



Ecological Appraisal Report:
Land adjacent at Heolgerrig,
Merthyr,
CF48 1RL

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Summary

I & G Ecological Consulting were commissioned to undertake a preliminary ecological appraisal of two adjacent parcels of land, approximately 2.53 hectares in combined area, at Heolgerrig, Merthyr (Figure 1) to assist with an ongoing planning application in relation to the construction of a stable block and grazing land on a former coal tip.

A Preliminary Ecological Appraisal was undertaken, following the CIEEM Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). The habitats present within the wider survey area include broadleaved semi-natural woodland, mixed plantation woodland, dense scrub, scattered scrub, marshy grassland, standing water, running water and bare ground and ephemeral / short perennial. Boundary features consist of fencing. The site contains potentially suitable habitat for mammals (including badger), birds, bats, reptiles and amphibians.



Figure 1. Location of site, Grid Ref: SO 02561 05368

1. INTRODUCTION

I & G Ecological Consulting were commissioned to undertake a preliminary ecological appraisal of an area of land at Heolgerrig, Merthyr (Figure 1) to assist with an ongoing planning application. This piece of land will hereafter be referred to as 'the site'.

This report presents the findings of both a desk study and site appraisal undertaken in March 2023. The report aims to identify the habitats present on-site, as well as assess their suitability for protected species. The findings of the site appraisal will be used to assess the need for further protected species surveys on-site in order to establish an ecological baseline, with recommendations in relation to further surveys and design options provided.

2. METHODOLOGY

Both a desk-based survey and an ecological site survey were undertaken to establish the ecological conditions on-site. A field botanical survey was carried out using survey methods that were based on standard Phase 1 Habitat survey techniques. The CIEEM Guidelines for Preliminary Ecological Appraisal were also followed and adhered to (CIEEM, 2017).

2.1 Badgers

- 2.1.1 The surrounding habitat was assessed for its suitability for badgers which includes the presence of setts, well-worn paths and runs, snagged hair, latrines, footprints and foraging. Any such incidental signs of badgers were recorded if they were encountered.

2.2 Otters

- 2.2.1 The surrounding habitat was assessed for its suitability to support otters. The area was searched for otter field signs such as spraint marking, slides, hovers or footprints.

2.3 Dormouse

- 2.3.1 The habitats on-site, particularly the hedgerows were assessed for their suitability to support dormice.

2.4 Birds

- 2.4.1 The habitats on-site were assessed for their suitability for breeding birds, including trees, scrub and grassland.

2.5 Bats

- 2.5.1 Habitats on-site were assessed for their suitability to support bats, particularly any trees on-site that could have bat roosting potential or opportunities.

2.6 Reptiles

- 2.6.1 The habitats on-site were assessed for their suitability to support reptiles.

2.7 Amphibians

- 2.7.1 The habitats on-site were assessed for their suitability to support amphibians.

2.8 Water Voles

- 2.8.1 The surrounding habitats on-site were assessed for their suitability to support water voles.

2.9 Marsh Fritillary

- 2.9.1 The surrounding habitats on-site were assessed for their suitability to support marsh fritillary butterfly and their food plan, Devil's bit scabious (*Succisa pratensis*).

2.10 Non-Native Invasive Species

- 2.10.1 Any pernicious weeds under Schedule 9, Section 14 of the Wildlife and Countryside Act 1981 (as amended) were also noted and mapped during the site survey. These species include Japanese Knotweed (*Fallopia japonica*) and Himalayan Balsam (*Impatiens glandulifera*).

3. RESULTS

3.1 Desk study

3.1.1 A data search was requested from the Local Environmental Records Centre (LERC) Wales for the planning application site and surrounding area, of up to 2km. The species information was returned to I&G Ecology on the 29th of March 2023. A number of protected and notable species records were returned within 2km of the centre of the site. All records will not be listed here, however the most significant, those which are considered to potentially be affected by the development of the site, will be briefly summarised. The full data are available upon request to those nominated on the request form, as some data may be classified as sensitive. The significant findings from the data search are summarised below as well as in Section. Magic Maps (<https://magic.defra.gov.uk/magicmap.aspx>) was used to perform a search for waterbodies within 0.25km of the site.

3.1.2 Birds

The data search returned 62 entries of birds which are listed on Schedule 1 of the Wildlife and Countryside Act (1981) within 2km of the site, including (organised by distance from site, nearest to furthest): fieldfare (*Turdus pilaris*), hen harrier (*Circus cyaneus*), redwing (*Turdus iliacus*), red kite (*Milvus milvus*), brambling (*Fringilla montifringilla*), crossbill (*Loxia curvirostra*), peregrine (*Falco peregrinus*), goshawk (*Accipiter gentilis*), barn owl (*Tyto alba*), merlin (*Falco columbarius*), and green sandpiper (*Tringa ochropus*).

The data search returned 201 entries of birds which are listed on Section 7 of Principal Importance under the Environment (Wales) Act 2016 within 2km of the site, comprising of (organised by distance from site, nearest to furthest): cuckoo (*Cuculus canorus*), bullfinch (*Pyrrhula pyrrhula*), house sparrow (*Passer domesticus*), song thrush (*Turdus philomelos*), lesser redpoll (*Acanthis cabaret*), kestrel (*Falco tinnunculus*), skylark (*Alauda arvensis*), dunnoek (*Prunella modularis*), linnet (*Linaria cannabina*), herring gull (*Larus argentatus*), tree pipit (*Anthus trivialis*), hen harrier (*Circus cyaneus*), reed bunting (*Emberiza schoeniclus*), grasshopper warbler (*Locustella naevia*), ring ouzel (*Turdus torquatus*), nightjar (*Caprimulgus europaeus*), spotted flycatcher (*Muscicapa striata*), wood warbler (*Phylloscopus sibilatrix*), lapwing (*Vanellus vanellus*), willow tit (*Poecile montanus*), and marsh tit (*Poecile palustris*).

3.1.3 Bat

The data search returned 12 entries of bats within 2km of the site, including (organised by distance from site, nearest to furthest): common pipistrelle (*Pipistrellus pipistrellus*), unidentified pipistrelle species (*Pipistrellus sp.*), unidentified myotis species (*Myotis sp.*), brown long-eared bat (*Plecotus auritus*), and noctule (*Nyctalus noctula*).

3.1.4 Mammals

The data search returned 21 entries of terrestrial mammals which are categorised as priority species within 2km of the site, including (organised by distance from site, nearest to furthest): European water vole (*Arvicola amphibius*), Eurasian badger (*Meles meles*), harvest mouse (*Micromys minutus*), brown hare (*Lepus europaeus*), polecat (*Mustela putorius*), weasel (*Mustela nivalis*), West European hedgehog (*Erinaceus europaeus*), stoat (*Mustela erminea*), and Eurasian otter (*Lutra lutra*).

3.1.5 Invertebrates

The data search returned 198 entries of invertebrates which are listed on Section 7 of Principal Importance under the Environment (Wales) Act 2016 within 2km of the site, including (organised by distance from site, nearest to furthest): small heath (*Coenonympha pamphilus*), hedge rustic (*Tholera cespitis*), neglected rustic (*Xestia castanea*), autumnal rustic (*Eugnorisma glareosa*), anomalous (*Anarta anomala*), marsh fritillary (*Euphydryas aurinia*), shoulder-striped wainscot (*Leucania comma*), dot moth (*Melanchra persicariae*), dusky brocade (*Apamea remissa*), knot grass (*Acronicta rumicis*), latticed heath (*Chiasmia clathrata*), buff ermine (*Spilosoma luteum*), broom moth (*Ceramica pisi*), dark brocade (*Mniotype satura*), white ermine (*Spilosoma lubricipeda*), small phoenix (*Ecliptopera silaceata*), small pearl-bordered fritillary (*Boloria selene*), dark-barred twin-spot carpet (*Xanthorhoe ferrugata*), small square-spot (*Diarsia rubi*), garden tiger (*Arctia caja*), double dart (*Graphiphora augur*), dingy skipper (*Erynnis tages*), brown-banded carder bee (*Bombus humilis*), grayling (*Hipparchia semele*), cinnabar (*Tyria jacobaeae*), small blue (*Cupido minimus*), sallow (*Xanthia icteritia*), and ear moth (*Amphipoea oculea*), green-brindled crescent (*Allophyas oxyacanthae*).

3.1.6 Plants

The data search returned 7 entries of plants which are listed on Schedule 8 of the Wildlife and Countryside Act (1981) within 2km of the site, with all records comprising of bluebell (*Hycacinthoides non-scripta*).

3.1.7 Reptiles

The data search returned 6 entries of reptiles which are categorised as priority species within 2km of the site, including (organised by distance from site, nearest to furthest): grass snake (*Natrix helvetica*) and common lizard (*Zootoca vivipara*).

3.1.8 Amphibians

The data search returned 78 entries of amphibians which are categorised as priority species within 2km of the site, including (organised by distance from site, nearest to furthest): great crested newt (*Triturus cristatus*), common frog (*Rana temporaria*), common toad (*Bufo bufo*) and palmate newt (*Lissotriton helveticus*).

3.1.9 Invasive Non-native species (INNS)

The data search returned 48 entries of INNS within 2km of the site, including (organised by distance from site, nearest to furthest): Eastern grey squirrel (*Sciurus carolinensis*), Japanese knotweed (*Fallopia japonica*), harlequin ladybird (*Harmonia axyridis*), Canada goose (*Branta canadensis*), heath star moss (*Campylopus introflexus*), snowberry (*Symphoricarpos albus*), monkeyflower (*Mimulus guttatus*), butterfly-bush (*Buddleja davidii*), Wilson's honeysuckle (*Lonicera nitida*), wall cotoneaster (*Cotoneaster horizontalis*), broad-leaved everlasting-pea (*Lathyrus latifolius*), hollyberry cotoneaster (*Cotoneaster bullatus*) and New Zealand willowherb (*Epilobium brunnescens*).

3.1.10 Statutory Designated Sites

There is a single statutory designated sites within 2km of the survey site.

Site of Special Scientific Interest:

- Cwm Glo a Glyndyrys (0.08km east)

3.1.11 Non-statutory Designated Sites

There are twelve non-statutory designated sites within 2km of the survey site.

Adopted SIN:

- Winchfawr West (0.01km west, the smaller land parcel is contained within)
- Cwm Glo (0.08km east)
- Gethin Forest (0.11km south)
- Blaencanaid (0.96km south)
- Winchfawr East and Clwydyfagwr (0.97km north)
- Rhydycar West (1.17km south east)
- Gellideg North Fields (1.7km north)
- Coed Meirig Pastures (1.75km north)
- Cwm Taf Fields and Cefn Coed Tip (1.76km north)
- Cwm Ffrwd (1.8km north)
- Cwm Taf Fechan (1.95km north-east)

Regionally Important Geodiversity Site:

- Nant Ffrwyd (1.99km north)

Five Ancient Semi-Natural Woodlands (ASNW), four Restored Ancient Woodland Sites (RAWS), three Plantation on Ancient Woodland Site (PAWS) and one Ancient Woodland Site of Unknown Category (AWSUC) are also found within 2km of the site. The nearest site is an area of ASNW located 0.69km north-east.

3.1.12 NRW Priority Areas

There are four NRW Priority Areas within 2km of the site, with the nearest being Heathland and Grassland found 0.06km north, with a further three Plantation Ancient Woodland Sites (PAWS) found within the search buffer.

3.1.13 Waterbodies and Rivers

A single waterbody was identified within 0.25km of the site using OS maps, to the south of the larger land parcel at grid reference: SO 02619 05274. A stream, Nant Cwm Glo flows west to east, along the southern boundary of the larger land parcel.



3.2 Site Appraisal

3.2.1 The site survey was undertaken on the 13th of March by a suitably qualified ecologist. Photos from this visit are included where appropriate.

Habitats present on-site include broadleaved semi-natural woodland, mixed plantation woodland, dense scrub, scattered scrub, marshy grassland, standing water, running water and bare ground and ephemeral / short perennial. Boundary features include fencing. The completed Phase One Habitat Map is presented in Section 10 and the red line boundary is shown below (Figure 2).



Figure 2. Aerial image of the site, with red line boundary

3.3 Limitations

The survey was undertaken within the second week of what is considered the optimum period for vegetation surveys (March – September inclusive), therefore many plant species are still not in flower, meaning that some species may not have been easily identifiable on the day of the survey.

3.4 Phase One Habitat Survey Results (Map in Section 10)

3.4.1 A1.1.1 Broadleaved Semi-Natural Woodland

A large parcel of woodland is found towards the centre of the larger parcel of land. Species composition consists of abundant goat willow (*Salix caprea*), hawthorn (*Crataegus monogyna*) and holly (*Ilex aquifolium*) found rarely (Figure 3). Ground flora consists of sparse

Yorkshire fog (*Holcus lanatus*) and soft rush (*Juncus effusus*), with the substrate consisting of exposed coal spoil and leaf detritus. European larch (*Larix decidua*) is found rarely. Similar woodland with the inclusion of several, larger, larch trees is located along the eastern border of the larger parcel of land (Figure 4).



Figure 3. Broadleaved semi-natural woodland in the centre of the site



Figure 4. Broadleaved semi-natural woodland along the eastern boundary of the site

3.4.2 A1.3.1 Mixed Semi-Natural Woodland

Mixed semi-natural woodland is found adjacent to the scrub (Figure 5), located immediately west of the gate, through which the larger land parcel is accessed. Here, bramble dominates (*Rubus fruticosus*) and goat willow is found in abundance. Common broom (*Cytisus scoparius*) is found frequently, whilst soft rush and European larch occur rarely in this habitat. Species composition is the same as the adjacent scrub, however with an increased frequency of mature tree species.



Figure 5. Mixed semi-natural woodland along northern boundary of the site

3.4.3 A1.3.2 Mixed Plantation Woodland

Mixed plantation woodland is found in the habitat that borders the western boundary of the larger parcel of land (Figure 6). Here, spruce (*Picea sp.*) and English oak (*Quercus robur*) are found frequently, with Scots pine (*Pinus sylvestris*) occurring occasionally. There is some evidence of linear planting, with plantation being particularly evident in the arrangement of the conifers.



Figure 6. Mixed plantation woodland

3.4.4 A2.1 Dense / Continuous Scrub

Pockets of dense scrub are found throughout the site. In the scrub immediately adjacent to the west of the access gate through which the larger land parcel is accessed (Figure 7), bramble dominates, and goat willow is found in abundance. Common broom is found frequently, whilst soft rush and immature European larch occur rarely in this habitat. An additional area of dense scrub is found adjacent to the central wooded area. Here, species composition is similar, with several mature larch and willow trees present.



Figure 7. Dense scrub along north-western border of site

3.4.5 A2.2 Scattered Scrub

Scattered scrub is found throughout the marshy grassland located in the southern region of the site, consisting of separate clumps of scattered hawthorn (*Crataegus monogyna*) and scattered bramble. To the north-east of the site, the scattered scrub consists of bramble, hawthorn, as well as immature oak and willow (Figure 8). Similar scrub is found in the smaller parcel of land (Figure 9).



Figure 8. Scattered scrub (hawthorn, oak and willow) to the north-east of the site.



Figure 9. Scattered scrub (hawthorn) in the smaller parcel of land

3.4.6 B5 Marshy Grassland

Marshy grasslands are found throughout the site (Figures 9-10). Grasses include Yorkshire fog and tufted hairgrass (*Deschampsia cespitosa*), occurring in abundance. Soft rush is found frequently throughout. Occurring occasionally are giant sedge (*Carex pendula*), glaucous sedge (*Carex flacca*) and meadowsweet (*Filipendula ulmaria*). The substrate is poorly drained and vegetation cover is patchy, with the coaly soils below exposed frequently.



Figure 10. Marshy grassland in larger land parcel.



Figure 11. Marshy grassland in south-western land parcel



3.4.7 G1 Standing Water

A small, ponded area is found adjacent to a rocky outcrop, near the northern boundary of the larger land parcel. Water drains into the ponded area from the grassland to the west, located at a higher elevation. Algae dominates the water itself, with round-leaved crowfoot (*Ranunculus omiophyllus*) occurring in abundance at the surface level. The waterbody is clear and likely experiences frequent inflow, with excess water diffusing into the surrounding grassland.



Figure 12. Ponded area

3.4.8 G2 Running Water

Running water flows from the higher elevations in the western portion of the larger land parcel. A relatively low volume drains into the ponded area (Section 3.4.7 above), whilst the majority flows to the north-east, along the boundary of the larger land parcel (Figure 13).



Figure 13. Water flowing to lower levels, along north-eastern boundary of larger land parcel

3.4.9 J1.3 Ephemeral / Short Perennial and Bare Ground Mosaic

An area of ephemeral / short perennial and bare ground mosaic habitat is located adjacent to the access gate for the larger land parcel (Figure 14). Various unidentified mosses are found in abundance, with broadleaved dock (*Rumex obtusifolius*) occurring frequently. Common ragwort (*Jacobaea vulgaris*), oxeye daisy (*Leucanthemum vulgare*), buddleia (*Buddleja davidii*), creeping buttercup (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*), giant sedge and stonecrop (*Sedum anglicum*) are all found occasionally in this habitat. Wooden material (Figure 15) and plastic sheeting (Figure 16) is stored in this area. Where the elevation starts to decline, to the south-west of this habitat, there is an earth embankment with added concrete and stone materials (Figure 17).



Figure 14. Ephemeral / short perennial and bare ground mosaic habitat



Figure 15. Debris pile consisting mainly of wooden material (TN2, Section 10)



Figure 16. Plastic sheeting (TN1, Section 10)



Figure 17. Concrete / stone enforced embankment (TN3, Section 10)

3.5 Boundary Features

3.5.1 J2.4 Fencing

Wire fencing separates the individual fields within each land parcel. The actual site boundaries also consist of such fencing.

3.6 Protected Species

3.6.1 Badgers

The scrub and woodland present within the site may provide suitable habitat for badger foraging and sett creation. The substrate itself seemed to be relatively loose due to the prevalence of coal spoil, which when coupled with the poor drainage in the area, may provide sub-optimal habitat for burrowing. No evidence of badger was found within the wider survey area. The nearest record of badger returned was 0.91km from the site.

3.6.2 Bats

No trees with potential roost features (PRF) were observed on site. An area of exposed rock near the ponded area was also assessed as having negative potential for roosting bats (Figure 14). The treelines within the site present suitable linear features for commuting bats, and bats may use the site to forage. The closest record of bat returned in the data search belonged to common pipistrelle, located 0.09km from the site.



Figure 18. Rocky outcrop

3.6.3 Otter

Nant Cwm Glo is found along the southern boundary of the larger land parcel. No evidence of otter was found within the site, and no suitable habitat for the creation of rest areas or holts were identified on the day of the survey. The closest record of otter returned 1.98km from the site.

3.6.4 Reptiles

The bare ground, scrub and grassland habitats, as well as the debris piles (Figures 15 - 17) within the site offer the structural complexity that reptiles require, as well as good habitat for invertebrates on which reptiles may forage. No evidence of reptile was found within the site. The closest record of reptile returned during the data search belonged to grass snake, found 0.82km from the site.

3.6.5 Amphibians

Standing water is found within the site, with frog spawn identified on the day of the survey, therefore breeding amphibians are present within the site. The grassland, scrub and woodland may offer suitable foraging habitat for terrestrial phase amphibians. The closest record belonging to an amphibian returned during the data search belonged to great crested newt, 0.28km from the site, therefore it is possible that great crested newt may be present within the survey area.

3.6.6 Hazel Dormouse

The mixed semi-natural woodland on site may offer suitable habitat for dormice however due to the site's elevation and relatively exposed nature, the habitat is sub-optimal at most. There are no records of hazel dormouse within 2km of the site.

3.6.7 Water Voles

There is no habitat considered suitable for water vole within the site. All areas of running water are shallow and surface level. There are no records of water vole within 2km of the site.

3.6.8 Birds

The woodland and scrub areas on-site and within the proposed development footprint offers suitable bird nesting habitat for numerous species, as well as foraging opportunities. However, no birds or their nests were observed within the wider survey area on the day of the survey. There are copious records of birds within 2km of the site.

3.6.9 Marsh Fritillary

Devil's-bit scabious, the marsh fritillary's food plant, was not recorded on site. However, the nearest record of marsh fritillary was 0.23km from site therefore they may use the site.

3.6.10 Invasive Non-native species (INNS)

Butterfly-bush (*Buddleia*) was identified on the day of the survey, in the area of bare ground and short perennial / ephemeral.

4. ECOLOGICAL ASSESSMENTS

The following values have been provided to assess the importance of an ecological feature value within a geographical context, as recommended within the CIEEM Guidelines for Ecological Impact Assessment (2016) and the CIEEM Guidelines for Ecological Report Writing (Dec. 2015). See Table 1 below:

Table 1. Ecological Value Assessments

Importance	Examples of features
International & European	European designated or proposed sites such as Ramsar Sites, Special Protection Areas, Special Areas of Conservation, World Heritage sites or Biosphere Reserves; or otherwise meeting criteria for European or International designation. Sites supporting populations of European important species. Species listed within the Annex's of The Conservation of Habitats & Species Regulations 2010
National	Nationally designated sites such as Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), areas of key habitats and species within the UK Biodiversity Action Plan. Sites supporting viable breeding populations of Red Data Book (RDB) species (excluding scarce species), or supplying critical elements of their habitat requirements. Species listed within the schedules of the Wildlife & Countryside Act 1981.
Regional	Sites containing viable areas of threatened habitats and species listed in a regional Biodiversity Action Plan, sites exceeding Site of Importance for Nature Conservation (SINC) criteria. Sites supporting viable populations of Nationally Scarce species or those included in the Regional Biodiversity Action Plan on account of their rarity, or supplying critical elements of their habitat requirements.
High Local	Sites meeting the criteria for a county, vice county or metropolitan area designation (such as SINC), which may include amenity and educational criteria in urban areas. Ancient semi-natural woodland. Designated Local Nature Reserves. Sites containing viable areas of any key habitat type or species identified in the Local Biodiversity Action Plan (LBAP). Sites supporting viable breeding populations of species known to be county/metropolitan rarities e.g., featuring in county 'red data book' or LBAP, or supplying critical elements of their habitat requirements.
Moderate Local	Undesignated sites or features considered appreciably to enrich the habitat resource within the context of the Borough or District, or included in the Borough or District LBAP. Amenity and educational functions will be recognised in urban areas. Sites with viable breeding populations of species listed as rare in the District or Borough LBAP or supplying critical elements of their habitat requirements.
Low Local	Undesignated sites or features considered appreciably enriching the habitat resource within the context of the Parish or neighbourhood.
Negligible	Low-grade and widespread habitats.

Table 2. Impact level Criteria

Severe	Permanent impacts
Major	Loss of feature and/or quality and integrity of feature; severe damage to key characteristics, features or elements.
Moderate	Loss of feature, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
Minor	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements
Neutral	No impacts

4.1 Planning Policy Background

4.1.1 The Environment Wales Act (EWA) Section 6 (Welsh Government, 2016) places a duty on public authorities to 'seek to maintain and enhance biodiversity' and seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty. Section 7 lists both Priority Species and Habitats of Principle Importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

4.1.2 Edition 11 of Planning Policy Wales (PPW 11) (Welsh Government, 2011) establishes the land use planning policy for Wales, as set forth by the Welsh Government. It provides a structure for the effective formulation of Local Planning Authorities' development plans, supported by twenty-one Technical Advice Notes (TANs) organized around different topics. Specifically, TAN 5 - Nature Conservation and Planning gives guidance on how the land use planning system should support the safeguarding and enhancement of biodiversity and geological conservation.

PPW 11 aims to maintain and establish areas where:

- The role of landscapes, historic environments, habitats, biodiversity, and the unique characteristics of coastal, rural, or urban environments in contributing to natural and distinctive places are recognised, appreciated, protected, and improved.
- Further fragmentation of habitats is avoided wherever possible, and green networks, corridors, and habitat connections within developed areas are protected and improved.
- The features and characteristics of sites designated for their landscape or nature conservation significance are fully evaluated and safeguarded, while the network of sites is acknowledged as the foundation for improving the resilience of ecosystems.
- The opportunity to enhance the resilience of ecosystems is seized in all areas by addressing issues such as building on floodplains, diffuse pollution, soil compaction

and sealing, ensuring the protection of peat resources, and improving coastal flood defense strategies in urban areas and coastal margins.

Paragraph 3.36 of PPW outlines the utilisation of the Sustainable Management of Natural Resources (SMNR) methodology by the planning system, with the following identified as its primary components:

- Improving the resilience of ecosystems and ecological networks
- Halting and reserving the loss of biodiversity
- Maintaining and enhancing green infrastructure based on seeking multiple ecosystem benefits.

4.2 Interpretation of Results

4.2.1 Woodland

The woodland within the site has the potential to provide breeding and foraging habitat for bats, birds, badger, small mammals and invertebrates. Terrestrial phase amphibians may commute throughout the site and bats may also use the linear treelines as flightlines when commuting throughout the site. The habitat value has been assessed as *low local*. Loss or damage to this habitat would be *minor* without mitigation.

4.2.2 Scrub

The scrub on site offers suitable habitat and foraging opportunities for a number of breeding birds, invertebrates, reptiles and small mammals. The habitat value has been assessed as *negligible*. Loss or damage to this habitat would be *minor*, without mitigation.

4.2.3 Grassland

The scrub on site offers suitable habitat and foraging opportunities for a number of breeding birds, invertebrates, reptiles and small mammals. Terrestrial phase amphibians may commute throughout the site. The habitat value has been assessed as *low local*. Loss or damage to this habitat would be *minor*, without mitigation.

4.2.4 Bare Ground

The bare ground on site offers suitable habitat and foraging opportunities for a number of invertebrates, reptiles, and small mammals. Terrestrial phase amphibians may commute throughout the site. The habitat value has been assessed as *negligible*. Loss or damage to this habitat would be *major*, without mitigation.

4.2.5 Standing Water

The ponded area on site offers suitable breeding habitat and foraging opportunities for amphibians. Although invertebrate density was observed to be relatively low on the day of the survey, the ponded area also offers suitable habitat for a variety of terrestrial and aquatic



invertebrates. Under the habitat suitability index (HSI), the waterbody was assessed as possessing good suitability to support populations of breeding great crested newt. The habitat value has been assessed as *moderate local*. Loss or damage to this habitat would be *minor*, without mitigation.

Table 3. Waterbody HSI Results

SI No	SI Description	SI Value	HIS Score	
1	Geographic location	0.5	< 0.50	Poor
2	Pond area	20	0.50 - 0.59	Below Average
3	Pond permanence	0.1	0.60 - 0.69	Average
4	Water quality	0.33	0.70 - 0.79	Good
5	Shade	1	> 0.80	Excellent
6	Water fowl effect	1		
7	Fish presence	1		
8	Pond Density	0.6		
9	Terrestrial habitat	1		
10	Macrophyte cover	0.4		
HSI Score		0.78		
Pond suitability (see below)		Good		

4.3 UK BAP Priority Habitats and Species

UK BAP priority habitats and species were those that were identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). As a result of devolution, conservation action is now focused at a country-level rather than a UK-level, and the UK BAP was succeeded by the UK Post-2010 Biodiversity Framework in July 2012. The UK list of priority species, however, remains an important reference source and has been used to help draw up statutory lists of priority species and habitats in the four countries of the UK.

The field survey identified the on-site habitats as having the potential to support the following groups which are also listed under UK BAP: bats, birds, small mammals, terrestrial phase amphibians, reptiles and invertebrates.

During the field survey, no bird species associated with the on-site habitats, which are listed under the UK BAP, were recorded. The survey concluded that the site consisted of suitable habitat which could support a number of priority species.

4.4 Ecosystem Resilience

Area loss can cause populations of organisms to decline due to a decrease in habitat size. The wider survey area contains two Habitats of Principle Importance under Section 7 of the Environment Wales act (2016). Such woodland and hedgerows are relatively widespread, therefore if the proposed development site is cleared without any mitigation for development, the impact on ecosystem resilience is expected to be **negligible**.

5. CONCLUSIONS AND RECOMMENDATIONS

The combination of desk and field surveys undertaken at the proposed development site identified that the site has a ***moderate local*** ecological value. Habitat within the proposed development site is relatively widespread throughout the wider landscape.

Recommendations necessary for the informing of the design process are provided below, as well as brief recommendations for biodiversity enhancement in order to fulfil the Biodiversity and Resilience of the Ecosystems Duty (Section 6 Duty) and PPW 11. Please refer to the accompanying Biodiversity Enhancement Plan document for full recommendations. Where a species has been omitted, they are not considered a constraint to the proposed development.

5.1 Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty) / PPW 11

- 5.1.1 The Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty) applicable to Local Authorities. This duty filters through to all those participating in the Planning process.
- 5.1.2 Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.
- 5.1.3 It is therefore recommended, that in order to provide a net enhancement for the development new native planting should be incorporated into the development using species of local provenance.
- 5.1.4 In order to provide a net benefit for biodiversity it is recommended appropriate trees in the surrounding area, as well as the proposed development building, should incorporate artificial habitats such as bat bricks / boxes, bird boxes / bricks or Swift / swallow cups; the details of which should be agreed with the LA ecologist. Further recommendations are given on a case-by-case basis below.

5.2 Woodland

- 5.2.1 Should the removal of any trees be necessary to facilitate the planned development, it is recommended that the trees are replaced on a 'one for one' basis, with deciduous trees where suitable in the surrounding habitat. Any new wooded areas should be planted with five or more native tree and shrub species.
- 5.2.2 Suitable felled trees should be moved to the retained and created woodland habitats on-site and left in-situ as deadwood. Such habitat is beneficial to invertebrate communities within

the woodland, and therefore also beneficial to species which depend on invertebrates as a food source.

5.3 Scrub

- 5.3.1 Any loss of scrub should be mitigated for by suitable new planting, with trees and scrubs of local provenance. The aim should be to improve on the current species diversity present in the existing scrub. Landscaping should include berry bearing species such as guelder rose, rowan and purging / alder buckthorn.
- 5.3.2 To prevent excessive scrub invasion, encroachment needs to be controlled and this is best achieved before dense thickets are formed. The application of artificial fertilisers will reduce the plant species diversity of a site and encourage denser foliage to over-shadow the ground and should therefore be avoided.

5.4 Grassland / Bare Ground

- 5.4.1 Mitigation for loss of habitat may, in part, take the form of improved management for biodiversity on the remaining areas of land within ownership.
- 5.4.2 Where possible, the species composition of any retained or created grassland post-development should be enhanced, with the planting of species which complement the current grassland species composition in relation to its environment and potential.
- 5.4.3 Furthermore, subsequent management of the remaining on-site habitat should aim to achieve a good mosaic of sub-habitats, including areas of short turf, bare ground, long grass, and a limited amount of scrub.

5.5 Standing Water

- 5.5.1 There is potential for sediment run-off, cement washings and oil & fuel spills to contaminate the ponded area, directly impacting populations of amphibians.
- 5.5.2 Construction silt fences may be erected between the proposed development site and the ponded area to limit such occurrences.

5.6 Badger

- 5.6.1 The habitat in the site is suitable for foraging badger and parts may be suitable for sett creation, particularly in the broadleaved semi-natural woodland. It is recommended that a badger walkover survey be undertaken of the site within 4 weeks of the commencement of works on site. If any setts are discovered, they are likely to require further surveying.

5.6.2 General construction safeguards should be implemented during any development, which will also protect other species groups using the site, such as otter. These include:

- Any mammals should be protected from accessing construction materials through the use of spoil-proof fencing.
- Fencing off and covering of open excavations, in order to prevent animals becoming trapped or injured. Mammal ladders should be erected to allow any animals that may become trapped to leave the groundworks.
- Chemicals, such as fuels, should not be stored within 25m of waterbodies.
- If possible, access routes and machine should be chosen with the minimisation of sediment run-off as a priority.

5.7 Bats

5.7.1 If any artificial lighting is required during development, fixtures should be unidirectional as to avoid illuminating any potential bat roost sites in the adjacent wooded areas.

5.8 Birds

5.8.1 All nesting birds are protected under Section 1 of the Wildlife and Countryside Act of 1981. Therefore, vegetation clearance should be planned outside the nesting bird season. If works must commence any time between the 1st of March and the end of August, a nesting bird check will be undertaken on the site by a suitably experienced Ecologist. If an active bird nest is found, the nest area will be marked, and will be protected from disturbance or harm as advised by the Ecologist. Works will not commence in the identified area until an Ecologist can confirm the young have fledged and the nest is vacant. Further recommendations may be proposed following the results of these surveys.

5.9 Reptiles and Amphibians

5.9.1 The habitat within the site presents common species of reptile (slow-worm and common lizard) with foraging opportunities and suitable habitat, they also may commute through the site opportunistically.

5.9.2 Suitable breeding habitat for amphibians was identified, the ponded area, with frog spawn present on the day of the survey. A Reptile and Amphibian Mitigation Method Statement should be prepared in order to protect such reptiles and terrestrial phase amphibians during site vegetation clearance and construction. This Method Statement will detail the careful removal of the debris on site, which may be utilised as refugia by reptiles and amphibians. This will also likely to mitigate against the harm of small mammals during vegetation clearance.

5.9.3 If the waterbody assessed as having 'good' suitability to support populations of great crested newt (GCN) is likely to be significantly impacted by the proposed development, further

surveys to confirm the likely presence / absence of GCN may be required between mid-March and mid-June. These would involve four sessions of the following:

- Torchlight survey: This survey involves walking around the edge of the pond at night with a strong torch, scanning the water surface and vegetation for the presence of great crested newts.
- Egg search: This survey involves searching for great crested newt eggs during the breeding season (March to June). Eggs are laid on aquatic vegetation or other submerged objects in the pond.
- Trapping: This survey involves setting funnel traps at the edge of the pond to capture great crested newts. Trapping is usually done at night and requires a license.

5.10 Designated Sites

5.10.1 Gethin Forest Adopted SINC and Cwm Glo Adopted SINC are located immediately adjacent to the south-west of the larger land parcel. Both sites are designated for their mosaic of habitats, including 'Ffridd' upland fringe and woodland. Gethin Forest also supports breeding nightjar and goshawk, and there is a pond network which may be important for GCN, which have been recorded in the area.

5.10.2 Winchfawr West Adopted SINC is located to the east of the larger land parcel, with the smaller land parcel actually contained within the site boundary. Winchfawr West is designated as an Adopted SINC due to containing a mosaic of habitats, particularly ffridd, wet and dry heathlands and marshy grassland.

5.10.3 The smaller land parcel, the area of grazing land, is located within Winchfawr West Adopted SINC however it's use will not be changing, and no construction is to take place within this land parcel. Under the current design, it is not anticipated that any of these sites, located in close proximity, will be significantly impacted by the proposed works and therefore they will not be considered further.

6. LEGISLATION

6.1 Otters and the Law

- 6.1.1 The otter is a European Protected Species (EPS). It is against the law to damage or destroy an otter breeding site or resting place, or deliberately to capture, kill, injure or disturb an otter.
- 6.1.2 Otters are fully protected by the following pieces of legislation:
- The Conservation of Habitats and Species Regulations 2017 (regulation 42) fully protects otters, making it **an offence to:** -
 - *Intentionally or deliberately capture, injure or kill an Otter.*
 - *Damage or destroy a breeding or resting place of an Otter, or intentionally or recklessly damage or destroy any structure or place used for shelter or protection*
 - *Intentionally or recklessly disturb an Otter in a place used for shelter or protection, or deliberately disturb Otters in such a way as to be likely significantly to affect (i) the ability of any significant group of Otters to survive, breed, rear or nurture their young, or (ii) the local distribution or abundance.*
 - *Intentionally or recklessly obstruct access to a place used for shelter or protection.*
 - *Possess an Otter (alive or dead), or any part of an Otter*
 - Schedule 5 of the Wildlife and Countryside Act 1981 (as amended by the CROW [Countryside Rights of Way] Act 2000) fully protects otters, making it **an offence to:** -
 - *Intentionally or recklessly disturb any otter while it is occupying a structure or place which it uses for shelter or protection*
 - *Intentionally or recklessly obstructs access to any structure or place used by an otter for shelter or protection*
 - *Sell, offer or expose for sale any otter*
- 6.1.3 For any disturbance to occur a derogation or **EPS licence** must be gained from Natural Resources Wales. To gain an EPS Licence from Natural Resources Wales (NRW), NRW must be satisfied that;
- i. granting the licence would not be detrimental to the Favourable Conservation Status (fcs) of the populations of species concerned within its natural range.
 - ii. the derogation (licence) is in the public interest of Health and Safety or for other reasons of over-riding public interest, including those of a socio-economic nature or will have a benefit of primary importance to the environment.
 - iii. there is no satisfactory alternative to the derogation which would allow the described development to proceed but which would avoid or reduce the need for any adverse impact to the species.

6.1.4 Otters are also protected by;

- Natural Environment and Rural Communities Act 2006 and now the Environment (Wales) Act 2016.
- Annex II Habitats Directive (protection through Special Areas of Conservation)
- UK Biodiversity Action Plan Priority Species and Species of Principal Importance in Wales

6.2 Bats and the Law

6.2.1 Bats are protected by the following pieces of legislation:

- Schedule 5 and 6 of the Wildlife and Countryside Act 1981 (as amended by the CROW [Countryside Rights of Way] Act 2000)
- The Environmental Damage (Prevention & Remediation) Regulations 2009 – A protected species and its habitat is protected under this legislation as well as others.
- The Conservation of Habitats and Species Regulations 2017 (regulation 42) fully protects all bats and their roosts, making it **an offence to deliberately kill, injure or capture** (take) bats; *to deliberately disturb bats; damage or destroy bat roosts* or resting places (this is considered an “Absolute Offence” as damage and destruction may detrimentally effect the Continuous Ecological Functionality of that roost / resting place); possess or transport a bat or any part of a bat; sell (or offer for sale) or exchange bats or parts of bats.
- For any disturbance to occur a derogation or **EPS licence** must be gained from Natural Resources Wales. To gain an EPS Licence from Natural Resources Wales (NRW), NRW must be satisfied that;
 - i. the licence would not be detrimental to the Favourable Conservation Status (fcs) of the populations of species concerned within its natural range.
 - ii. the derogation (licence) is in the public interest of Health and Safety or for other reasons of over-riding public interest, including those of a socio-economic nature or will have a benefit of primary importance to the environment.
 - iii. there is no satisfactory alternative to the derogation which would allow the described development to proceed but which would avoid or reduce the need for any adverse impact to the species.

6.2.2 Bats are also protected by;

- Appendix III of the Bern Convention
- Appendix II of the Bonn Convention (including the Convention's Agreement on the conservation of Bats in Europe)
- Natural Environment and Rural Communities Act 2006 and now the Environment (Wales) Act 2016.
- All bats are listed in Annex IV of the EC Habitats Directive and the British species listed in Schedule 2 of the Habitats Regulations 1994 (as amended) and are therefore designated as *European Protected Species*. These *protected* species are afforded enhanced protection and more stringent licensing provisions than those protected by the Wildlife and Countryside Act (WACA) alone.



6.3 The Hazel Dormouse and the Law

6.3.1 The hazel dormouse is a European Protected Species (EPS). It is against the law to damage or destroy a dormouse breeding site or resting place (summer or hibernation nest), or deliberately to capture, kill, injure or disturb a dormouse.

6.3.2 Dormice are fully protected by the following pieces of legislation:

- The Conservation of Habitats and Species Regulations 2017 (regulation 42) fully protects dormice, making it **an offence to**: -
 - *Intentionally or deliberately capture, injure or kill a dormouse.*
 - *Damage or destroy a breeding or resting place of a dormouse, or intentionally or recklessly damage or destroy any structure or place used for shelter or protection*
 - *Intentionally or recklessly disturb a dormouse in a place used for shelter or protection, or deliberately disturb dormouse in such a way as to be likely significantly to affect (i) the ability to survive, breed, rear or nurture their young, and includes in the case of animals of a hibernating or migratory species, to hibernate or migrate or (ii) the local distribution or abundance.*
 - *Intentionally or recklessly obstruct access to a place used for shelter or protection.*
 - *Possess a dormouse (alive or dead), or any part of a dormouse*
- Schedule 5 of the Wildlife and Countryside Act 1981 (as amended by the CROW [Countryside Rights of Way] Act 2000) fully protects dormice, making it **an offence to**: -
 - *Intentionally or recklessly disturb any dormouse while it is occupying a structure or place which it uses for shelter or protection*
 - *Intentionally or recklessly obstructs access to any structure or place used by a dormouse for shelter or protection*
 - *Sell, offer or expose for sale any dormouse*

6.3.3 For any disturbance to occur a derogation or **EPS licence** must be gained from Natural Resources Wales. To gain an EPS Licence from Natural Resources Wales (NRW), NRW must be satisfied that;

- i. granting the licence would not be detrimental to the Favourable Conservation Status (fcs) of the populations of species concerned within its natural range.
- ii. the derogation (licence) is in the public interest of Health and Safety or for other reasons of over-riding public interest, including those of a socio-economic nature or will have a benefit of primary importance to the environment.
- iii. there is no satisfactory alternative to the derogation which would allow the described development to proceed but which would avoid or reduce the need for any adverse impact to the species.



6.3.4 Dormice are also protected by;

- Natural Environment and Rural Communities Act 2006 (England) and the Environment (Wales) Act 2016.
- Annex II Habitats Directive (protection through Special Areas of Conservation)
- UK Biodiversity Action Plan Priority Species and Species of Principal Importance in Wales

6.4 Reptiles and the Law

6.4.1 All of the UK native reptiles are protected by law. The common species of reptiles found in this locality are common lizard, slow-worm, adder and grass snake. It is illegal to intentionally kill or injure these species under Section 9 (1) of the Wildlife and Countryside Act 1981 (as amended).

6.4.2 All native UK reptiles are considered of 'principle importance' under Section 7 of the Environment (Wales) Act 2016. This places a duty on every public authority, in exercising its functions, to have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.

6.4.3 Under the National Planning Policy Framework (NPPF April 2012), the presence of any Protected Species (which includes all reptiles species) are a material planning consideration. The ODPM 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System, provide additional advice and support the NPPF.

6.5 Amphibians and the Law

6.5.1 All of the UK native amphibians are protected by law. The common species of amphibians in this locality are common frog, common toad, smooth newt and palmate newt. It is illegal to intentionally kill or injure these species under Section 9 (1) of the Wildlife and Countryside Act 1981 (as amended).

6.5.2 The common toad is considered of 'principle importance' under Section 7 of the Environment (Wales) Act 2016. This places a duty on every public authority, in exercising its functions, to have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.

6.5.3 Under the National Planning Policy Framework (NPPF April 2012), the presence of any Protected Species (which includes the Common Toad) are a material planning consideration. The ODPM 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System, provide additional advice and support the NPPF.

6.6 Birds and the Law

6.6.1 All species of bird are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). Protection was extended by the Countryside and Rights of Way (CROW) Act 2000. Under the above legislation it is an offence to intentionally:

- kill, injure or take any wild bird;

- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

6.6.2 Certain species are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and receive protection under Sections 1(4) and 1(5). The protection was extended by the Countryside and Rights of Way (CROW) Act 2000. There are special penalties where the offences listed above are committed for any Schedule 1 species and it is also an offence to intentionally or recklessly:

- disturb any such bird when it is building its nest or while it is in or near a nest containing dependant young; or
- disturb the dependant young of any such bird.

6.7 Badgers and the Law

6.7.1 The protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger, or interfere with a sett. In addition, they are listed on Schedule 6 of the Wildlife & Countryside Act 1981, which prohibits certain methods of killing and capture.

6.8 Water Voles and the Law

6.8.1 Water voles are listed under Schedule 5 of the Wildlife & Countryside Act 1981, receiving full protection since 2008. The Wildlife & Countryside Act 1981 (as amended), lists the following offences: -

- Intentionally kill, injure or take water voles (Section 9 (1)).
- Possess or control live or dead water voles or derivatives (Section 9 (2)).
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection (Section 9 (4) (a & c)).
- Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose (Section 9 (4) (b)).
- Sell water voles or offer or expose for sale or transport for sale (Section 9 (5)).
- Publish or cause to be published any advertisement which conveys the buying or selling of water voles (Section 9 (5)).

6.9 Environment Act (Wales) 2016

6.9.1 This act has replaced the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty. It came into force in May 2016.

6.9.2 Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In doing so, public authorities must also seek to 'promote the resilience of ecosystems'. Under Section 6, public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

6.9.3 Section 7 of the Act places a duty on public authorities to take steps to maintain and enhance biodiversity. This section replaces the duty in section 42 of the NERC Act 2006. The Section

Priority Species under this act is a list of the living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. The Section 7 Priority Habitats is a list of the habitats of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

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We confirm that in preparing this Report we have exercised reasonable skill and care, taking into account the project objectives, the agreed scope of the work and prevailing site conditions.

Advice in this report is based on the judgement of I&G Ecological Consulting and the interpretation of data gathered during the course of their survey on the property named in this document.

The findings and advice given during the course of this survey is provided by employees of I&G Ecological Consulting acting only on behalf of I&G Ecological Consulting.

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9. LERC Data Search

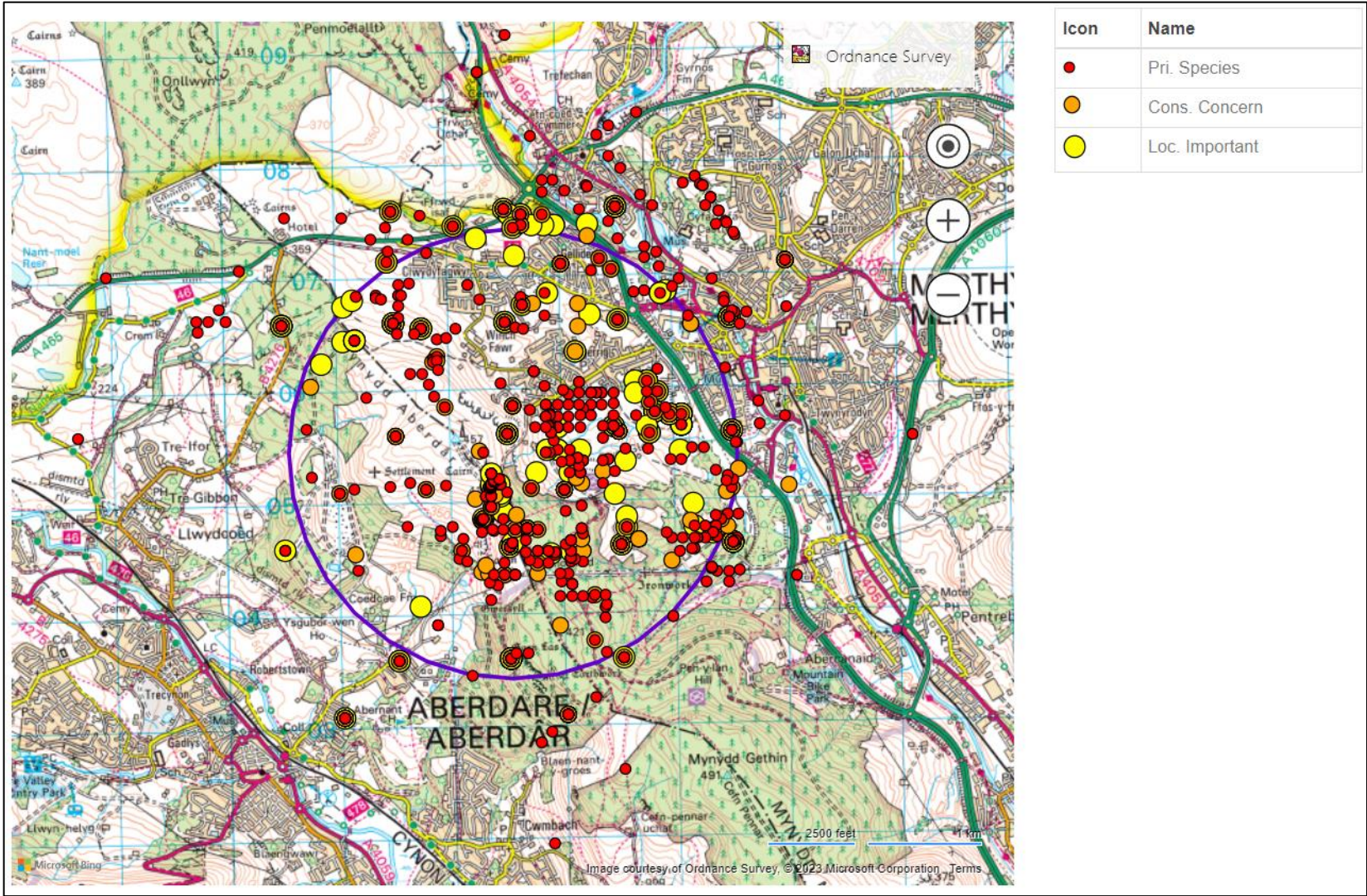


Figure 19. LERC Protected Species Data Search Records

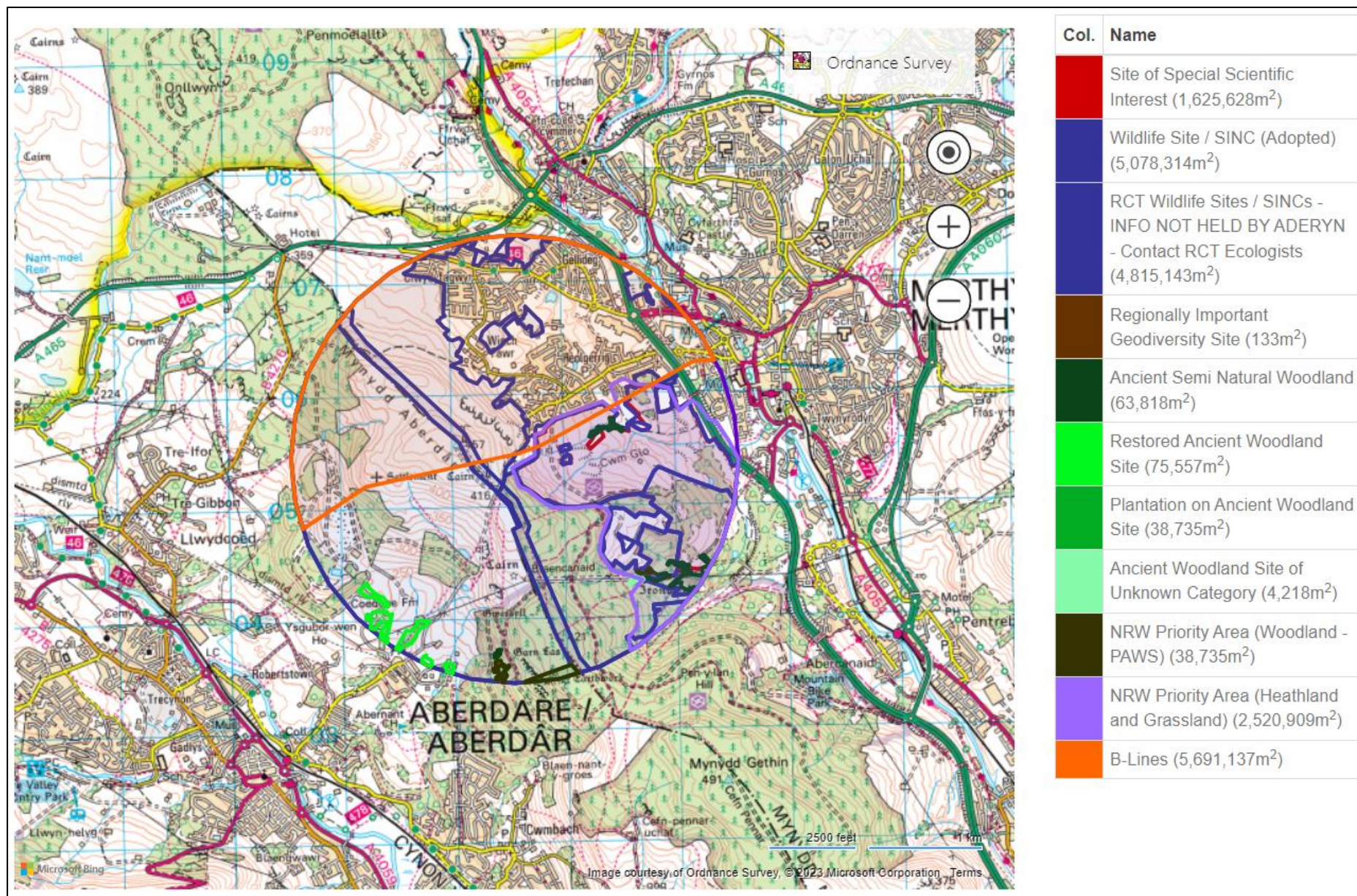
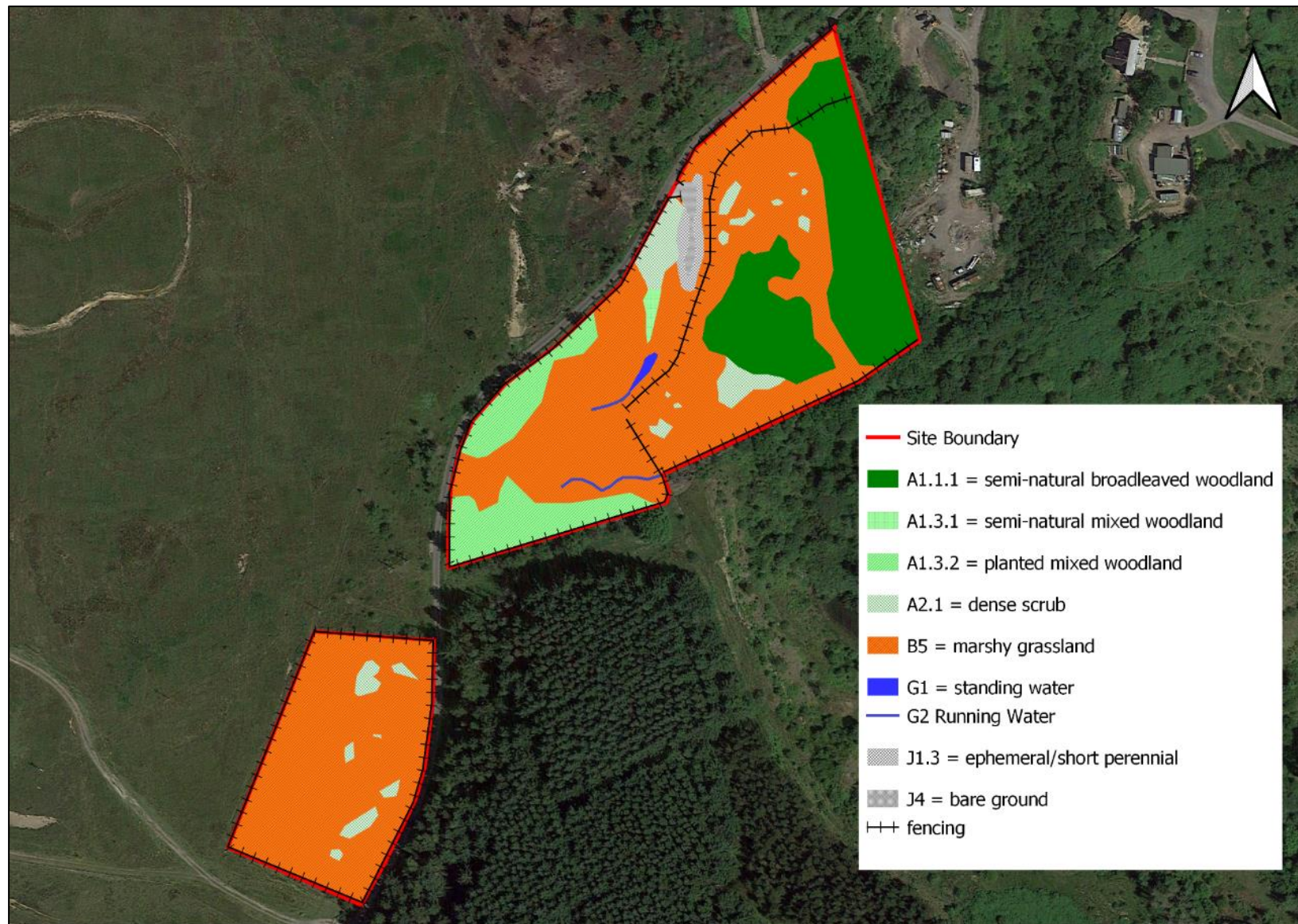
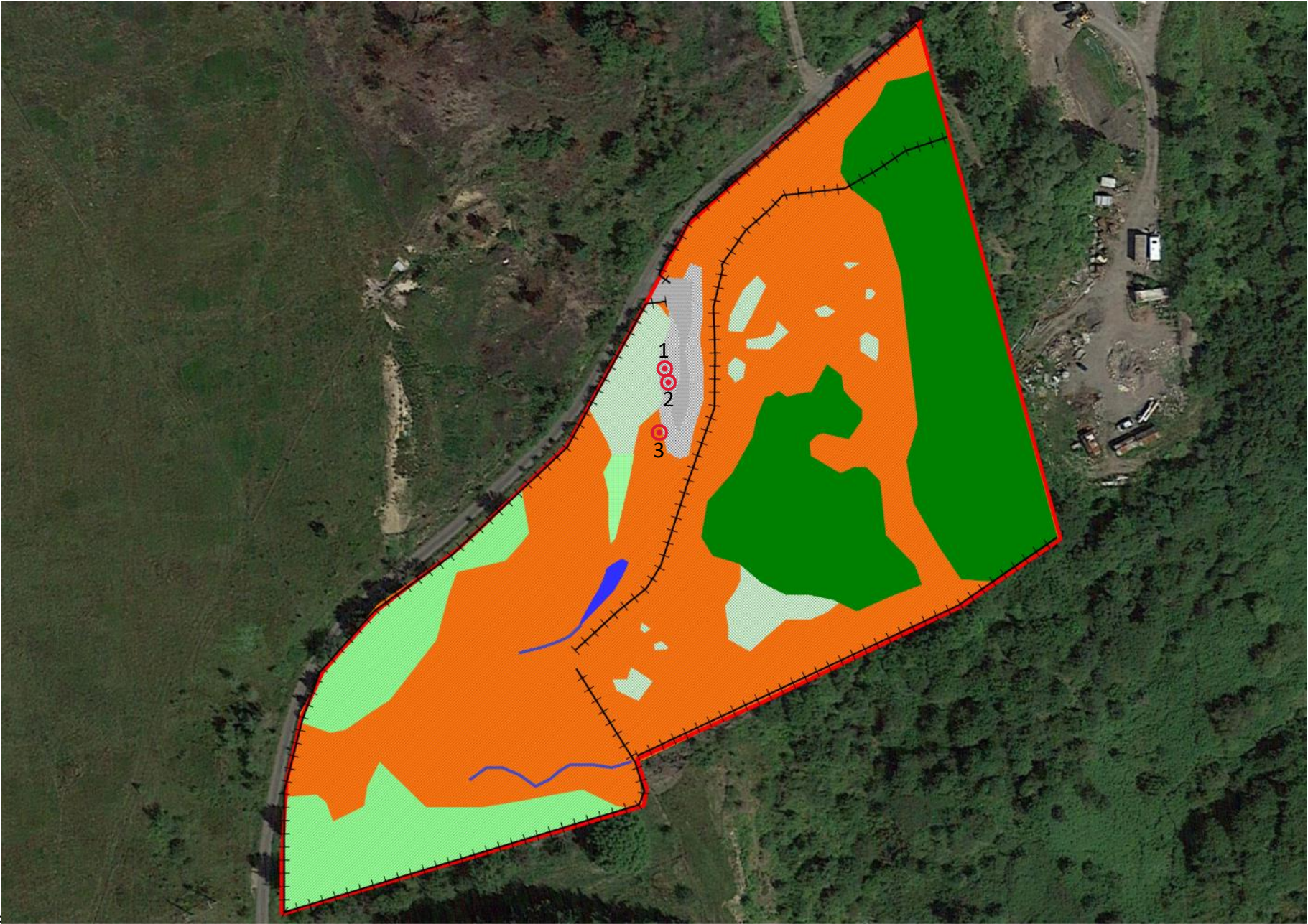


Figure 20. LERC Protected Sites Data Search

10. Phase One Habitat Plan





Target Notes

Target Note	Description
TN1	Plastic Sheetting
TN2	Wood and tin debris
TN3	Rubble embankment

