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Ecological Consultants
Environmental and Rural Chartered Surveyors

Preliminary Ecological Appraisal

Land off Parkside Road, Cleator Moor, CA25 5EZ

Green at Heart BEN GOLD

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ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.

If in doubt, stop work and seek further professional advice.

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Contents

1. EXECUTIVE SUMMARY

1.1.1 Envirotech NW Ltd were commissioned in November 2023 to carry out a Preliminary Ecological Appraisal of Land off Parkside Road, Cleator Moor. It is proposed new houses are constructed on site.

1.1.2 A data search and desk study of the site and an area within 2km of the site were undertaken to establish the presence of protected species and notable habitats.

1.1.3 The site was then visited by a licenced ecologist from Envirotech NW Ltd on 23rd November 2023. A full botanical survey of the site was initially undertaken and this was followed by surveys to establish the presence or absence of notable species at the site or in proximity such that they may be affected by the proposed development.

1.1.4 The plant species assemblages recorded at the site are all common in the local area and are considered to be of low ecological value, consisting of fields of poor semi-improved sheep pasture. Sympathetically landscaped open space is considered to offer habitat of comparable ecological value.

1.1.5 Based on the current understanding of the site proposals however, SSSI Impact Risk Zones may be a notable constraint depending on the finalised site plan and number of houses delivered. At this stage, the indicative site plan details the provision of 104 houses, which falls into one of the specified SSSI risk categories (residential developments of 100 or more units within an existing settlement/urban area). Cumberland Council may therefore seek consultation with Natural England given the River Ehen SSSI and SAC are located 350m south-east of the site.

1.1.6 None of the hedgerows around the site perimeter were considered important under the Hedgerow Regulations (1997).

1.1.7 Bats, badgers, nesting birds and low numbers of common amphibian are known to occur in the local area. However, there was no conclusive evidence of any specifically protected species regularly occurring on the site or the surrounding areas which would be negatively affected by site development following the mitigation proposed.

1.1.8 Contractors will be observant for protected species and all nesting birds. Should any species be found during construction, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

2. INTRODUCTION

2.1 Background

2.1.1 In November 2023 Envirotech NW Ltd were commissioned by Genesis Homes to carry out a Preliminary Ecological Appraisal of Land off Parkside Road, Cleator Moor, central grid reference NY 02898 15023 (Figure 1). A site investigation was undertaken and a report compiled which includes recommendations for any future actions and or mitigation required.

2.1.2 The survey was requested in connection with the proposed construction of new houses.

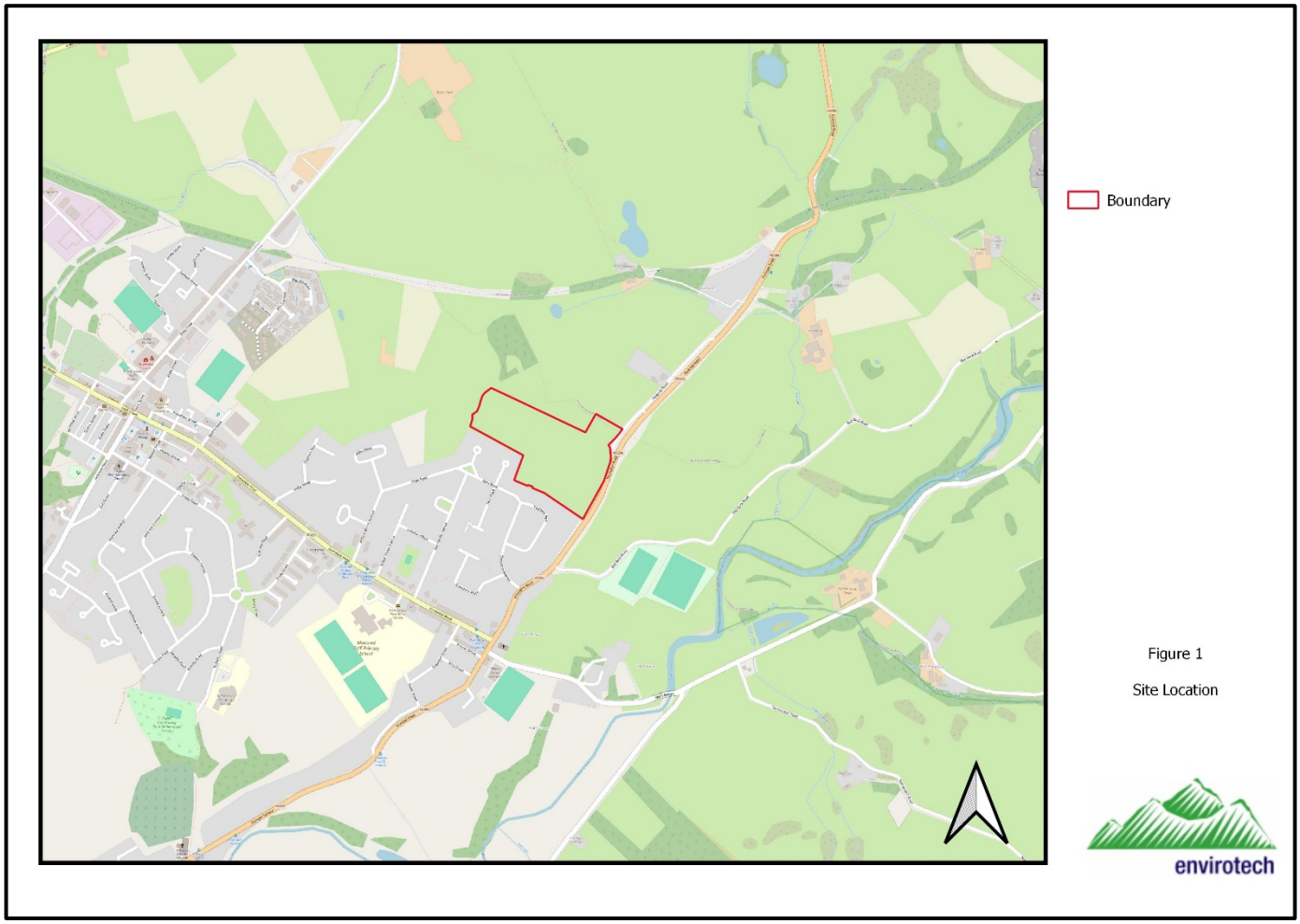


Figure 1

Site Location

2.2 Objectives

2.2.1 The main objectives of the study were:

- The completion of a Phase 1 Habitat Survey including the preparation of a vegetation and habitat map of the site and the immediate surrounding area.
- The survey and assessment of all habitats for statutorily protected species.
- An evaluation of the ecological significance of the site.
- The identification of any potential development constraints and the specification of the scope of mitigation and enhancement required in accordance with wildlife legislation, planning policy and other relevant guidance, and;
- The identification of any further surveys or precautionary assessments that may be required prior to the commencement of any development activities.

3. METHODOLOGY AND SOURCES OF INFORMATION

3.1 Data Search

3.1.1 The Cumbria Biodiversity Data Centre "CBDC", the Envirotech dataset, National Biodiversity Network (NBN) and the Multi-Agency Geographic Information for the Countryside (MAGIC) were searched to establish the presence of any records of statutorily protected, notable or rare species, and any designated sites of international, national, regional or local importance within a 2km radius of the site boundary.

3.1.2 The Envirotech dataset is compiled from extensive field surveys from the period 2004-present, as well as records obtained from third parties during this time.

3.1.3 Google Earth and Google Street View were consulted to establish the presence of any features of ecological importance within the local area.

3.2 Vegetation and Habitats

3.2.1 A vegetation and habitat map was produced for the site and the immediate surrounding area. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2003).

3.2.2 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act (1981) and indicators of important and uncommon plant communities. All plant nomenclature follows Stace (2019).

3.2.3 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act (1981), namely Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) on terrestrial habitat and aquatic species such as floating pennywort (*Hydrocotyle ranunculoides*), water hyacinth (*Eichhornia crassipes*) and New Zealand pygmyweed (*Crassula helmsii*).

3.2.4 The survey was also informed by questioning the landowner/site agent to ascertain the recent history of the site.

3.2.5 Habitats of Principal Importance (HPI) were cross referenced with Natural England's inventory against the site boundary and where found ground truthed.

3.3 Timing and Personnel

3.3.1 During the visit, weather conditions were suitable for the survey types undertaken.

3.3.2 The site and surrounding land was visited on 23RD November 2023 by: -

- (BF) Mr Bradley Foster MEnv (Hons)
  Natural England Bat Class Licence (Level 1 Agent)
  Natural England Barn Owl Licence (Agent)
  Natural England Great Crested Newt Licence (Level 1 Agent)

4. SPECIES SURVEY METHODOLOGY

4.1 Amphibian

4.1.1 Great crested newts (*Triturus cristatus*) are protected under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedule 5 of the Wildlife & Countryside Act (1981).

4.1.2 Were relevant, water-bodies located within or adjacent to the study area were identified and where access was possible were assessed for their potential to support great crested newts.

4.1.3 The criteria used in the assessment are based on those contained in the Herpetofauna Workers Manual and Oldham et al, 2000, and in applying these criteria a precautionary approach was adopted. Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's Licensing process was used to determine the suitability of ponds for great crested newts.

4.1.4 Where relevant, pond assessments were undertaken in order to determine which water-bodies, based on their potential to support great crested newts, should be subject to presence/absence surveys.

4.1.5 A field pond (Pond 1) is located c.210m north of the site and is connected via a combination of open grassland, hedgerows and scrub. Whilst the pond is not located within the same land ownership boundary as the site, this was assessed from a public bridleway adjacent. An additional pond (Pond 2) is located c.380m north of the site. Whilst this pond could not be observed from adjacent land it was considered sufficiently low risk given its distance from the site.

4.2 Badger

4.2.1 Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act (1992). This legislation arises from animal welfare issues (rather than on the basis of nature conservation grounds) and protects badgers from being killed, injured or disturbed whilst occupying a sett.

4.2.2 A disturbance to badgers in their setts may occur as a result of construction operations. Natural England recommends that the use of heavy machinery in proximity of a sett entrance should be avoided, with a 'disturbance free-zone' being established.

4.2.3 The degree of disturbance attributed to construction activity is a function of the background level of activity badgers are accustomed to and that which will be attributed to a proposed activity. The "disturbance free zone" is therefore site specific.

4.2.4 The survey for badgers comprised an assessment of all suitable habitat within and outside the study area boundary (where this was possible) to a distance of 30m for indications of use by badgers.

4.2.5 Signs of badgers which were searched for included:

- Setts - 'D' shaped entrances at least 25cms wide and wider than they are high with large spoil mounds
- Discarded bedding at sett entrances (this includes grass and leaves)
- Scratching posts on shrubs and trees close to a sett entrance
- The presence of badger hairs which are coarse, up to 100mm long with a long black section and a white tip
- Dung pit latrines and footprints
- Habitual runs through vegetation and beneath fences
- Hedgehog carcases

4.3 Bats

4.3.1 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981), and are included on Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, as a Protected Species. Taken together, these pieces of legislation make it an offence to:

- Intentionally or recklessly kill, injure or capture bats;
- Deliberately or recklessly disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts.

4.3.2 The Bat Conservation Trust Collins, J. (ed) (2023) issued guidelines on bat survey methodology, a key feature of their recommendation is for the undertaking of a pre-survey assessment – an initial desk-study and a walkover assessment of the survey area and its surrounding area to identify the relative value of the habitats present for bats and likely commuting routes. This is to be followed by a survey program that is appropriate to the likely level of bat activity within the survey area to be determined by and based on the experience of the surveyor.

4.3.3 The potential value of the survey area for foraging bats was assessed through consideration of two main factors: professional knowledge of bat ecology and foraging behaviour in combination with the geographical location, topography and habitats present within the survey area and surrounds.

4.3.4 Where relevant, trees and structures on and within the survey area boundary were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees and buildings on the site to allow an assessment of their potential to be used by bats to be made by a licensed surveyor.

4.3.5 Trees were all assessed in accordance with Collins, J. (ed) (2023) but categorised as 1* - 3 in accordance with Hundt (2012). Collins, J. (ed) (2023) does not provide roost classification criteria. The schedule of risk provided by Hundt (2012) is considered most appropriate in this case.

4.4 Birds

4.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act of 1981 when building a nest, rearing young or sitting on eggs. Some bird species, such as barn owl (*Tyto alba*), are protected when near an active nest site. Several birds are listed as Species of Principal Importance (SPI).

4.4.2 Where relevant, bird species and behaviour are noted during the field survey. All areas are covered equally, in order to avoid the subjective survey of better quality 'bird habitat'.

4.5 Brown Hare

4.5.1 The brown hare (*Lepus europaeus*) is a SPI.

4.5.2 The survey method involved walking boundaries and surveying with binoculars. The survey was conducted at a suitable distance to ensure that the hares were not disturbed. Generally, surveys were undertaken throughout the early afternoon and evening when hares are thought to be most active and feeding.

4.5.3 Where present the number of brown hares in each field or hedgerow was recorded, together with the nature and use of the field, climatic conditions and time of day. The presence of forms and faeces where present were also recorded.

4.6 Invertebrates

4.6.1 A general assessment was made of the study area's suitability for supporting invertebrates during the phase 1 survey. The study area's lack of habitat diversity, species-poor composition and uniformity of vegetation structure (i.e., lack of variation in height and microtopography) resulted in our belief that a low diversity of invertebrates would be likely to occur across the site.

4.6.2 The presence of invertebrates was noted during the other surveys which were undertaken. The extent of sampling was limited in that it could be confirmed that no SPI would be likely to be affected by the proposal.

4.7 Reptiles

4.7.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act of 1981. It is an offence to intentionally kill, injure, sell or advertise to sell any of the six native species.

4.7.2 The survey for these species was based on assessing the habitat type and suitability of the site. This comprised an assessment of satellite imagery for the site and surrounding area as well as comparison of the results from the records searches with habitat types. The general habitat at the site was evaluated in terms of its suitability to reptiles for foraging or breeding.

4.7.3 Reptile surveys comprising visual encounter surveys were undertaken. Habitat at the site was not considered sufficiently suitable for a full presence/ absence survey to be warranted.

4.8 Survey limitations

4.8.1 The survey was undertaken in late autumn. At this time of year plant species are less easily identified and the activity of some species is reduced.

4.8.2 However, due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site.

4.8.3 The duration, extent and scope of the surveys were considered sufficient to plan appropriate mitigation and recommend additional precautionary survey work required prior to the commencement of work.

4.8.4 No significant survey limitations were encountered.

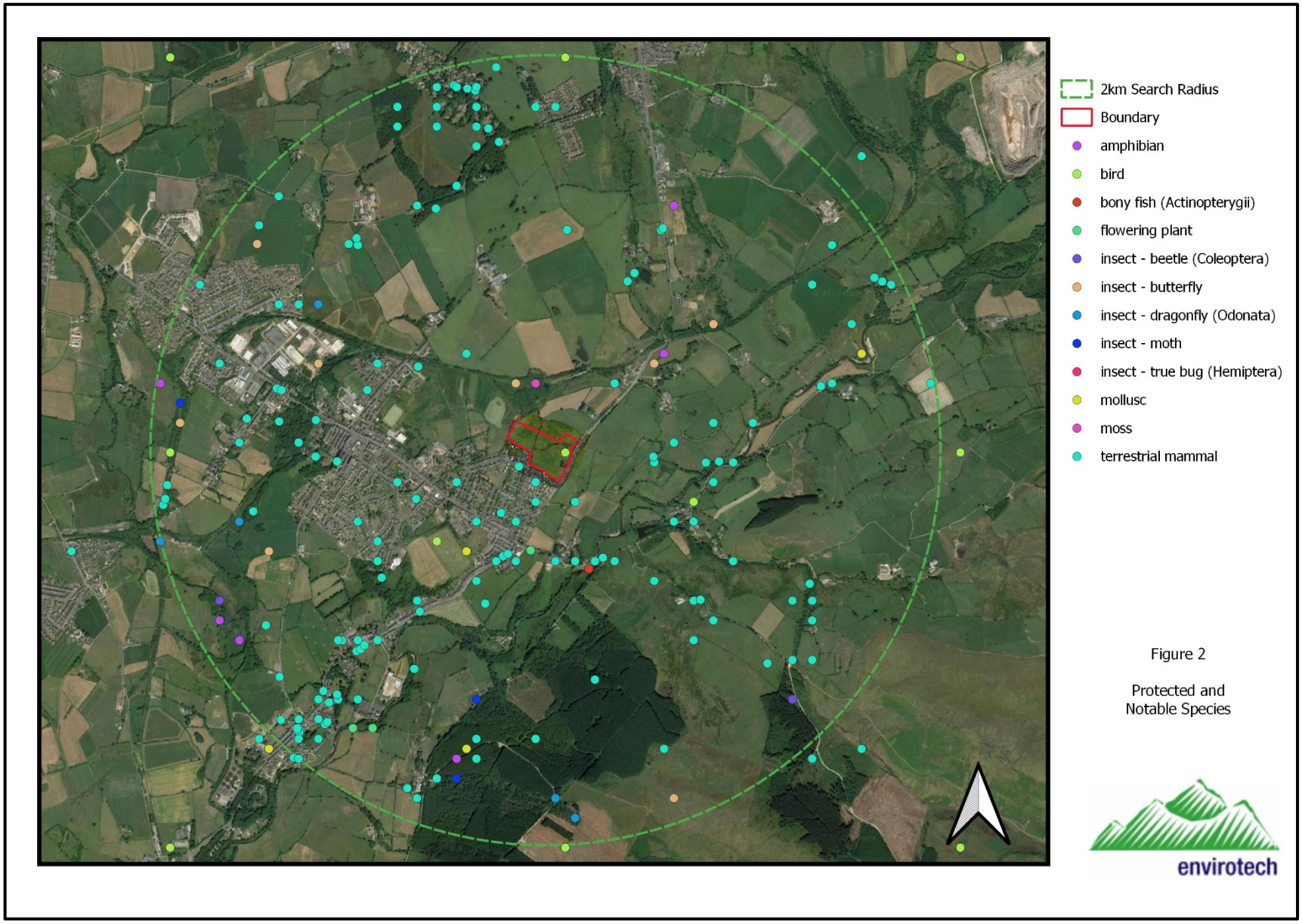
5. RESULTS

5.1 Data Search

5.1.1 CBDC hold numerous records of protected or notable species for the site and the wider area (Figure 2). These records relate to birds, including Buzzard *(Buteo buteo),* Curlew *(Numenius arquata),* Jackdaw *(Corvus monedula),* Magpie *(Pica pica)* and Swallow *(Hirundo rustica).* Records do however correspond to a four-figure grid reference (NY01H), accurate to within 1km. Resultingly, it is uncertain if records relate to the site or the surrounding area. These are discussed in the relevant sections below.

5.1.2 There are small pockets of deciduous woodland, high quality semi-improved grassland and moorland within 2km of the site. An area of rush pasture and deciduous woodland is located c.90m north of the site (Figure 3).

5.1.3 The nearest statutory protected site is the River Ehen SAC, located c.330m south-east of the site (Figure 4).


2km Search Radius
Boundary
amphibian
bird
bony fish (Actinopterygii)
flowering plant
insect - beetle (Coleoptera)
insect - butterfly
insect - dragonfly (Odonata)
insect - moth
insect - true bug (Hemiptera)
mollusc
moss
terrestrial mammal
Figure 2
Protected and
Notable Species
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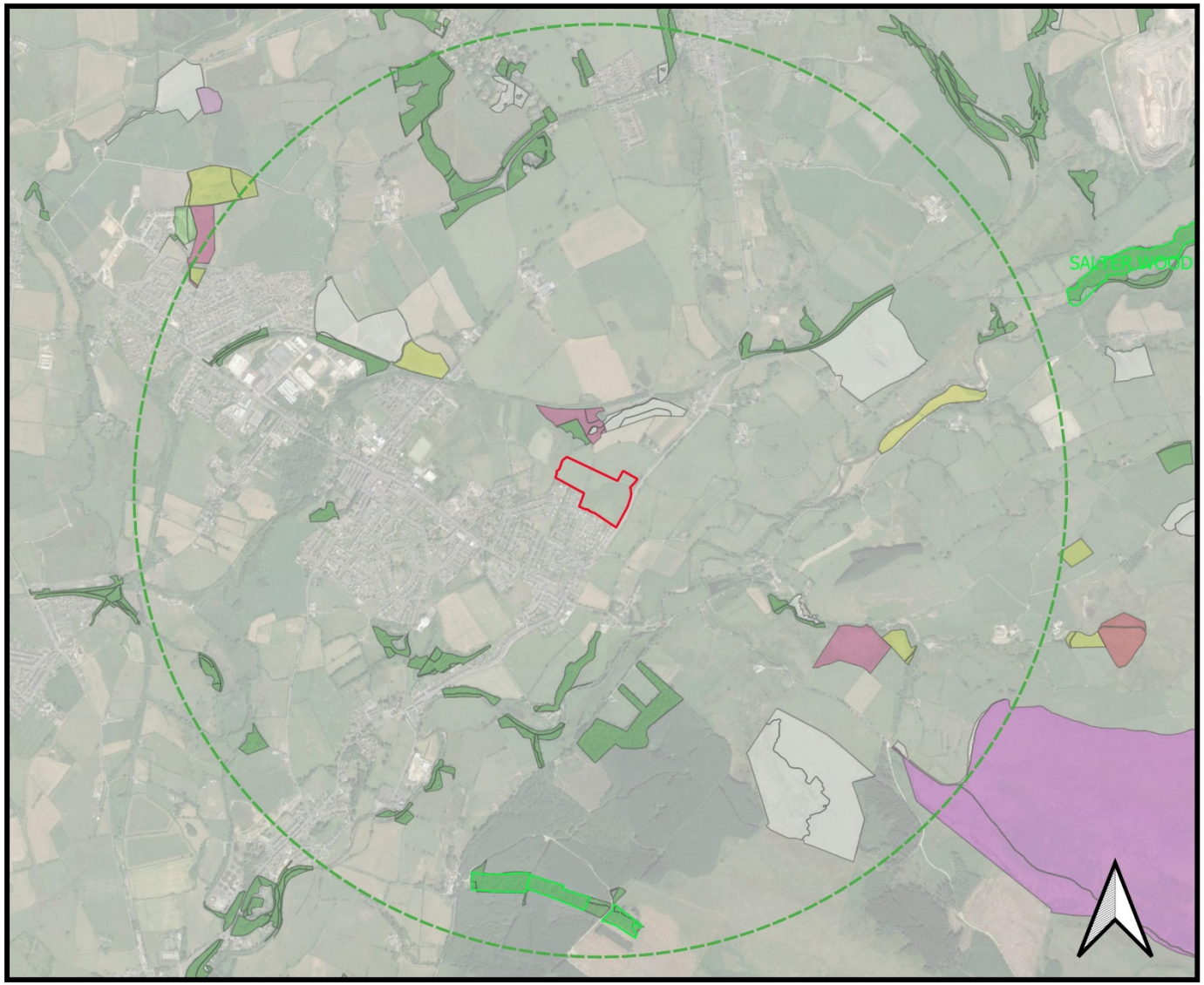

Boundary

Priority Habitat Inventory

- Deciduous woodland
- Good quality semi-improved grassland
- Grass moorland
- Lowland fens
- Lowland heathland
- No main habitat but additional habitats present
- Purple moor grass and rush pastures

Figure 3

BAP and Noteable Habitats

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Figure 4

Protected Sites

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6. PHASE 1 SURVEY RESULTS

6.1 Habitat Results

6.1.1 A drone was overflown the site on 23rd November 2023. This produced a number of images which were stitched together to form an orthomosaic map, providing up to date aerial imagery of the site from which phase 1 habitat mapping has been based. Figure 5a shows the hi-resolution imagery overlain Google Earth.

6.1.2 Figure 5b shows a panoramic view of the site from a height of approximately 120m.

6.1.3 The site comprises fields of poor semi-improved grassland bound by hedgerows and small scattered trees. The site is enclosed by residential housing to the south, Parkside Road to the east and open farmland to the north and west.

6.1.4 See Figure 6 for the Phase 1 Habitat Plan and Table 1 for the descriptive Target Notes.

Figure 5a

Orthomosaic map using drone imagery taken on

23/11/2023

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Figure 5b- *Panoramic image of the site from a height of approximately 120m.*

Target Note	Description	Comment
TN1	Hedgerow 1	Bounding the eastern extent of the site along Parkside Road is a long species-poor hedgerow by Hazel (*Corylus avellana)* and occasional Hawthorn *(Crataegus monogyna).* This hedgerow is short and heavily cut back, its groundflora consisting of Male-Fern (*Dryopteris filix-Mas),* Rosebay Willow herb *(Epilobium angustifolium)*, Cleavers *(Galium aparine)* and Bramble *(Rubus fruticosus agg)* at the time of the survey.
TN2	Hedgerow 2	Forming a node with Hedgerow 1, Hedgerow 2 partially bounds the southern extent of the site, backing onto the adjoining residential properties. Species consist of overgrown Honeysuckle (*Lonicera periclymenum),* Hawthorn and Rose (Rosa *canina* or *arvenis).*
TN3	Hedgerow 3	Hedgerow 3 constitutes a long defunct hedge in the north of the site. Species consist of Hawthorn, Ash *(Fraxinus excelsior),* Holly (*Ilex aquifolium),* Sycamore (*Acer pseudoplatanus)*, Hazel and Gorse *(Ulex europaeus).* There is very little basal groundflora beneath the hedge, which is both horizontally and vertically gappy and positioned on top of a small banking.
TN4	Hedgerow 4	Hedgerow 4 forms a defunct line of Hawthorn and Blackthorn *(Prunus spinosa)* shrubs, which is gappy and intermittent, containing large gaps in excess of 3-4m. As with Hedgerow 3, this habitat contains very little groundflora, located in an open and exposed area of the site.
TN5	Tree Line 1	A line of trees (likely planted as hedgerow) bounds part of the western edge of the site boundary. Trees consist of early-mature Blackthorn, Hawthorn, Hazel and Holly. All other trees/vegetation are located outside the site boundary on the opposite side of the stock fence.
TN6	Scattered Trees	Semi mature Sycamore, Wild Cherry (*Prunus avium*) and Hazel are scattered along the fence line within the development boundary in the west of the site.
TN7	Poor Semi-improved Grassland	Fields consist of poor semi-improved grassland used for sheep grazing. Species consist of Perennial Ryegrass (*Lolium perenne),* Creeping Bent (*Agrostis stolonifera*), occasional Cocksfoot *(Dactylis glomerata),* Broad-leaved Dock (*Rumex obtusifolius*), Common Sorrel (*Rumex acetosa*), Creeping Buttercup (*Ranunculus repens*), White Clover (*Trifolium repens*) and Field Speedwell (*Veronica persica*). Occasional Common Bent (*Agrostis capillaris),* Yorkshire Fog *(Holcus lanatus)* and False oat grass *(Arrhenatherum elatius)* occupy site's field verges, although this vegetation is infrequent.
TN8	Ruderal	In the east of the site are patches of damper ground colonised by Hard rush *(Juncus inflexus),* Common rush (*Juncus effusus*) and ruderal species such as Creeping thistle (*Cirsium arvense*), Sowthistle (*Sonchus oleraceus*) and Nettle *(Urtica dioica).*

Table 1 *Details of Target Notes.*

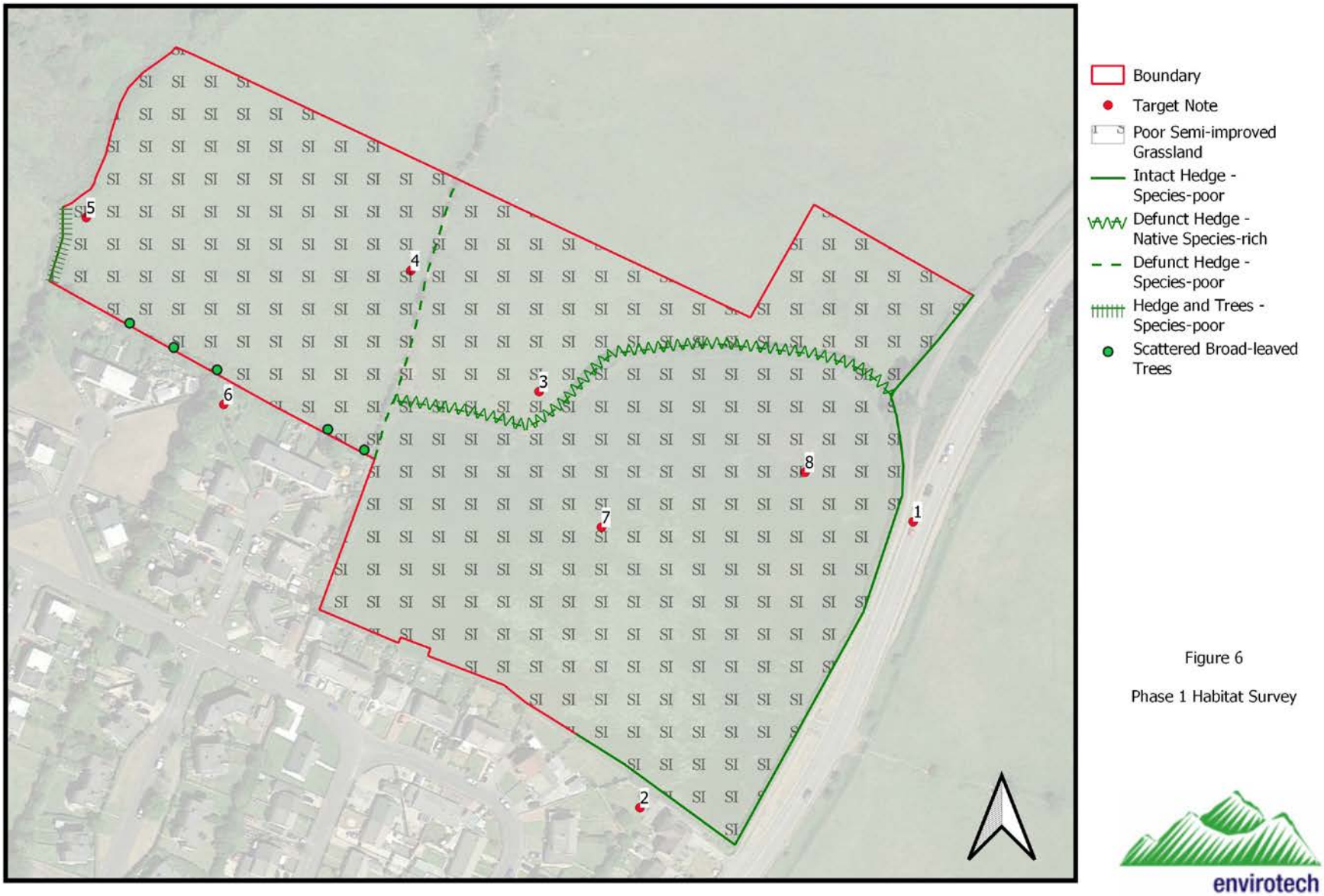

Figure 6

Phase 1 Habitat Survey

	Hedgerow 1 (looking south-west). The northern half of the hedgerow is taller and dominated by Hazel.
	Hedgerow 1 (looking north-east). The southern half of the hedgerow is shorter and heavily cut back, containing a small degree of Hawthorn.
	Hedgerow 2 partially encloses the southern extent of the site, consisting of dense thickets of Honeysuckle, Hawthorn and Rose.

Hedgerow 3 is gappy and defunct, but contains a good mix of native woody species (Ash, Hawthorn, Hazel, Holly, Sycamore and Gorse).

The hedgerow sits on top of a slight bank.

Hedgerow 4 splits the smaller field to the west from the larger fields to the east.

	Hedgerow 4, as seen looking east. Gaps total more than 20m, with many individual gaps exceeding 3-4m.
	The site consists of poor semi-improved grassland currently used for sheep grazing.
	

<table>
<tr><td>  </td><td>The sward height of the fields are short and uniform throughout, consisting of grass <5cm.</td></tr>
<tr><td>  </td><td rowspan="2">Pockets of ruderal vegetation and rushes frequent the damper areas of the grassland.</td></tr>
<tr><td>  </td></tr>
</table>

	A short line of semi-mature trees are located inside the western boundary of the site, comprising Hawthorn, Blackthorn, Hazel and Holly.
	A pond is located c.210m north of the site outside of the land ownership boundary. This pond was observed from a bridleway from approximately 20m away.

Table 2 *Photographs*

6.2 Vegetation

6.2.1 Details of the plant species found on site are included in the target notes. Species recorded are all commonly occurring and undoubtedly occur elsewhere in similar habitats in the local area.

6.2.2 The poor semi-improved grassland has a low species diversity and ecological value. Whilst the assemblage of species within it is higher than improved pasture, species are indicative of regular grazing and disturbance. This habitat does not constitute a Habitat of Principal Importance (HPI).

6.2.3 The intact hedge bounding the east of the site (Hedgerow 1) is species poor, containing a low diversity of woody plant species (Hazel and Hawthorn).

6.2.4 Hedgerow 2 constitutes a Hawthorn hedgerow interspersed with Honeysuckle and Rose.

6.2.5 Hedgerow 3 possesses a diverse mix of shrubby species including Ash, Hazel, Hawthorn, Holly, Gorse and Sycamore, cutting east to west through the centre of the site over a distance of +200m. The hedgerow is overgrown and gappy, located on top of a small bank.

6.2.6 Hedgerow 4 consists of a long defunct line of Hawthorn and Blackthorn hedgerow, with many gaps exceeding 3-4m. Hedgerows 3 and 4 have no understorey and have been significantly impacted by livestock grazing.

6.2.7 None of the hedgerows are classified as important under the Hedgerow Regulations (1997). Whilst hedgerow 3 is relatively diverse, it does not contain the minimum number of woody species and/or features for its recorded length (+200m). This is discussed in more detail in See Appendix 1.

6.2.8 Regardless, all hedgerows are HPI habitats and should (where possible) be retained in any proposed scheme. Where lengths need to be lost, hedgerows should be transplanted or new hedges planted as compensation.

6.2.9 Trees within the site boundary comprise small hawthorn trees within the defunct hedge lines along with occasional semi-mature ash and oak to the field boundaries.

6.2.10 There is no evidence of Japanese knotweed, giant hogweed or Himalayan balsam on the site. No other invasive or notable weed species listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) was identified within the site or adjacent land.

6.3 Amphibian

6.3.1 There are six records of three species of amphibian within 2km of the site, relating to Common Frog *(Rana temporaria),* Common Toad *(Bufo bufo)* and Smooth Newt (*Lissotriton vulgaris*). The nearest of these records is located 600m north-east of the site and relates to Common Toad.

6.3.2 The core development area has a low value to amphibians being open and exposed. Structural diversity at ground level across the site is very poor. There are no areas with log, rubble piles or compost heaps which would be particularly favourable to amphibians- the site consisting of open fields of poor semi-improved grassland.

6.3.3 We consider that amphibians would be unlikely to attempt to cross the site as it comprises an area that is mostly open with uniform length grass. Whilst not a physical barrier to the dispersal of amphibians, the site is regarded as being a potentially hostile environment to them.

6.3.4 Hedgerows dividing the fields (Hedgerows 3 and 4) are unlikely to offer high quality refuges and/or hibernacula for GCN given their vertical and horizontal gappiness and poor degree of ground vegetation.

6.3.5 A field pond (Pond 1) is however located c.210m north of the site boundary. Land access to the pond could not be grated owing to being located within a separate land ownership boundary. However, this pond was assessed from a public bridleway approximately 20m away.

6.3.6 Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's Licensing process was used to determine the suitability of the pond for great crested newts. The HSI was developed as a tool to aid fieldworkers to give ponds and their surrounding habitat a numerical score in terms of their suitability for great crested newts. See Table 3.

Pond 1	**1**
Location	1
Pond area	0.98
Pond drying	0.9
Water quality	0.33
Shade	1
Fowl	0.67
Fish	0.67
Ponds	0.95
Terrestrial habitat	0.33
Macrophytes	0.3
HSI	*0.64*

Table 3 *Results of Habitat Suitability Index*.

6.3.7 Within the Natural England Method Statement application form for great crested newt Licences, guidance states the following approach (Natural England, 2008):

6.3.8 'If a pond has a very low HSI score (say <0.5) then there would typically be a minimal chance of great crested newt presence. Hence, with due care and in limited circumstances, the HSI might be used in the absence of newt survey to help conclude that an offence is highly unlikely and therefore work could proceed in that area without a licence. This application of the HSI should only be used where the predicted impacts -

were newts to be present - would be low (eg, development at least 100m from pond, permanent habitat loss <0.5ha or temporary habitat loss <5ha). The developer and consultant should realise that there would still be a risk of committing an offence, but it would typically be so low as to be negligible. Obviously, note that if HSI >0.5, this is not confirmation of newt presence; a newt survey would be required to confirm this'.

6.3.9 The pond scores 0.64 for GCN suitability, which indicates the pond is of an 'average' suitability for use by this species. Suitable indices resulting in this pond's score included its size, permanence and wider geographic location. Whilst the land encompassing the pond is of a moderate to high quality for use by GCN in their terrestrial phase- being bound by beds of Common Reed *(Phragmites australis)* and Hawthorn and Willow (*Salix Sp*.) scrub- this habitat is not extensive, encompassing <25% of land within a 250m radius. Arable farmland and poor semi-improved pasture are instead the most dominant land types (Figure 7).

Figure 7

Site with 100m, 250m and 500m Buffer Zones and Amphibian Records

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6.3.10 Owing to ponds being inaccessible, Natural England's rapid risk assessment tool was used for the site (Table 4). This tool takes a worst-case scenario approach by assuming Great Crested Newts are present in all ponds considered, factoring in their distance from the proposal and the area of land lost or damaged (either permanently or temporarily). Both Ponds 1 and 2 were considered as part of this assessment.

6.3.11 The area of land judged to be permanently lost/damaged as a result of the proposal was estimated to be 5ha, which was deduced from the area of the site's red line boundary.

Component	**Likely effect** (select one for each component; select the most harmful option if more than one is likely; lists are in order of	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	1 - 5 ha lost or damaged	0.4
Land >250m from any breeding pond(s)	1 - 5 ha lost or damaged	0.04
Individual great crested newts	No effect	0
	Maximum:	0.4
Rapid risk assessment result:	**AMBER: OFFENCE LIKELY**	

Table 4- *Natural England's Rapid Risk Assessment Tool*

"Amber: offence likely" indicates that the development activities are of such a type, scale and location that an offence is likely. In this case, the best option is to redesign the development (location, layout, methods, duration or timing; see Non-licensed avoidance measures tool) so that the effects are minimised. You can do this and then re-run the risk assessment to test whether the result changes, or preferably run your own detailed site-specific assessment. Bear in mind that this generic risk assessment will over- or under-estimate some risks because it cannot take into account site-specific details, as mentioned in caveats above. In particular, the exact location of the development in relation to resting places, dispersal areas and barriers should be critically examined. Once you have amended the scheme you will need to decide if a licence is required; this should be done if on balance you believe an offence is reasonably likely.

6.3.12 An amber offence relates to a maximum notional probability of 0.4 that great crested newts will be disturbed, injured, killed, or their resting/breeding places damaged or destroyed (should no mitigation measures be put in place).

6.3.13 However, the rapid risk assessment tool has been developed as a general guide only and is rather simplistic. The tool uses a coarse assessment approach, often resulting in the over or under-estimation of some risks. It also fails to consider site-specific details such as the timing and duration of works, terrestrial habitat quality or the detailed layout of the development with respect to newt resting and dispersal. It also assumes the development proposal concerned will proceed without any precautionary mitigation. Resultingly, it should never be utilised as a substitute for a site-specific risk assessment informed by survey.

6.3.14 The development proposal will primarily affect a species-poor sward of short semi-improved grassland of very low suitability for GCN. It is likely that GCNs, if present within the local area, would be contained within areas of scrub, well-defined hedgerows and high-quality gardens as opposed to the relatively poor habitats contained within the development footprint of the site.

6.3.15 Whilst the proposed development will not result in the permanent loss of or a substantial negative effect on any waterbodies, considerations regarding the methods, duration and/or timing of works should be made.

6.3.16 Resultingly, it is considered that the implementation of such measures (as detailed in section 7.2 of this report) will enable works to be undertaken in a manner which minimises potential impacts on amphibians, without the need for an EPS mitigation licence or additional surevy.

6.4 Badger

6.4.1 There are three badger records within a 2km radius of the site, located c.1300m south-east of the site.

6.4.2 Badger setts do not occur on site and a lack of feeding signs or runs across the site would suggest that they do not occur within 30m of site boundaries.

6.4.3 The proposed development will not impact on any existing badger runs or setts. The porosity of the surrounding fields to the passage of badgers will not be affected.

6.5 Bats

6.5.1 There are 16 records of five species of bat within 2km of the site.

6.5.2 The habitat on site is of a low value for bats being open grassland. Hedgerows offer lengths of suitable foraging habitat, but there is limited, as is their degree of connectivity with habitats within the wider area.

6.5.3 Higher quality habitats for foraging bats do occur locally, most notably along Parkside Bridleway, in addition to the riparian tree lines along the River Ehen.

6.5.4 It is not considered there would be significant degradation of foraging habitat as a result of the proposal so long as the hedgerows and trees are retained and/or their loss is compensated for in any landscaping scheme.

6.5.5 All trees around the site perimeter were also assessed in accordance with Collins ed. (2016) and assigned a risk category. All of the trees on site were category 2 (low) or category 3 (negligible) risk. No indications of roosting or highly suitable roost sites were located within the trees given their size and age. All of the trees could be adequately inspected from the ground. Risk categories from Hundt (2012) and the requirement for mitigation for each tree category are shown on Figure 8 below.

6.5.6 We consider bat species are highly unlikely to rely on the site for feeding, but may occur in the local area. Roosting by bats will not occur on the site.

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
Known or confirmed roost	Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above		The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement.
Category 1* Trees with multiple, highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. ***A consultant ecologist is required***	Avoid disturbance to trees, where possible. Further dusk and pre-dawn survey to establish more accurately the presence, species, numbers of bats present and the type of roost, and to inform the requirements for mitigation if felling is required.	Felling would be undertaken taking reasonable avoidance measures[3] such as 'soft felling' to minimise the risk of harm to individual bats.
Category 1 Trees with definite bat potential, supporting fewer suitable features that category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats. ***A consultant ecologist required***	Avoid disturbance to trees, where possible. More detailed, off the ground visual assessment. Further dusk and pre-dawn survey to establish the presence of bats, and if present, the species and numbers of bats and type of roost, to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above. Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.	None. ***A consultant ecologist is unlikely to be required***	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.
Category 3 Trees with no potential to support bats	None. ***A consultant ecologist is not required unless new evidence is found***	None.	No mitigation for bats required.

Figure 8 *Tree risk categories from Hundt (2012).*

6.7 Birds

6.7.1 There are 886 records of birds within 2km of the site.

6.7.2 The gappy defunct hedges within the site (Hedgerows 3 and 4) have insufficient density to be of high value to nesting birds.

6.7.3 The intact hedgerows and scattered trees bounding the peripheries of the site offer potential habitat for feeding and nesting birds. The grassland areas have a low potential for use by ground nesting birds as the swards are maintained at a short sward height.

6.7.4 There were no rot holes or cracks in the trees within the site boundary which would support tree hole nesting species such as woodpeckers.

6.7.5 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.

6.7.6 The habitat on site is not considered to be of anything more than of local significance, habitats present are well represented in the local area. The impact on nesting birds is therefore considered likely to be minor.

6.7.7 Precautionary mitigation would be appropriate in respect of construction activities and compensation for lost nesting and foraging opportunities will be required.

6.8 Brown Hare

6.8.1 Brown hare are a SPI. There are no records of brown hares within 2km of the site.

6.8.2 No indication of brown hares was recorded on the site.

6.8.3 The site boundaries have some potential for brown hares to create forms but use of the site is likely to be limited due to its open and exposed nature.

6.8.4 A risk assessment of the site in respect of its future potential for and value to brown hares could be adequately made. We consider the risk to brown hares is very low.

6.9 Invertebrates

6.9.1 There are 44 records of notable invertebrates within 2km of the site, relating to a range of moths, butterflies, dragonflies and beetle.

6.9.2 The nearest record is located c.200m north of the site, relating to the wall butterfly (*Lasiommata megera*), which is associated with unimproved coastal grassland, clifftops and hedgerows.

6.9.3 No deadwood was recorded on site, and the plant assemblages present are not noteworthy for supporting invertebrates.

6.9.4 Given the poor-quality habitats contained within the site in comparison to the wider area, it is not considered that this site is of any local significance for invertebrates.

6.9.5 Impacts on the species are considered likely to be negligible; post development landscaping is likely to create greater habitat diversity in the area than already exists.

6.10 Reptiles

6.10.1 There are no records for reptiles within 2km of the site.

6.10.2 No indication of reptiles was recorded at the site.

6.10.3 The majority of the site has a very low value to reptiles being devoid of significant vegetation cover. There is little variation in topography at ground level across the site. Provision of different microhabitats and temperature variations is there limited. There are no areas of the core development area which would be particularly favourable to reptiles.

6.10.4 No specific mitigation for these species is considered necessary.

6.10.5 As a consequence, precautionary mitigation would be appropriate in respect of construction activities so as to ensure reasonable avoidance measures are taken to avoid the killing or injury of these species.

6.11 Other

6.11.1 The site may be crossed by species such as fox (*Vulpes vulpes*) and rabbit (*Oryctolagus cuniculus*) are known to occur locally.

6.11.2 The boundary hedgerows may provide suitable habitat for small mammals such as field vole (*Microtus agrestis*) and hedgehog (*Erinaceus europaeus*), but these areas are small and the sites value to small mammals is limited.

6.12 Statutory and Non-Statutory Sites

Direct Impacts:

6.12.1 There are no statutory or non-statutory sites which are connected to the site such that site development would directly affect the dispersal of species between them or directly impact upon their integrity.

6.12.2 The habitats on site do not represent or are linked to those found in any of the statutory or non-statutory sites locally.

Indirect Impacts:

6.12.3 Based on the current understanding of the site proposals, SSSI Impact Risk Zones may be a notable constraint depending on the finalised site plan and number of houses delivered. At this stage, the indicative site plan details the provision of 104 houses, which falls into one of the specified SSSI risk categories (residential developments of 100 or more units within an existing settlement/urban area). Cumberland Council may therefore seek consultation with Natural England given the River Ehen SSSI and SAC are located 350m south-east of the site.

7. MITIGATION/RECOMMENDATIONS

7.1 Compensatory planting and habitat enhancement

7.1.1 The roots of trees on the site and its boundaries should be adequately protected during work in accordance with industry standards. All trees should as far as possible be retained in the scheme.

7.1.2 The landscaping scheme should utilise plants which are native and wildlife friendly. In particular night flowering species would be beneficial to bats. Wildflower seed could be used to plant verges to enhance the ecological value of the site and continuity between the site and the wider area.

7.1.3 Hedgerows around the site should be retained or improved where possible. It is our understanding that Hedgerows 3 and 4 may need to be partially removed to facilitate siting of the properties. Any lengths of hedgerow to be removed to facilitate the development should be transplanted and/or replanted in order that there is no net negative impact on this BAP habitat due to development. The roots of hedgerow plants/trees should be adequately protected during development from compaction/ground disturbance.

7.1.4 The site could be enhanced using a package of additional planting. This could include provision of fruit and nut bearing trees such as Rowan (Sorbus aucuparia), Cherry (Prunus avium), Crab Apple (Malus sylvestris), Hazel (*Corylus avellana)* and Hawthorn *(Crataegus monogyna)* to the edges of the site. The planting of larger extra heavy-standard trees such as Silver Birch *(Betula pendula),* Sessile Oak (*Quercus petraea)* and Alder *(Alnus glutinosa)* would also be advisable. These measures would help link and layer retained habitats, provide valuable feeding opportunities for birds and complement the site's landscaping scheme

7.2 Amphibians

7.2.1 There is no requirement for specific mitigation for these species. There are currently no suitable breeding sites on or near the site. However, as a precautionary measure, in the unlikely event that any signs of any amphibian activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.2.2 Consider the use of SUDS on site to provide new aquatic habitat during development. Such areas would be best placed in public open space where connectivity to the site boundaries and wider area is improved.

7.2.3 Clean, inert materials such as waste hardcore derived from groundworks could be used to create new hibernacula, such as that shown in Figure 9 below.

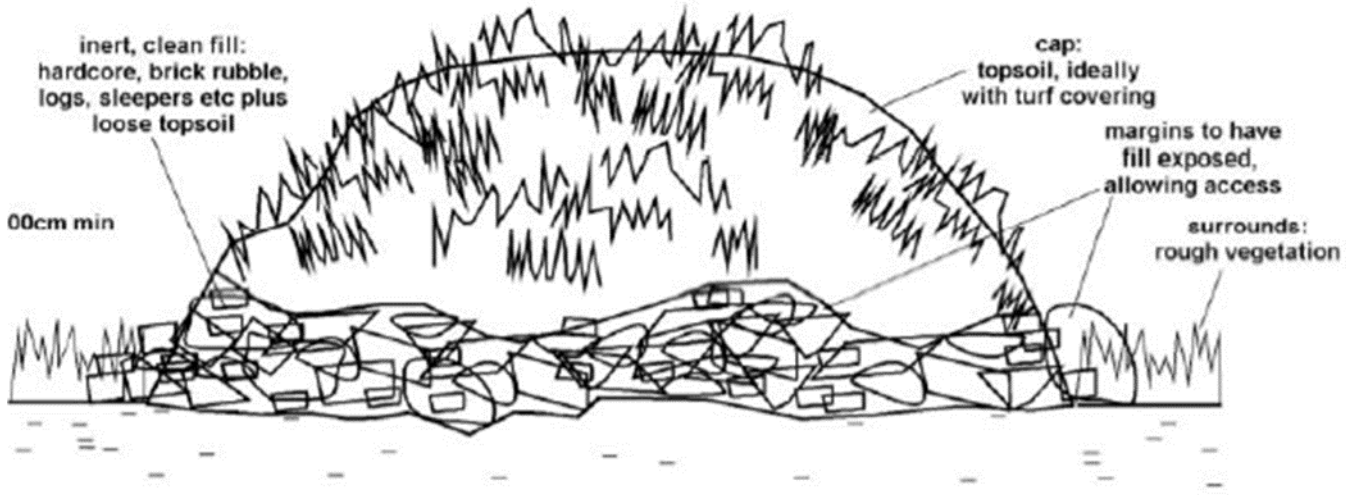

Figure 9- Suggested hibernaculum design

7.2.4 Where possible, piles of stone or loggeries could be stacked around the site, such as along the site edges of the northern and eastern boundary. This would provide suitable refugia for both amphibians and reptiles.

7.2.5 In order to further minimise impacts on amphibians the following points should also be followed.

- If Great crested newts are found onsite during construction works, all site works should cease and further ecological advice should be sought from a licensed ecologist.
- All work must take place during daylight hours as amphibians are more likely to be commuting overnight and this will ensure the risk to any amphibians commuting through the site will be minimised.
- Any tall grass or brush within the site should be hand-searched for sheltering great crested newts prior to construction works beginning.
- Vegetation clearance should be undertaken in a directional manner, moving towards suitable areas of retained habitat, with arisings either palletised or removed offsite.
- Vegetation clearance should be undertaken between February and October when temperatures are >5ºC. This is when amphibians and reptiles are active/mobile and therefore able to avoid injury. Vegetation clearance should be avoided over prolonged periods of hot dry weather when newt activity is reduced.
- No features offering shelter or refuge will be disturbed during the winter hibernation period when amphibians are likely to be overwintering and are most vulnerable to disturbance.
- Similarly, the creation of any piles of earth, materials and rubble which could form potential artificial hibernacula and refuge should be avoided at all times. It is recommended that any spoil or rubble will be removed immediately to skips, or on

hard standing or short grass. This will ensure that no potential amphibian hibernation or resting sites are created.

- The storage of all loose material (such as the piles of spoil adjacent the access road) must be palletised or similar so they are off the ground whenever possible. Otherwise, Great crested newts and other amphibians may hibernate within these piles- given their protection from frost and flooding.

- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure amphibians are not trapped during work.

- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

7.3 Badger

7.3.1 Badger setts are known to occur within 2km of the site. These setts will be undisturbed by work but in order to minimise impacts on badgers passing over the site the following points should also be followed.

- All work must take place during daylight hours as badgers are more likely to be commuting over the site at night and this will ensure the risk to any badgers passing through the site will be minimised.

- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure badgers are not trapped during work.

- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

- Boundary fences/walls should incorporate gaps at their base to facilitate the passage of badgers across the site.

7.4 Bats

7.4.1 Work at night should be restricted, new planting within the site should enhance structural diversity and light spill onto the boundary should be minimised.

7.4.2 Planting of native trees and shrubs will maintain the ecological functionality of the site for foraging bats. For example, any landscaping scheme should utilise plants which are native/naturalised and wildlife friendly, benefiting bats by attracting night flying insects to the site. Any introduced shrub habitat should contain species such as Cherry Evening primrose *(Oenothera biennis),* Honeysuckle *(Lonicera periclymenum)*,

Soapwort (*Sapnoria officinalis*) and Sweet rocket (*Hesperis matronalis*), providing bats with additional foraging opportunities.

7.4.3 A sensitive lighting scheme should be adopted on site, as the long-term impact of unnecessarily bright or recurrent artificial lighting on both bats and their prey is rarely ever positive. We recommend the following: -

- All artificial light should be downward facing and of a low intensity.
- Passive infrared sensors could be used on security lighting, which can then be activated for safety purposes only.
- Consider the use of LED luminaires, which shine with a lower intensity and higher dimming capability.
- Utilise shades of warm white, which appear more yellow/orange in appearance, over cold white light. Cold white light contains a greater degree of blue light, which attracts insects that cannot be preyed upon by bats, which are hypersensitive to these wavelengths of light.

7.4.4 New roosting provision for crevice dwelling bats could be discretely incorporated onto the site. This could include the provision of bat friendly roost features such as integrated bat boxes, bat bricks, bat tubes and access tiles.

7.4.5 Overall, it is considered there is more than sufficient scope for mitigation and compensation at the site such that there will be no adverse impact on the favourable conservation status of bats affected by the proposal.

7.5 Birds

7.5.1 Nesting by birds within the development area is considered unlikely to occur. Birds may nest within hedges and trees on the periphery of the site.

7.5.2 Any vegetation to be trimmed or cleared should be checked for nesting birds before it is removed. Ideally this should occur outside the bird nesting period March- September. If vegetation clearance is to occur in the March-September period a check for nesting birds should be conducted first by a suitably qualified individual.

7.5.3 New planting within the site and the retention of trees and shrubs on the site boundary will maintain the ecological functionality of the site for breeding birds.

7.5.4 Provision of artificial swallow cups beneath the eaves, swift boxes at gable ends and erection of sparrow terraces on external wall faces would improve the overall nesting potential of the site.

7.5.5 If nesting birds are found at the site all site works shall cease and further ecological advice shall be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6 Brown Hares

7.6.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any brown hare activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for badgers are also applicable to this species.

7.7 Invertebrates

7.7.1 Landscaping should include native or wildlife friendly species including night flowering plants.

7.7.2 Should any of the grassland be enhanced, then a native meadow seed mix containing at least 20% herbaceous flowering plants should be sued.

7.7.3 Loggeries and brash piles could be created along the peripheries of the site. Any cleared deadwood should be left on site.

7.7.4 Introduced shrubs/beds of low-level planters could include semi-evergreen perennial flowers such as lavender and Mexican aster.

7.8 Reptiles

7.8.1 As discussed in section 7.2, a sensitive vegetation clearance plan should be undertaken on site. New refugia and hibernacula could also be created on site.

7.8.2 Should any signs of any reptile activity are subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.8.3 The points in respect of not leaving open trenches without means of escape detailed for badgers are also applicable to these species.

8 REFERENCES

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9 APPENDIX

Feature / Hedge	Length 20m +	Hedge is not bounding the curtilage of dwelling	Hedge established more than 30years	Hedge boundary of protected or common land or land used for agriculture or forestry	ARCHAEOLOGY AND HISTORY	Archaeological feature which is included in the schedule of monuments	Situated wholly or partly within an archaeological site	Boundary of a pre-1600 AD estate	Integral part of a field system	Protected species records	FEATURES	Bank or wall	Gaps less than 10%	Standard trees	Ditch	Parallel hedge	Footpath/ Bridleway	Connection points	Woody species	Average ground flora species	HEDGE CLASSIFIED AS IMPORTANT
1	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	No	No	No	No	No	2	2	0	**No**
2	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	No	No	No	No	1	2	0	**No**
3	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	No	No	No	No	No	2	5	0	**No**
4	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	No	No	No	No	No	1	2	0	**No**
	No = Automatic failure					Yes = Automatic pass						7 woody species or 6 woody species + 3 features or 5 woody species + 4 features or highway + 4 woody species and 2 features									

* Historic and archaeological records have not been checked for this site.