showed that the number of habitat units provided by the site could fall by -59.74%. Most of this is due to the anticipated loss of broadleaved woodland and smaller areas of willow scrub and open mosaic habitat. Unavoidable losses can be partly compensated for by enhancing retained areas of habitat however, it is likely that there is insufficient space on-site, therefore off-site compensation will need to be provided. Compensation for certain habitats is constrained under the Biodiversity Metric trading rules:

Habitat Type	Compensation Constraints
Open Mosaic Habitats on Previously Developed Land	Same habitat required (high distinctiveness)
Broadleaved woodland	Same broad habitat or a higher distinctiveness habitat required (medium distinctiveness)
Willow scrub	Same broad habitat or a higher distinctiveness habitat required (medium distinctiveness)

5. Mitigation and Opportunities

5.1 The recommendations set out below aim to ensure that the proposed development takes account of important ecological features, legal requirements (see Appendix F), and relevant national and local planning policies. The National Planning Policy Framework (2023) specifically states that development should seek to minimise impacts, incorporate improvements, and provide net gains for biodiversity. If the proposals are changed significantly, the recommendations will need to be reviewed.

Habitats (Including Habitats of Principal Importance)

5.2 The loss of broadleaved woodland, scrub and open mosaic habitats on previously developed land (HPI) will require adequate compensation; in the form of habitat enhancement of retained areas. Adequate habitat enhancement will not be possible within the developmental footprint or within the area of retained habitats surrounding; as such, off-site compensation will be required (see paragraph 5.20 onwards for further information).

5.3 In line with BS 5837:2012, Root Protection Areas (RPA) of trees at risk from indirect impacts will be safeguarded, using vertical barriers or appropriate ground protection to create exclusion zones prior to commencement of the development.

5.4 Appropriate pollution prevention and control measures will be applied throughout the construction period to ensure retained areas of habitat are not adversely impacted during the works through run-off and dust created during site clearance and construction. The Scottish Environmental Protection A gency (SEPA) and Northern Ireland Environment Agency (NIEA) have published guidance on the NetRegs website (NetRegs, 2018). In line with NetRegs[1] guidance. Examples of suitable measures that can be adopted during works include (but not are necessarily limited to):

- Vehicle refuelling in designated compounds/areas and fuel stored in double bunded containers;
- Drip trays or plant nappies to be used when refuelling and left under stationary machinery;
- Oil spill kits to be kept on site and within all vehicles;
- Maintaining high standards of housekeeping;
- Enforcing speed limits on site and dampening down working areas and haul roads in dry periods to prevent dust;
- Using covered wagons and skips; and
- Any materials such as excavated topsoil must be stored in a bunded area, and protected from potential rainfall and runoff, and replaced upon completion of works.

[1] Guidance for Pollution Prevention (GPP) documents | NetRegs | Environmental guidance for your business in Northern Ireland & Scotland

5.5 Compensation for the loss of open mosaic habitats on previously developed land may comprise the planting of native wildflowers. Native wildflower seeding should also be considered within any proposed landscaping area within the developmental footprint. A less intensive management/mowing regime of grassland areas within the completed development will also be implemented to allow grassland species to flower and seed, which will further increase the biodiversity value of the site. Wildflower planting areas will require an annual cut; this will be in late summer (August to September) after plants have set seed. Arisings will be left to drop seed for a few days, and then disposed of responsibly.

Species

Bats

5.6 The retention of areas of woodland, scrub and open mosaic habitat where possible, together with compensatory habitat enhancement described for these habitats (see below) will minimise ecological impacts to bats currently foraging and commuting on site.

5.7 A sensitive lighting scheme will be incorporated into the proposals, in accordance with the appropriate guidance (IPL 2023). The lighting scheme will be adopted during site clearance and construction and will also cover the completed development. Examples of low impact lighting schemes include, but are not limited to:

- Use of sodium lighting or LED lights with a warm colour temperature (<2700 Kelvin) instead of mercury or metal halide lamps;
- Careful direction/positioning of lighting to where it is needed and to avoid light spillage onto site perimeters (i.e. away from woodland and scrub);
- Only working during daylight hours; and
- Turning off any additional site lighting at night or using motion sensors within the active bat season (May to September).

Badgers, Other Small Mammals and Amphibians

5.8 It is advised that a pre-construction walkover for badgers is undertaken prior to starting works. Checks are recommended a maximum of two months in advance of works.

5.9 Additional mitigation with respect to commuting/foraging badger will comprise no night work or floodlighting (working window: an hour after sunrise until an hour before sunset); all excavations to be covered at night or a means of escape (e.g. earth ramp) provided; and capping of all exposed pipes at the end of each working day.

5.10 In order to mitigate for potential direct impacts to small mammals and common amphibians during the works, the following Reasonable Avoidance Measures (RAMS) will be adhered to throughout the duration of the project:

- Vegetation requiring clearance will be strimmed prior to commencement of works to a height of 150 mm, to encourage displacement of common amphibians. This will be followed by strimming to ground level after 48 hours, and short vegetation cover will be retained throughout the duration of works;
- Careful hand removal of rubble piles as to not crush any animals that may be residing underneath. If an animal is located it should be carefully moved to a safe location and placed under dense vegetation;

- Working areas should be kept to a minimum and any excavations should be backfilled, covered over, or a means of escape provided (e.g., plank) at the end of each day in order to prevent individuals becoming stranded;

- During construction, open pipework capable of trapping amphibians/reptiles/mammals should be covered overnight;

- All materials will be raised off the ground and stored on pallets within sub-optimal habitat (bare ground locations if possible);

- Storage of machinery must also be contained within sub-optimal habitat (not within woodland or scrub) and any tipped materials will be compacted to prevent individuals seeking refuge and being harmed during the works; and

- Any common amphibians or small mammals found during the works will be carefully relocated to an undisturbed location under cover of dense vegetation or allowed to leave the working area of their own accord.

5.11 Creation of log/brash piles from felled trees/scrub to provide hibernaculum for mammals, including hedgehog HPI, amphibians and invertebrates.

Birds

5.12 Removal of suitable bird nesting habitat (woodland, scrub, open mosaic) will be kept to a minimum and should ideally take place outside the breeding bird season, which runs from March until August inclusive, in order to prevent any impacts upon nesting birds.

5.13 Clearance of habitats that must be carried out within the bird breeding season will be subject to a pre-clearance bird survey carried out by a suitably experienced ecologist. No works will be carried out within an appropriate radius (to be determined by the ecologist) of an identified nest until the young have fledged and are no longer returning to the nest site. Works will only be undertaken once the ecologist has declared the nest to be no longer in use.

5.14 The retention of areas of woodland, scrub and open mosaic habitat where possible, together with compensatory habitat enhancement described in paragraph XXX below, will help minimise adverse ecological impacts to nesting birds. The provision of native berry bearing tree and scrub species will be incorporated within the mitigation proposals in order to ensure the continuation of foraging habitat for birds on site.

5.15 The provision of artificial bird nest boxes is also required to compensate for the loss of nesting bird habitat within the new development. Twenty bird boxes, comprising at least four of each of the following, will be installed within the retained area of broadleaved woodland, away from any potential disturbance associated with the new development:

- 1B Schwegler Nest Box (32mm entrance hole size); suitable for great tit (*Parus major*), blue tit (*Cyanistes caeruleus*), house sparrow (*Passer domesticus*) and occasionally bats. Designed for positioning on buildings and trees;

- 1B Schwegler Nest Box (26mm entrance hole size); suitable for blue tit and wren (*Troglodytes troglodytes*). Designed for positioning on buildings and trees;

- 2M Schwegler Nest Box (32mm entrance hole size); suitability for great and blue tit, house sparrow and occasionally bats. Designed to hang on a tree; and,

- 2GR Schwegler Nest Box (single oval entrance hole); suitable for great and blue tit, house sparrow and occasionally bats. Designed to hang on a tree.

Invertebrates

5.16 The retention of areas of woodland, scrub and open mosaic habitat where possible, together with compensatory habitat creation and enhancement (described in paragraph 5.20 onwards) will minimise adverse ecological impacts with respect to invertebrates.

Invasive Non-Native Species (INNS)

5.17 The following control measures should be undertaken to prevent the spread of *Cotoneaster* during the works:

- Contractors to be made aware of the locations of cotoneaster stands;
- An exclusion zone around both stands will be demarcated by hi-visibility netlon fencing and access to exclusion zones should be avoided until cotoneaster has been successfully eradicated from the area;
- Mechanical or chemical control will be implemented. Mechanical control involves the excavation and removal of the entire plant (including root mass), if any part of the plant is left then it may produce new plants. Chemical control involves stump treating larger plants with suitable herbicide after cutting to prevent regrowth;
- Biosecurity protocols will be implemented for works taking place within close proximity to the cotoneaster, such as the cleaning of all footwear and machinery, prior to, and on completion of each working window; and
- All plant matter and soil considered likely to be contaminated by non-native invasive species will be disposed of appropriately.

5.18 In additional to strict biosecurity protocols, any new materials (e.g. topsoil) introduced to the site will be from a reputable source, where there is no risk of contamination by non-native invasive plants.

Biodiversity Net Gain

5.19 The Statutory Biodiversity Metric results reflect the loss of woodland, scrub and open mosaic habitats on previously developed land (HPI). Enhancement and creation opportunities within the survey area is limited and would require open discussions with the current landowner, however some areas of retained woodland have been considered for possible enhancement (see Appendix E).

5.20 The Metric calculator results are summarised in Table 3 below, 0.252 ha of broadleaved 'poor' condition woodland is proposed for enhancement. Enhancement of these areas to achieve 'moderate' condition would result in a gain of 1.78 biodiversity units. However, there will still be an overall loss of -53.47% (4.39 units overall). This can either be compensated for through an agreement to pay for this unit loss or off-site habitat creation/enhancement (an assessment of the off-site's baseline will be required prior to any planting) subject to agreement with the LPA.

Table 3: Headline results from the Metric calculation spreadsheet

Type	On-site baseline (units)	On-site post-intervention (units)	Total net unit change	Total net % change
Habitats	**8.22**	**3.82**	**-4.39**	**-53.47%**

5.21 Measures linked to condition criteria which will benefit all areas of woodland include:

- Controlling/removing invasive species (*Cotoneaster*);
- Coppicing of semi-mature trees around the site boundaries can help to create an uneven age structure, therefore providing a more structurally diverse habitat;
- Within younger areas of woodland (where dense shading has reduced the growth of woodland wildflowers and shrubs), thinning may also be undertaken to remove weak, diseased or overcrowded trees, particularly within single species stands;
- Management of rides (particularly the open mosaic habitat) can maintain the open space as a beneficial structural element within the woodland for a variety of plants and insects which prefer edge habitats. These should meander through the woodland and include 'scrubby edge', 'tall herb', 'short turf' habitats. A similar structure should be encouraged for woodland edges, which can be managed to create sheltered 'scallops'; and
- Supporting the natural regeneration of young trees and scrub. Where the canopy becomes partly broken or larger gaps arise, the ground flora and natural regeneration of scrub and young trees is likely to occur. Supplementing this natural regeneration, particularly to introduce additional species, such as Scots pine, rowan (*Sorbus aucuparia*), hazel (*Corylus avellana*), aspen (*Populus tremula*), holly and wild cherry (*Prunus avium*) will increase species richness and structural diversity. Ideally, these should be derived from locally collected seeds or cuttings or layered stems.

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5.22 Additional measures which will benefit areas of more mature woodland trees (predominantly at the site boundaries) include:

- Allowing mature trees and deadwood to remain in the woodland. It is preferable not to fell diseased or dying trees. It is also preferable to not fell trees that die, as standing dead trees (Tr1) provide a valuable habitat which differs from that found in fallen trees. If felling is required, trees ought to be cut high and the felled trunks and branches and cut stumps left to decay naturally.
- Brushwood and timber from clearing and coppicing can be left in piles or turned into dead hedges (piles of branches and twigs arranged to form a barrier), which can provide habitat.

5.23 A Construction Environment Management Plan (CEMP) and Landscape and Ecology Management Plan (LEMP) will likely be required. The results of the BNG calculation will be used to inform sensitive planning of construction activities which will be implemented through the CEMP. Created and enhanced habitats and additional species measures would be managed in line with the LEMP.

Enhancement measures

5.24 Additional planting of scrub, hedgerows and trees in and around the margins of the site. New planting should comprise native species of local provenance, to include berry bearing shrubs. Planting of such additional native species will enhance ecological connectivity within the wider landscape and benefit many species of wildlife including bats, birds and amphibians.

5.25 The creation of habitat for invertebrates by excavating small trenches, filling with suitable materials (e.g. rubble and woody debris) and covering with freely draining soils to form a low mound and sown/planted with nectar rich wildflowers/shrubs.

5.26 Creation of further log/brash piles from felled trees/scrub to attract invertebrates and fungi, which will also provide short and long-term refugia for mammals, amphibians and invertebrates.

5.27 The installation of additional bird and bat boxes

Re-survey of the Site

5.28 If no works are undertaken on site within 18 months of this survey or if any changes to the proposals are made, a further ecological survey may be necessary (because of the mobility of animals and the potential for colonisation of the site

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Appendix A – Bat Roost Potential and Habitat Suitability Categories

Table 1 - Guidelines for assessing the potential suitability (structures and foraging habitats) of proposed development sites for bats, based on the presence of habitat features within the landscape (Collins, 2023).

Suitability	Description of Roosting Habitat	Commuting & Foraging Habitats
None	No obvious features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels)	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight lines, or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats, however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats, however, a small element of uncertainty remains in order to account for non-standard behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitats to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths, such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging, such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis, and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous high quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close and connected to known roosts.

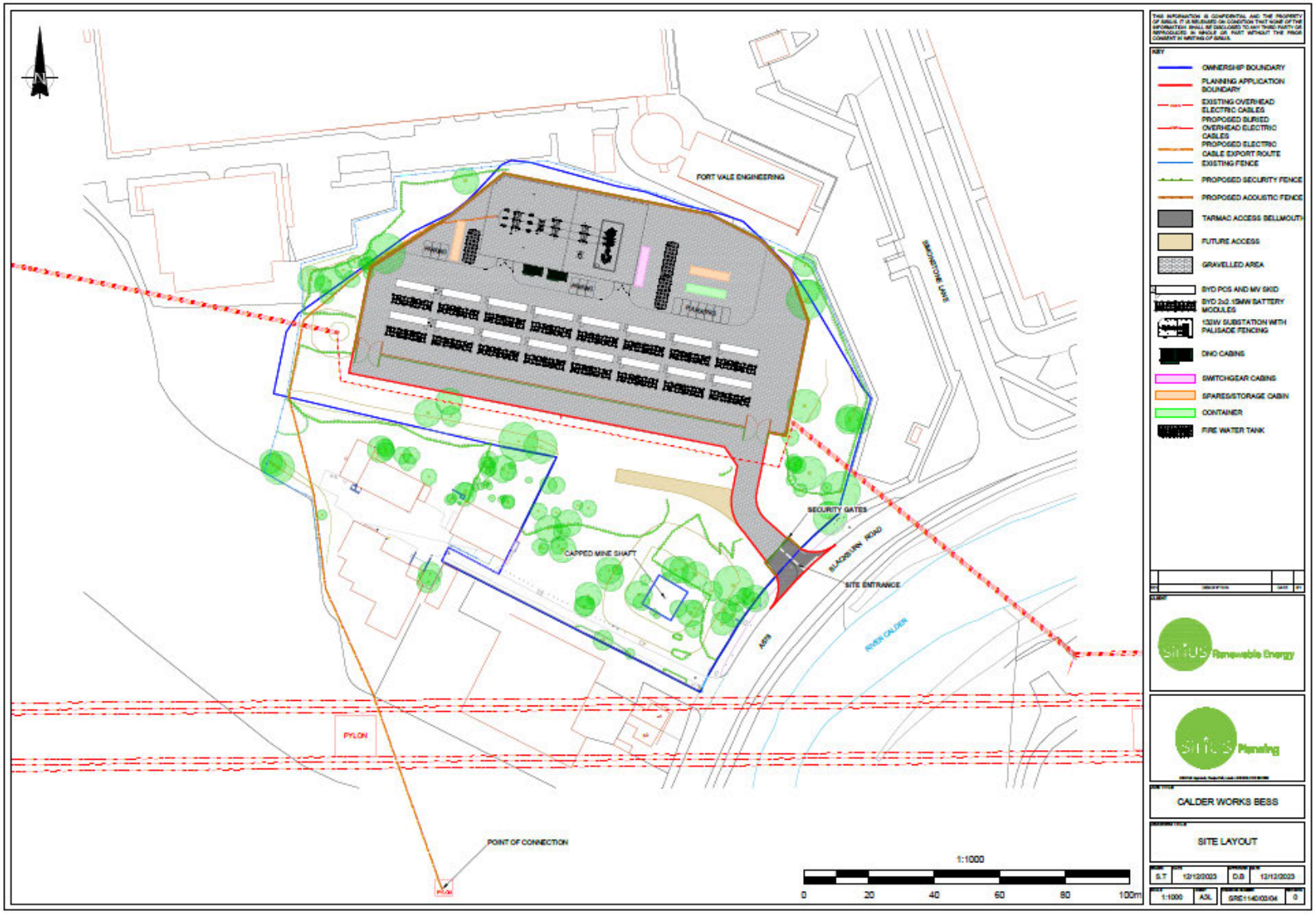
Table 2 - Guidelines for assessing the suitability of trees on (proposed development sites for bats

Suitability	Description
NONE	Either no PRFs in the tree or highly unlikely to be any
FAR	Further Assessment Required
PRF	A tree with at least one PRF Present

Table 3 - Guidelines for categorising the potential suitability of PRFs on trees on proposed development site for bats

Suitability	Description
NONE	Either no PRFs in the tree or highly unlikely to be any
PRF-I	Tree with PRF only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats
PRF-M	Tree with PRF suitable for multiple bats and may therefore be used by a maternity colony
CONFIRMED	Confirmed bat roost identified

Appendix B – Plan of Proposed Development/Works



Appendix C – UK Habitat Plan

BOW17.1281 Calder Works, Simonstone
Drawing title: UK Hab Plan

Drawn by: JM
Checked by: JJ

Date: 29/02/2024

bowland ecology

Legend

- Survey boundary
- Developmental footprint
- Brick wall
- Target notes

Broadleaved trees

- low bat potential

UKHab Habitats

- h3j - Willow scrub
- u1a - open mosaic habitats on previously developed land
- u1f - sparsley vegetated urban land
- w1g - other woodland broadleaved

Appendix D – Target Notes and Representative Photographs

TN No.	Photograph	Comment
TN1	 	The majority of the site is composed of young secondary broadleaved woodland. The woodland canopy comprises silver birch (*Betula pendula*), goat willow (*Salix Caprea*), pedunculate oak (*Quercus robur*), sessile oak (*Quercus petraea*), turkey oak (*Quercus cerris*), wych elm (*Ulmus glabra*), sycamore (*Acer pseudoplatanus*), rowan (*Sorbus aucuparia*), alder (*Alnus glutinosa*) and ash (*Fraxinus excelsior*). The trees range in age, from young saplings to mature trees which are predominantly present around the site's perimeters, where the land appears to be slightly raised. The understorey is composed of hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and dog rose (*Rosa canina*), and is impenetrable in places. Where the understorey is dense, leaf litter and bare earth cover the ground. Whereas ground flora is present where the understorey is more open; species recorded include herb Robert (*Geranium robertianum*), bracken (*Pteridium aquilinum*). Numerous rabbit (*Oryctolagus cuniculus*) warrens were noted within the woodland. A spoil pile consisting of rubble and concrete is present towards the south-east of the woodland, immediately north of the access point from Burnley Road. The woodland provides habitat for foraging and commuting bats, foraging and nesting birds, foraging and sett-excavating badgers and foraging and refuge habitat for amphibians, reptiles and small mammals.
TN2		A small linear strip of dense willow scrub located towards the north-west of the site.
TN3		The centre of the site is occupied by mosses and forbs associated with nutrient poor, moist soils, which have established across very thin soils atop areas of former hardstanding. Most of the habitat is dominated by areas of continuous springy turf moss and neat feather moss. Other species present include frequent wild strawberry, common sedge *(Carex nigra*) and creeping cinquefoil (*Potentilla reptans*), and occasional haircap moss (P*olytrichum sp*.), annual meadow grass (*Poa annua*), sow thistle (*Sonchus oleraceus*), ribwort plantain (*Plantago lanceolata*), ground ivy (*Glechoma hederacea*), willowherb (*Epilobium sp*.), selfheal (Prunella vulgaris), mouse ear hawkweed (*Pilosella officinarum*), dandelion (*Taraxacum sp.),* hard rush (Juncus inflexus) and pointed spear moss (*Calliergonella cuspidata*). Scattered willow, alder and hawthorn scrub is encroaching into this habitat from the woodland, however the habitat remains largely open, likely owing to a combination of shallow soils, rabbit grazing and occasional disturbance to access the electricity pylon.
TN4		Open areas of bare ground, rubble and cleared vegetation surround the electricity pylon at the western boundary of the site. Bramble (*Rubus fruticosus*) is slowly recolonising along with willowherbs and creeping buttercup.
TN5		Remnants of a brick structure is present towards the south of the woodland. All that currently remains is a short length approximately 1 m hight and 2 m in length. Gaps are shallow and cobwebbed and provide negligible potential for roosting bats. The brick wall may provide refuge habitat for amphibians, reptiles and small mammals.
TN6		Two separate stands of cotoneaster (*Cotoneaster* sp.) are present along the woodland boundary, towards the south-east of the site.
TN7		A large pile of soil, which continues along the wall line, is present at the road access to the site which prevents entry at the eastern boundary. Cut brash from pruning works along road also lay along wall.

Appendix E – Ecological Constraints and Opportunities Plan

BOW17.1281 Calder Works, Simonstone
Drawing title: Ecological Constraints and Opportunities Plan

Drawn by: JM
Checked by: JJ

Date: 29/02/2024

bowland ecology

Legend

- Survey boundary
- Development footprint
- Enhanced woodland habitat

UKHabs Habitats

- hj - willow scrub
- u1a - open mosaic habitats on previously developed land
- u1f - sparsley vegetated urban land
- w1g - other woodland-broadleaved

Appendix F – Information Sheets for Contractors

Amphibians

Information, legal responsibilities and best practice for the construction industry

Legal Information

In England it is **illegal** to deliberately capture, injure or kill a GCN, deliberately disturb a GCN, deliberately take or destroy GCN eggs, damage or destroy a breeding site or resting place used by a GCN. Penalties on conviction: the maximum fine is £5,000, up to six months in prison, per offence and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery. The following points are defences:

- ✓ Tending/caring for a GCN solely for the purpose of restoring it to health and subsequent release.
- ✓ Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Good to know-

- Newts are also carriers of the waterborne fungi- chytrid fungus. This fungus can be spread between water bodies and can cause the disease chytridiomycosis. If any work is being carried out around standing water then disinfection of footwear and equipment is important to prevent the spread of the disease.
- If a great crested newt is found before or after work (for example, pond management work) is commenced, then work should be immediately postponed and then started another time or with different methodology. If the newts cannot avoid being harmed then a license must be applied for,

Life cycle and seasonal appearances

April-May= This is when newts undertake courtship displays and mate with females. Certain amphibians can start this process as early as February.
June-August= Larval growth and development of newly hatched juveniles- This event can occur anytime between March and October (depending on pond conditions and other factors such as climatic conditions)
August-October= Metamorphosis and juvenile emigration to terrestrial environments occurs at this stage
November-February= Hibernation on land
February-May= Emergence of adult form newts and dispersal to ponds

Other protected amphibians

The other two species of **newts (smooth and palmate) are protected under Section 9 (5) of the Wildlife & Countryside act 1981**, which prohibits the 'sale, barter, exchange, transporting for sale and advertising to sell or to buy. Common toads and common frogs are also protected under this legislation. **The natterjack toad** (which are smaller than common toads at 6-7cm) are given **full protection** by section 9 of the same act due to the fact they are a threatened and rare species in the UK, being confined to only a couple coastal territories. It is an offence to 'intentionally kill. Injure or take (capture. etc); possession; intentional disturbance whilst occupying a 'place used for shelter or protection' and destruction of these places; sale, barter, exchange, transporting for sale or advertising to sell or buy'.

Common frog (top), common toad (middle), natterjack toad (bottom)

Key ID Features

Smooth Newt (*Lissotriton vulgaris*)

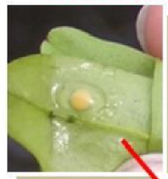
Egg stage- Smooth eggs are indistinguishable against palmate newt eggs, are rounded (not oval) and a grey/brown colour when freshly laid.

Larvae stage- Larvae are up to 3-4cm long (shorter than GCN), and have less obvious speckling and smaller gills.

Adult stage- Adult smooths measure up to 10cm, have a paler body than GCN with an orange belly stripe. Smooths lack some features of palmate newts (notably pink chin, and a cream spot). There is a slight silver/ orange strip along the base of the tail. The crest is wavy along whole back and tail, unlike palmates where it is more of a ridge shape.

(Young smooth)

Species protected by UK and European law
Great Crested Newt (GCN)- Triturus cristatus



GCN eggs are oval shaped with a pale yellow to white colour, these are usually found singly wrapped in folded leaves. Smooth and Palmate eggs are grey/ brown when freshly laid.

Adults are black, and are also covered in bright yellow spots on the underside and irregular blotches.

Larvae (Efts) are up to 5-9cm long and have distinguishable black speckling on the tail and body

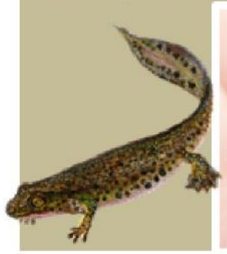
Adults also have a jagged crested tail with a recognisable stripe. Both males and females also have white speckling on the sides.

Palmate Newt (*Lissotriton helveticus*)

Egg stage- Palmate eggs are indistinguishable against smooth newt eggs, are rounded (not oval) and a grey/brown colour when freshly laid.

Larvae stage- Larvae are up to 3-4cm long (shorter than GCN), and have less obvious speckling and smaller gills.

Adult stage- Adult palmates measure up to 10cm, have a paler body than GCN with an orange belly stripe. They also have a pink chin with no spots/ speckles and a cream spot on both hind feet.



References:
Acknowledgements:

Version 10 December 2018

BATS AND ARBORICULTURAL WORKS

Information, legal responsibilities and best practice

Legal Protection

All UK Bat species are protected by European and UK law, in practical terms this means it is an offence to:

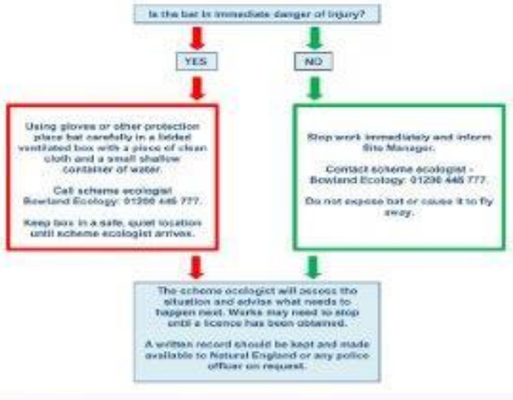
- Deliberately capture, injure or kill a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place (even if bats are not occupying the roost at the time);
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place;
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

Penalties on conviction: the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

Defences include:

1. Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release.
2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Found a bat during unsupervised works?



Bats can roost in the following places:

- Woodpecker holes, rot holes, hazard beams,
- Vertical or horizontal cracks and splits in stems or branches,
- Partially detached platey bark, gaps between overlapping stems, double leaders forming compression forks
- Knot holes arising from naturally shed branches, or branches previously pruned back to the branch collar,
- Man –made holes, cankers caused by localised bark death,
- Cavities created by branches tearing out from parent stems,
- Other hollows and cavities, including butt-rot
- Partially detached ivy with stem diameters over 50mm.

Field signs of bat presence:

- Live or dead bats: the smallest UK bat species, the pipistrelle is only 3.5–4.5cm long.
- Droppings: bat droppings look like mouse droppings but will crumble between your fingers (they are dry and made entirely of insects).
- Feeding remains: piles of butterfly/moth wings are often left below bat feeding perches.

Why wear gloves?

There is a small risk that some bats carry a rabies virus – European Bat Lyssavirus. The purpose of wearing gloves is to reduce the chance of being bitten, as the virus is transmitted via bat saliva. Thick leather gloves are appropriate for removing a bat from imminent danger but these should be clean.

In the event that you are bitten, wash the wound, gently but thoroughly, with soap and water. Speak to a health professional immediately, advising them that you have been bitten by a bat.

References:
Bat Conservation Trust. August 2016. Why wear gloves when handling bats?
BCT Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition, 2016

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Appendix G – 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 *European protected species*	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 *European Protected Species: Mitigation Licensing- How to get a licence* (NE 2010) *Bat Mitigation Guidelines* (English Nature 2004) *Bat Workers Manual* (JNCC 2004) *BS8596:2015 Surveying for bats in trees and woodland* (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.
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	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Natural England provides guidance in relation to rabbits (Tehnical 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), *Urban foxes* and SIN004 (2011) *The red fox in rural areas* as well as other wild mammals.

Species	Legislation	Offences	Notes on licensing procedures and further advice
For BAP species and Species of Principal Importance, see below			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.
Japanese knotweed, hybrid knotweed, giant knotweed **Giant hogweed** **Rhododendron** **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. *The Knotweed Code of Practice* (Environment Agency, 2013) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/536762/LIT_2695.pdf *Managing and controlling invasive rhododendron* (Forestry Commission, 2006) https://www.forestresearch.gov.uk/documents/2557/fcpg017.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