

**Whitcher Wildlife Ltd.
Ecological Consultants.**



**ROUGHBIRCHWORTH LODGE,
OXSPRING.**

OS REF: SE 26746 02048.

PRELIMINARY ECOLOGICAL APPRAISAL.

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1. INTRODUCTION.

1.1. There are plans to demolish the existing Roughbitchworth Lodge farm buildings and house and to develop the site into a small residential estate. A comprehensive ecological assessment of the site will be necessary in support of the planning consent to be submitted for the site.

1.2. Whitcher Wildlife Ltd carried out a Preliminary Ecological Appraisal of the site in November 2017. Additional bat activity and transect surveys were carried out in 2019.

1.3. Whitcher Wildlife Ltd has now been commissioned to carry out a Preliminary Ecological Appraisal of the site to update the findings of the previous PEA survey.

1.4. This survey was carried out on 21st March 2022, and this report outlines the findings of this survey with results from previous surveys and makes appropriate recommendations.

1.5. Appendices I to IV of this report provide additional information on specific species and are designed to assist the reader in understanding the contents of this report.

2. SURVEY METHODOLOGY.

2.1. Prior to visiting the site, the survey area was cross referenced to maps and aerial photographs to give a general idea of the habitats and potential issues within the area and to identify potential access and walking routes.

2.2. The survey area was walked where access was agreed and public rights of way were used where no access was agreed. All habitats within and immediately around the survey area were documented and the dominant species within that habitat listed in line with the JNCC Handbook for Phase 1 Habitat surveys.

2.3. The survey area and immediate surrounding area was thoroughly searched for evidence of badger (*Meles meles*) activity by looking for the following signs in line with Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*. Mammal Society: -

- * Badger setts.
- * Badger latrines or dung pits.
- * Badger snuffle holes and evidence of foraging.
- * Badger paths.
- * Badger prints in areas of soft mud.
- * Badger hairs caught on fencing.

2.4. The survey area was searched for watercourses and where found all watercourses within the survey area and for approximately 100m in each direction were thoroughly searched for evidence of water vole (*Arvicola amphibius*) activity by looking for the following signs, in line with Dean M, Strachen R, Gow D and Andres R (2016). *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds Fiona Mathews and Paul Chanin. The mammal Society, London: - (2011). *Water Vole Handbook: Third Edition*: -

- * Water vole burrows.
- * Water vole faeces and latrines.
- * Water vole feeding stations.
- * Water vole runs.
- * Water vole prints in areas of soft mud.
- * Water vole lawns.
- * Predator field signs.

2.5. The survey area was searched for watercourses and where found all watercourses within the survey area and for approximately 50m in each direction were thoroughly searched for evidence of otter (*Lutra lutra*) activity by looking for the following signs in line with the P Chanin (2003). *Monitoring the Otter and Conserving Natura 2000 Rivers: Monitoring Series No10 Guidelines*: -

- * Otter prints in soft mud.
- * Otter spraints.
- * Otter Holts.

2.6. The survey area was searched for watercourses and waterbodies. Where found, and where safe to enter the water, all were thoroughly searched for the presence of crayfish, for approximately 50m in each direction of the site, by searching under rocks and logs. Where stated, crayfish traps were also deployed into the watercourse. All survey work was carried out in accordance with the *Conserving Natural 2000 Rivers Monitoring Series No 1, Protocol for Monitoring the White Clawed Crayfish*.

2.7. The survey area was searched for trees and structures and where found these were checked for potential bat roosting sites in line with Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)* by looking for the following signs: -

- * Holes, cracks or crevices.
- * Bat Droppings.

2.8. The land immediately adjacent to the survey area was assessed for bat roosting potential and bat foraging potential. Connective routes and flight lines were also assessed whilst on site and using maps of the area.

2.9. The area within 500m of the survey site was cross referenced to maps to highlight all ponds close to the site. Where possible, all ponds identified were accessed using agreed access or public rights of way to assess the potential for great crested newts (*Triturus cristatus*) to be present.

2.10. The survey area was assessed for the potential for reptiles and suitable reptile habitats. Where applicable the area was also searched for the presence of reptiles.

2.11. Where appropriate, the habitat within and surrounding the survey area was searched for species such as hazel, oak, honeysuckle, bramble and other species which may provide potential habitat for hazel dormice (*Muscardinus avellanarius*). Field signs such as feeding remains and nests were also searched for where possible, in line with P Bright, P Morris and T Mitchell-Jones *The Dormouse Conservation Handbook 2nd Edition*.

2.12. Where appropriate, the area within and surrounding the survey area was assessed for its potential to house habitat for red squirrels. Field signs of red squirrels were searched for at least every 50m, looking for any dreys, feeding signs or sightings of red squirrels.

2.13. The survey area was searched for all alien invasive plant species as listed on Schedule 9 of the Wildlife and Countryside Act 1981. The location of all plants identified were recorded and listed within the survey report along with appropriate recommendations to avoid causing the plants to spread in the wild. All species were searched for, but the main species generally found under this category are Japanese knotweed, Giant hogweed, Himalayan balsam, Cotoneaster, Rhododendron and Japanese Rose.

2.14. All surveys were carried out in line with the Chartered Institute of Ecological and Environmental Management (CIEEM) survey standards and advice.

2.15. This document is prepared in line with The National Planning Policy Framework (NPPF). This sets out the government policy on biodiversity and nature conservation and places a duty on Planning Authorities to give material consideration to the effect of a development on legally protected species when considering planning applications. The NPPF and the Planning Practice Guidance on “Natural Environment” also promote sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within the development.

2.16. This report is prepared in line with the Natural Environment and Rural Communities (NERC) Act that came into force on 1st Oct 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England.

2.17. This survey was carried out by Jenny Witcher Roebuck MCIEEM. Since 2001 Jenny has had experience in a professional capacity as a Wildlife Consultant carrying out Ecology Surveys and Phase 1 Habitat surveys. Jenny holds Natural England Survey Licences in respect of bats, great crested newts, crayfish and barn owls, NRW and SNH Survey Licences in respect of bats and great crested newts. She has also successfully completed several courses run by the Chartered Institute of Ecology and Environmental Management (CIEEM), the Bat Conservation Trust (BCT) and the Field Studies Council (FSC) in the relative protected species, plant species and in carrying out Phase 1 Habitat Surveys. As a full member of CIEEM she is committed to continuous professional development, a continual process of learning and career development, a condition of CIEEM membership.

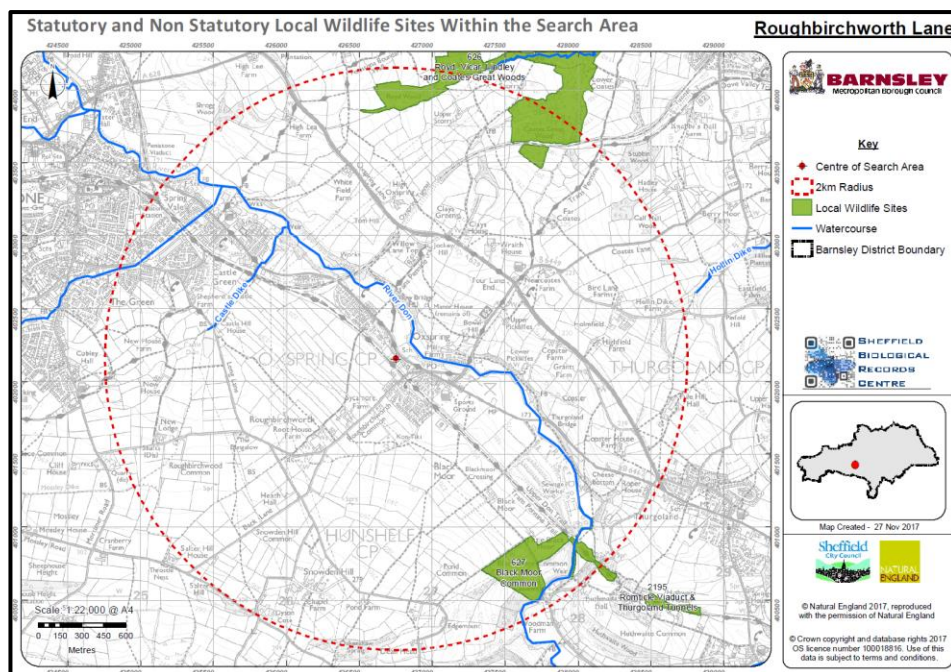
3. ECOLOGICAL BASELINE.

3.1. Data Search Results.

3.1.1. Barnsley Biological Records Results.

3.1.1.1. A data search request has been submitted to Barnsley Biological Records Centre for existing records of designated sites and protected species within 2km of the site.

3.1.1.2. There are no statutory designated sites within 2km of the site. There are two locally designated sites within the 2km radius search area. Black Moor Common LWS lies 1.39 km to the southeast and Royd Vicar Lindley and Coates Great Woods lies 1km to the northwest. Both sites are sufficiently distant from the site to be unaffected by the proposed development, as can be seen on the data search map below where Roughbirchworth Lodge is marked by the central red dot.



3.1.1.4. A full set of the data search results is available on request.

3.1.2. South Yorkshire Bat Group Records.

3.1.2.1. There are numerous records of bats in the surrounding area, but many are old records and many are not roost records, but records of bats seen flying or injured bats. The records show there to be the expected range of species in the surrounding area but that there are no roosts close to the site.

3.1.2.2. The full list of records provided by South Yorkshire Bat Group is provided in Appendix VII of this document.

3.1.3. South Yorkshire Badger Group Records.

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3.1.4. Other Sources of Information.

Barnsley MBC commissioned an ecological survey of the land adjacent to this site in 2015 in connection with Local plan decisions. A copy of that report has been provided and the contents of that report considered within this report.

3.2. The Surveyed Area.

3.2.1. Roughbitchworth Lodge site is shown marked with a red arrow on the aerial photograph below.



3.2.2. There are open arable fields and improved grassland fields grazed by cattle to the west of the site. To the southwest of the site there is a small number of residential properties with more to the south on the opposite side of Roughbitchworth Lane.

3.2.3. The Trans Pennine Trail runs along a cutting on the eastern side of the site with further residential areas beyond and beyond that, the B642 Sheffield Road before the ground slopes down to the River Don

3.3. Description of Habitats.

Appendix V of this report contains annotated maps marked up with the varying habitats that are cross referenced to target notes in Appendix VI of this report. The habitats on and adjacent to the site are: -

- Improved Grassland.
- Dense Scrub.
- Scattered Scrub.
- Scattered Trees.
- Tall Ruderal.
- Ephemeral/Short Perennial.
- Bare Ground.
- Species Poor Intact Hedgerow.
- Species Poor Defunct Hedgerow.
- Fence.
- Wall.
- Building.

3.3.1. *Improved Grassland.*



3.3.1.1. A previous Phase I Habitat survey undertaken of this land found this area to be tall ruderal herb. The PEA survey in 2017 found this area had been grazed short and represented improved grassland. During this survey the site is still assessed as improved grassland but has not been grazed for some time and is growing long with tall ruderal species present, including dock (*Rumex sp.*), nettle (*Urtica dioica*) and ribwort plantain (*Plantago lanceolata*).

3.3.1.2. The grass species present include Perennial ryegrass (*Lolium perenne*), false oat grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), common couch (*Elytrigia repens*), Yorkshire Fog (*Holcus lanatus*) and Timothy (*Phleum pratense*).

3.3.2. Dense Scrub.



3.3.2.1. There are a few areas of dense scrub on the site, the main area being what used to be the garden associated with the farmhouse on the site, and is target noted as T5 in Appendix V. This has been left unattended for some years now and has become overgrown with scrub and some tall herbs also. Bramble (*Rubus fruticosus*) is the dominant species in this area with some nettle (*Urtica dioica*), pendulous sedge (*Carex pendula*), ash saplings (*Fraxinus excelsior*), goat willow saplings (*Salix caprea*), elder (*Sambucus nigra*) and holly (*Ilex aquifolium*). There are also some ornamental species in this area including Laburnum (*Laburnum sp*), privet (*Ligustrum sp*), Bergenia (*Bergenia sp*), daffodil (*Narcissus pseudonarcissus*) and snowdrop (*Galanthus nivalis*).

3.3.2.2. Other areas of dense scrub across the site are mostly areas of bramble (*Rubus fruticosus*) and elder (*Sambucus nigra*).

3.3.3. Scattered Scrub.

There is scattered scrub across the site, mostly around the buildings. This is dominated by bramble (*Rubus fruticosus*) and elder (*Sambucus nigra*) as well as some tree saplings with cleavers (*Galium aparine*), herb Robert (*Geranium robertianum*) and possible Himalayan balsam (*Impatiens glandulifera* Royle) saplings.



3.3.4. Scattered Trees.



3.3.4.1. There are a number of scattered trees across the south-eastern half of the site. This includes a line of mature trees along either side of the driveway leading to the farm buildings, as well as many mature and semi mature self-seeded trees across the remainder of the site.

3.3.4.2. Sycamore (*Acer pseudoplatanus*) is the dominant tree species, along with ash (*Fraxinus excelsior*), beech (*Fagus sylvatica*), horse chestnut (*Aesculus*

hippocastanum), copper beech (*Fagus sylvatica purpurea*), goat willow (*Salix caprea*), apple (*Malus sp*) and weeping ash (*Fraxinus excelsior pendula*).

3.3.5. Bare Ground.

The driveway onto the site and the area at the front of the main house is a mix of tarmac, concrete and hardstanding driveway and parking area.



3.3.6. Tall Ruderal Herb.



There are two areas where the habitat has been assessed as tall ruderal herb as nettle (*Urtica dioica*) is dominant, although there is also sparse bramble (*Rubus fruticosus*), cleavers (*Galium aparine*) and cow parsley (*Anthriscus sylvestris*) present.

3.3.7. *Ephemeral/Short Perennial.*



This is a hard-standing courtyard in the middle of the old farm buildings that has been left unattended for a number of years. The hard standing has become covered with moss and there are tall herbs such as nettle (*Urtica dioica*), rosebay willowherb (*Chamerion angustifolium*), ivy (*Hedera helix*), elder (*Sambucus nigra*) and sapling goat willow (*Salix caprea*) growing around the edges and in the cracks of the concrete, along with some sparse bramble (*Rubus fruticosus*).

3.3.8. *Species Poor Intact Hedgerow.*



There is one species poor intact hedgerow along the south-eastern boundary of the site. This is a tall hedgerow that is cut back on one side as it is adjacent to a highway footpath. It comprises predominantly holly (*Ilex aquifolium*) with some hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*) and ornamental conifer.

3.3.9. Species Poor Defunct Hedgerow.



3.3.9.1. There are two species poor hedgerows around the edges of what was once the garden of the farmhouse. This includes one section of holly (*Ilex aquifolium*) hedgerow, which is shown on right in the photograph above, and a small length of privet (*Ligustrum sp*) hedgerow.

3.3.9.2. At the northern end of the site there is a hedgerow which is mainly hawthorn (*Crataegus monogyna*) with some holly (*Ilex aquifolium*) and elder (*Sambucus nigra*) between the end of the site and the adjacent field.



3.3.10. Buildings.

There are a number of buildings within the survey area, which are each shown and described separately in section 3.4. of this report.

3.3.11. Wall.



There is a dry-stone wall that extends along the south-western boundary of the site, as well as some short lengths of small stone walls in and around the site. There is also a high brick wall along the southwest site boundary.

3.3.12. Fence.



Fences form some of the boundaries around the improved grassland at the north west end of the site including post and wire and timber fences built using old pallets.

3.4. Description of Fauna.

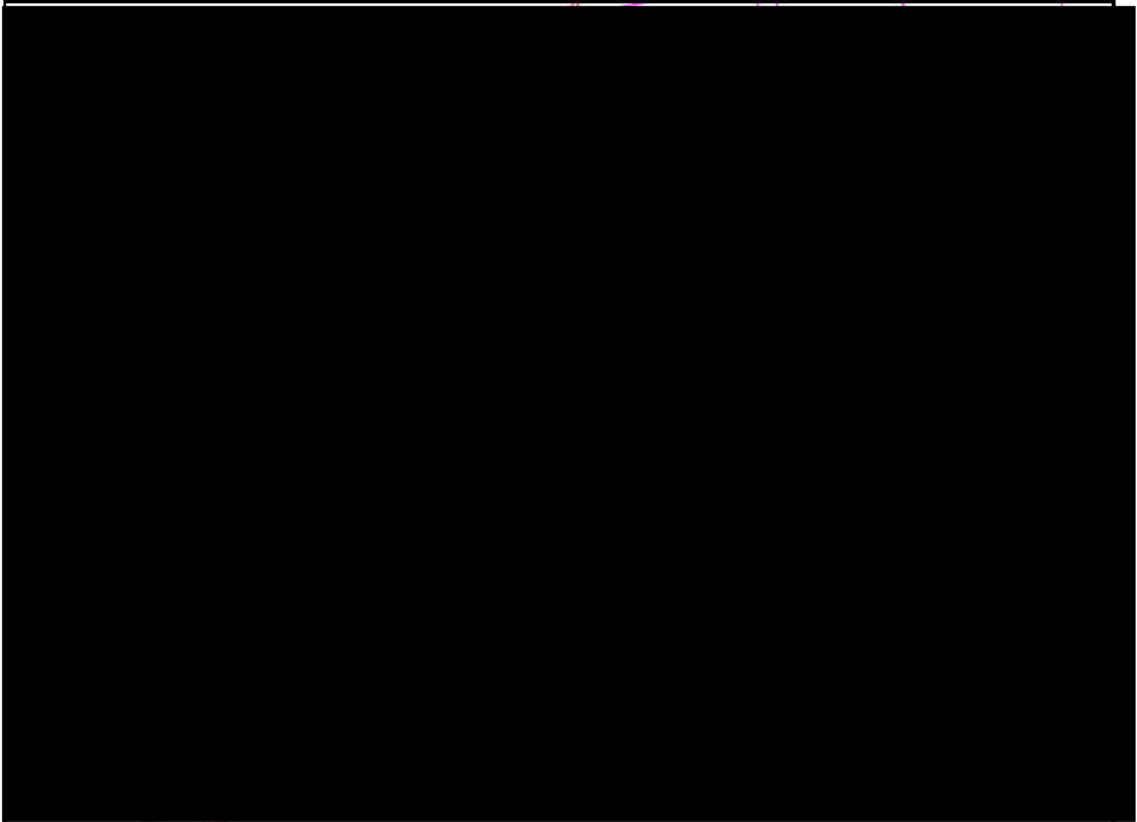
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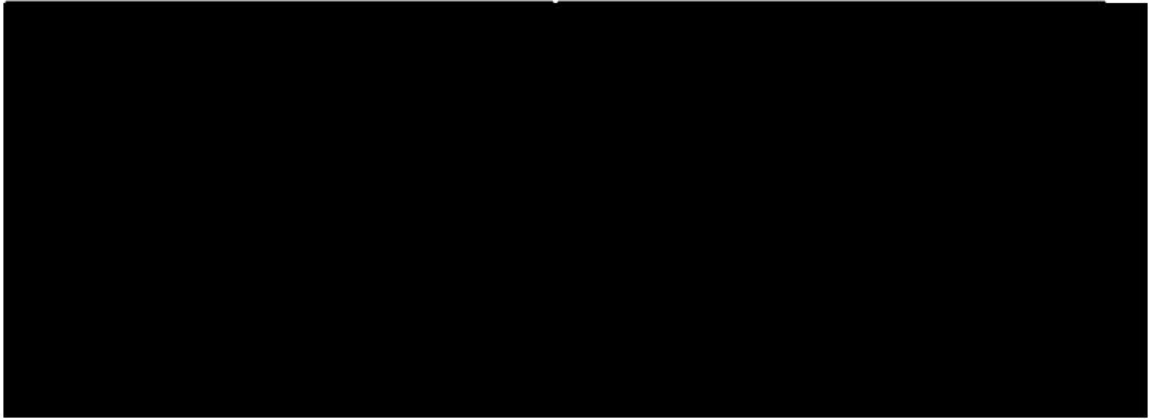
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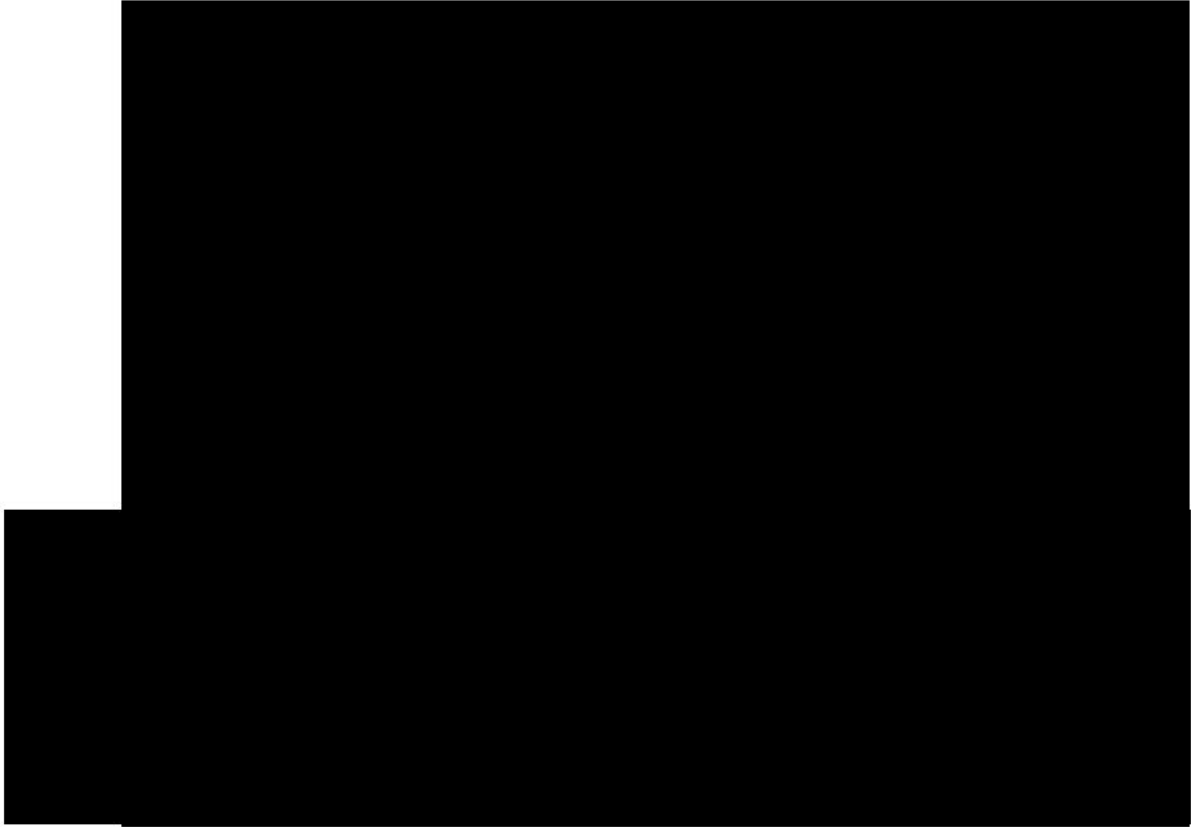
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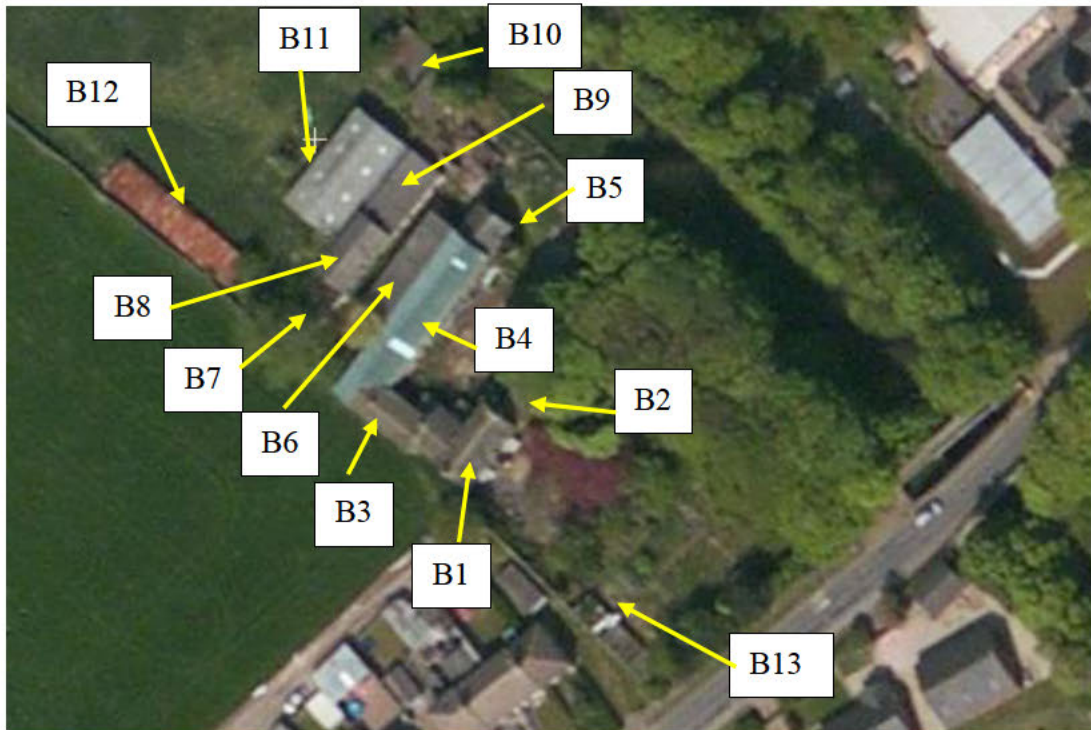


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3.4.3. A visual inspection and assessment were carried out on all of the farm buildings that may be affected by the proposed works. Each building has been given a label on the aerial photograph below and each building is reported against that reference number.



3.4.3.1. B1 - The Farmhouse.

3.4.3.1.1. The farmhouse is a two storey high stone “L” shaped building with stone covered pitched roofs. There is a small, single storey shed extension on the end of the building with the brick boundary wall beyond.



3.4.3.1.2. On the northwest side of the building there is the other leg of the “L”. This side of the farmhouse has rendered walls. The lean-to, single storey porch on the back of the building is derelict and the roof has collapsed in.



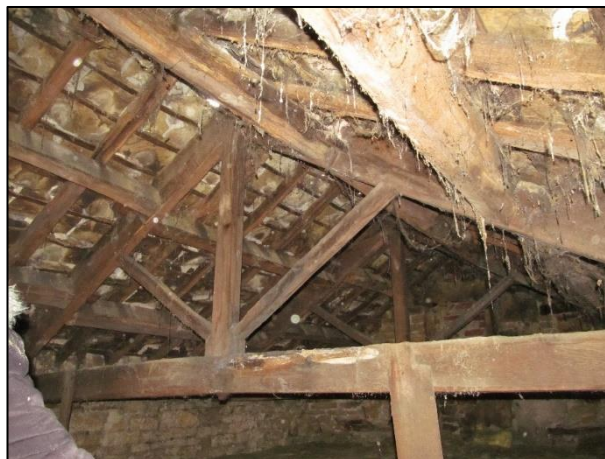
3.4.3.1.3. The pitched roofs of the building are supported on a heavy king post timber support frame covered with stone slates with no felt lining. There are gaps between the stone slates and there are gaps between the roof slates and the walls around the eaves.

3.4.3.1.4. The building has been vandalised and most of the windows and doors are missing or broken.

3.4.3.1.5. There is a cellar under the building with a stone floor and walls. The cellar is well sealed.



3.4.3.1.6. No bat field signs were found within the loft space and the entire area was covered in dense cobwebs. This building is assessed to have a **low** potential for roosting bats.



3.4.3.2. B2 - Farmhouse Extension and Log Shed.

3.4.3.2.1. On the north-eastern end of the house there is a separate stone building largely covered with dense ivy. From this side all that can be seen is a tall stone wall with a door in it. Inside this door there is a small, single storey, lean-to that is within a larger, lean-to, log shed.



3.4.3.2.2. Looking from the back side, this is a taller stone lean-to with a single sloping slate roof. There are three doors in the back wall, one leads to the main log shed with the lower building inside while the other doors lead into what appear to be small storage sheds or old toilets. There is also a further single storey, open shed on the end of this that is completely covered in dense ivy at the back.



3.4.3.2.3. The photograph below looks into the log shed and shows the low, lean-to building previously accessed from the other side of the building. The walls are all pointed and sealed and there is a felt lining under the roof slates. There are gaps between the tops of the walls and the slates that provide some opportunity for roosting bats, but no bat field signs were found. This building is assessed to have a **low** potential for roosting bats.



3.4.3.3. B3 - Farm Cottage

3.4.3.3.1. At the top end of the yard behind the main farmhouse there is a further stone-built farm cottage with a pitched roof covered with stone roof slates and with a small, lean-to building in front.



3.4.3.3.2. The external stone walls of the main building are well pointed and in good condition although there appear to be gaps around the eaves that bats could access. The lean to has been vandalised and part of the external stonework has been removed leaving gaps in what is left of the wall.

3.4.3.3.3. The building has been vandalised and most of the windows and doors are missing or broken.

3.4.3.3.4. This building is in poor condition with gaping holes in the roof which limited safe access inside. However, it could be seen that there is a loft space with large areas of the first floor ceiling missing showing that there is no lining under the tiles.

3.4.3.3.5. This building is assessed to have a **low** potential for roosting bats.

3.4.3.4. B4 – Farm Cottages.

3.4.3.4.1. Down the north-eastern side of this yard there is a long stone building. This will originally have been a combination of farm workers cottages with arched barn access between that will have been used for access by coaches and/or farm carts. These were all converted to farm workers cottages at some point in time



3.4.3.4.2. The stone of the walls is generally in good condition with no open joints or gaps. However, the window and door frames are rotten, and some are completely missing allowing access for bats and birds into the buildings.

3.4.3.4.3. At some point in the past, a corrugated tin roof has been built to cover the entire building. This is mainly in place with a missing section of corrugated sheet on the front of the building.



3.4.3.4.4. Some of the window and door frames on the back side of this building have been blocked with breeze block walls on the outside of the window and door frames.

3.4.3.4.5. Access inside these buildings was limited as they are full of accumulated junk and debris from fallen ceilings and it was not possible to access any of the loft spaces. However, the photograph below looks up from the ground floor of one of the buildings and shows the blue underside of the corrugated tin roof with the remains of a slate lathed ceiling also visible.



3.4.3.4.6. The southwest two cottages have a cellar and access was possible to the end cellar. The cellar is stone with a stone arched ceiling. There was a window at one end with small holes due to missing glass panes.



3.4.3.4.7. It was not possible to safely access this building to carry out a comprehensive survey. However, the building is in a poor condition and with the corrugated tin roof is assessed to have **low** potential for crevice dwelling bats only.

3.4.3.5. B5 – Small Cottage.

3.4.3.5.1. On the end of the long block of cottages there is another smaller cottage with stone walls and a pitched, slate covered roof.



3.4.3.5.2. The stonework of the walls is well pointed although on the front wall there is a crack and gaps in the pointing. There are gaps around the eaves of the building. However, this cottage was built after the adjacent block of cottages and the walls abut each other and this leaves gaps between the buildings.



3.4.3.5.3. The slates of the roof are generally all in place except around the eaves where there are missing and slipped slates.

3.4.3.5.4. Internally there is a small loft space, although it was unsafe to access the loft. The first floor ceiling was in poor condition with areas of plaster missing showing the lats behind the plaster board. However, it could not be seen if there was a lining under the roof slates.

3.4.3.5.5. This building is assessed to have a **moderate** potential for roosting bats.

3.4.3.6. B6 - Timber Lean-to Shelter.

3.4.3.6.1. Along the north-western side of B4 there is a timber lean-to shelter, as shown below.



3.4.3.6.2. This building provides no opportunities for roosting bats because the design is totally unsuitable.

3.4.3.7. B7 – Farm Building.

3.4.3.7.1. This building comprises two bays created by an existing stone wall on the north-western side and the southern side and adding a modern blockwork wall on the south and south-eastern sides and a single sloping roof covered with corrugated metal sheets.



3.4.3.7.2. It is within the end bay of this building that there was an animal hole in the floor with badger hairs and prints in the loose soil. It is not known whether this is part of the main sett, S1 or is a separate outlying sett, S2.



3.4.3.7.3. There are no holes in the walls of this building and the corrugated sheet roof is totally unsuitable for roosting bats.

3.4.3.7.4. This building is assessed to have no potential for roosting bats.

3.4.3.8. B8 – Farm Building.

3.4.3.8.1. This is a large stone building on the northern end of B7, with a pitched roof that has been replaced with corrugated sheets at some point in time.



3.4.3.8.2. Externally the stone walls appear to be in good condition although there are occasional voids that provide opportunities for bats to enter the external walls.

3.4.3.8.3. The building is open with doors and windows missing, providing access inside the building.



3.4.3.8.4. At the southern end, the building is open to the underside of the roof as shown above. At the northern end of the building there is an internal ceiling over the ground floor with a separated loft space upon accessible from the southern end room, as shown below.



3.4.3.8.5. No bats or bat field signs were identified inside or outside of the building, but the building was assessed to have **low** potential for roosting bats.

3.4.3.9. B9 Modern Farm Building.

3.4.3.9.1. B9 is a relatively new building on the northern end of B8 constructed with concrete and breeze block walls and with a single sloping roof covered with corrugated sheets.



3.4.3.9.2. This building is assessed as unsuitable for roosting bats and no bats or bat field signs were identified.

3.4.3.10. B10 - Pig Sties.

3.4.3.10.1. Two rows of single skin, brick, pig sties, completely open with no doors or windows and with a single sloping corrugated sheet roof.



3.4.3.10.2. Photograph showing the open nature of the inside of the pig sties. These buildings are totally unsuitable for roosting bats.



3.4.3.11. B11 – New Field Barn.

This is a modern Dutch style of barn. It has a metal frame with a corrugated sheet roof. The lower walls are block walls with timber panelling above. The building is totally unsuitable for roosting bats.



3.4.3.12. B12 – Field Shelter.

This is a series of derelict timber and corrugated sheet field shelters in the field at the western end of the site. The buildings are totally unsuitable for roosting bats but do contain Badger Sett S1 and provide opportunities for nesting birds.



3.4.3.13. B13 – Greenhouses.

This is a row of derelict greenhouses against the southern boundary wall in the front garden of the house. These are totally unsuitable for roosting bats but provide opportunities for nesting birds.



3.4.4. There are a number of large and mature trees in the eastern corner of the site around the drive to the farmhouse. There are various species including sycamore, beech, horse chestnut, copper beech and weeping ash. Some of these are covered with dense ivy and some provide home to a long-standing rookery.



3.4.4.1. Some of these trees contained bat roost potential like the weeping ash tree in front of the farmhouse, B1, shown in the photograph below. During the 2019 surveys all trees were inspected for roosting bat opportunities and those with potential that are to be felled were first subjected to a climbing inspection, see 3.5. below.



3.4.5. The vegetation around the eastern side of the site provides ideal bat foraging habitat, around the trees and woodland edges and along the sheltered Trans Pennine Trail corridor. The potential for foraging bats is therefore assessed to be moderate.

3.4.6. No ponds were identified on site or from study of Ordnance Survey maps of the area that would provide potential amphibians breeding habitat.

3.4.7. The vegetation on site and the buildings on the site are ideal habitat for nesting birds between March and September, during the nesting season.

3.4.7.1. Nests were found in Building 4 with one seen on a first floor window cill from outside. Another nest was found inside a ground floor room and this nest appears to be this year's.



3.4.7.2. Bird nests were found in Building 5 with two swallow cups on a beam in the first floor room.



3.4.7.3. Due to the unsafe nature of a number of the buildings many nests could have been missed as most buildings have potential for nesting birds. Abundant bird activity was identified across the site.

3.4.7.4. There is an old and long-standing rookery in the mature trees at the eastern side of the site. The majority of these trees will be retained.



3.4.7.5. It has been suggested that the field at the north western end of the site may be suitable winter-feeding habitat for Golden Plover. There are only seven records of golden plover in the data search results and all are on higher ground around 2km to the southwest of the site and dated 2013. This field is limited in size and has recently been used for grazing horses, which would deter plovers from feeding on the site. Additionally, there is an abundance of other suitable habitat in the surrounding area.

3.4.8. The site is unsuitable habitat for reptiles. While there are piles of stone and timber that could provide shelter, the site is overgrown and shaded at the eastern end.

3.4.9. There is no habitat present that would be suitable for hazel dormouse and the site is well outside the normal range of the species.

3.4.10. The site is unsuitable habitat for red squirrels and there are no known red squirrel populations within the surrounding area.

3.4.11. During this survey small seedlings were identified (**T7**) between B6 and B7 which are likely Himalayan Balsam. However, the seedlings are very small identification could not be definite.

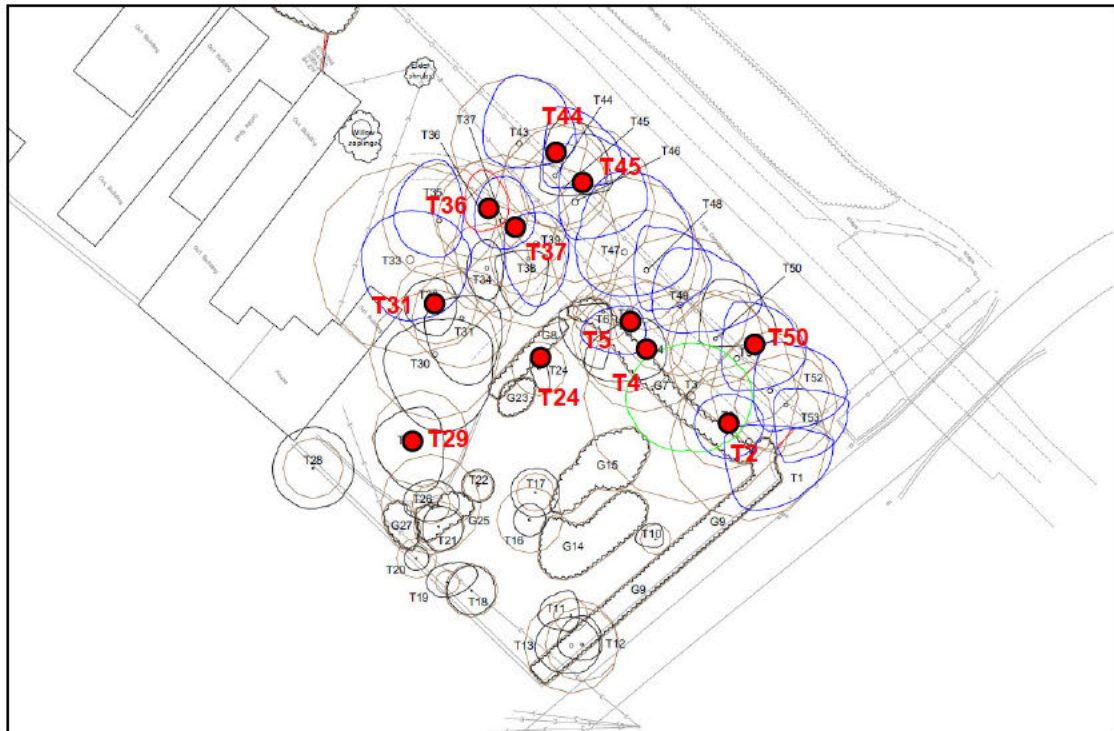


3.4.11.1. Himalayan balsam is a non-native, invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981, and it is an offence to cause the plants to spread into the wild. The plants are spread from seed fired from exploding seed pods between July and October. The seed can remain viable in the ground for up to two years.

3.5. Tree Climbing Survey Results, April 2019.

3.5.1. An aerial assessment of several of the trees on site was carried out by two licenced surveyors training in tree climbing on 15th April 2019. The survey covered twelve trees that had been previously identified to provide potential roosting opportunities for bats.

3.5.2. The plan below shows the locations of the trees covered by this survey. The references used for the trees are in line with the tree report prepared for the site.



3.5.3. T2 is a semi mature, horse chestnut, located towards the eastern corner of the site. The tree was assessed during this survey and no Potential Roost Features (PRF) were identified. The tree was therefore assessed as providing a negligible potential to support roosting bats.

3.5.4. T4 is a mature sycamore located on the access road to the east of the surveyed area. The tree was assessed during this survey and one PRF was identified.



3.5.4.1. PRF 1 was identified as a breakout on the small branch approximately 4m up the main trunk. The PRF was inspected, and no bats or other bat field signs were identified. Overall, the tree was identified to provide a low potential to support roosting bats.



3.5.4.2. The tree was identified to form part of a large rookery with active nests identified high in the canopy of the tree.

3.5.5. T5 is a mature beech tree located along the road to the east of the surveyed area immediately adjacent to T4. One PRF was identified around the tree during this survey.

3.5.5.1. PRF 1 was identified as a split branch and area of rot located 3-4m up the main trunk. The PRF was inspected, and not bats or other bat field signs were identified. Overall, the tree was assessed as providing a negligible potential to support roosting bats.

3.5.6. T24 is a semi mature laburnum located at the side of the access road. One PRF was identified around the tree during this survey.

3.5.6.1. PRF1 was identified as a rotten area in the top of the trunk, approximately 1.5m above the ground. The rotten area extended into the trunk with fresh nesting material in the bottom of the void, assessed as being an active wren nest.

3.5.6.2. Overall, the tree was assessed as providing a negligible potential for roosting bats.



3.5.7. T29 is a mature ash tree located in the centre of the existing driveway at the eastern end of the site. Three PRF were identified around the tree during this survey.



3.5.7.1. PRF1 was identified as a large knot holes located 3m up the main trunk of the tree. The void was approximately 300mm deep leading straight into the trunk of the tree. No bats or other bat field signs were identified within the PRF during this survey.



3.5.7.2. PRF2 was identified as a breakout in the top of the trunk. The void was identified to be approximately 200mm long, 50mm wide and 50mm deep. No bats or other bat field signs were identified within the PRF during this survey.



3.5.7.3. PRF3 was identified to be a large area of rot located 2.5m up the main trunk. The rot links two knot holes on either side of the tree creating a large void. No bats or other bat field signs were identified within the PRF during this survey.



3.5.7.4. Overall, the tree was assessed to provide a moderate potential to support roosting bats although no bat field signs were identified during this survey.

3.5.8. T31 is a semi mature sycamore tree located adjacent to the existing buildings at the eastern end of the site. A thorough climbing survey of the tree was not possible during this survey due to the dense ivy growing on the entirety of the tree.

3.5.9. T36 is a semi mature sycamore tree located adjacent to the access road at the eastern end of the site. One PRF was identified around the tree during this survey of the site.

3.5.9.1. PRF1 was identified as an extensive area of rot extending throughout the entire trunk of the tree. Openings were identified at ground level and at the top of the trunk although a thorough inspection of the void was not possible during this survey

due to the poor state of the tree limiting climbed access. Overall, the tree was identified as providing a moderate potential to support roosting bats.



3.5.10. T37 is a semi mature sycamore located adjacent to the access road to the east of the site next to T36. One PRF was identified around the tree during this survey.



3.5.10.1. PRF1 was identified as a knot/woodpecker hole located on a branch in the canopy of the tree. The PRF was approximately 75mm in diameter and extending 100mm into the branch with fresh tooth marks around the opening. No bats or bat field signs were identified within the PRF during this survey of the site.

3.5.10.2. Overall, the tree was assessed as providing a low potential to support roosting bats.

3.5.11. T44 is a semi mature sycamore tree located adjacent to the access track at the eastern end of the site. A thorough climbing survey of the tree was not possible during this survey due to the dense ivy growing on the entirety of the tree.

3.5.12. T45 is a semi mature sycamore tree located adjacent to the access track, next to T44, at the eastern end of the site. A thorough climbing survey of the tree was not possible during this survey due to the dense ivy growing on the entirety of the tree.

3.5.13. T50 is a semi mature sycamore tree located on the access track in the northeast corner of the site. One PRF was identified around the tree during this survey of the site.



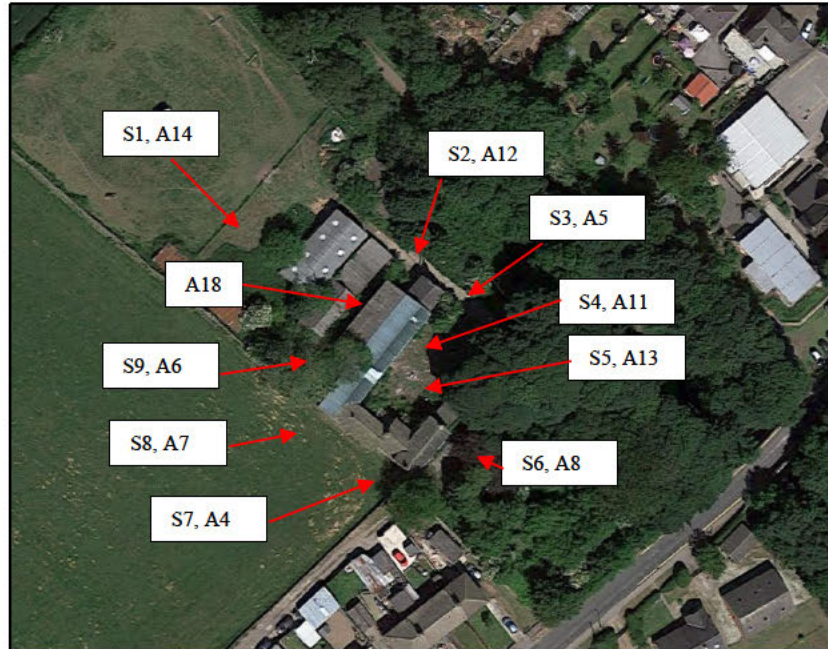
3.5.13.1. PRF1 was identified to be a broken branch located 4m up the trunk of the tree. The branch displayed no significant void, and no bats or bat field signs were identified. Overall, the tree was assessed to provide a negligible potential to support roosting bats.

3.6. Dusk Emergence Survey Results, May 2019.

3.6.1. A dusk emergence survey was carried out by nine surveyors on the evening of 22nd May 2019. Five of those surveyors hold current Natural England bat survey licences and four are experienced assistants.

3.6.2. The surveyors (S) were positioned around the buildings in order to view all aspects simultaneously. Each surveyor was equipped with a Batbox Duet detector and

a two-way radio for communication. Static Anabat recorders (A) were deployed to record bat activity for subsequent computer analysis using Analoook software. The aerial photograph below shows the locations of the surveyors and Anabat recorders.



3.6.3. The evening was mild with a temperature of 16°C at 21:00, an overcast sky and a light westerly wind gusting to 8mph. Sunset was at 21:11 and the survey commenced at 20:55 and finished at 22:45.

3.6.4. The following are the observations of the surveyors and the recordings on the Anabats with each surveyor.

3.6.4.1. Surveyor 1.

- 21:32. Common Pipistrelle briefly heard not seen.
- 21:33. Common Pipistrelle briefly heard not seen.
- 21:37. Common Pipistrelle briefly heard not seen.
- 21:39. Common Pipistrelle foraged between buildings NW of farm.
- 21:41. Common Pipistrelle foraging between buildings NW of farm, left to the NE until 21:44.
- 21:45. Common Pipistrelle returned, foraged until 22:11.
- 21:50. Two Common Pipistrelles foraging.
- 21:51. Three Common Pipistrelles foraging.
- 22:11 until 22:42. Intermittent Common Pipistrelles heard not seen.

Anabat 14 with Surveyor 1 recorded seventy Common Pipistrelle calls between 21:38 and 22:33.

3.6.4.2. Surveyor 2.

21:25. Common Pipistrelles heard foraging over disused railway

21:25 Multiple Common Pipistrelles foraging over trees, on and off site throughout the survey until 22:42.

21:37. Common Pipistrelle passed north to south.

21:40. Common Pipistrelle passed east to west.

21:44. Common Pipistrelle passed east to west and back.

21:44. Common Pipistrelle passed north to south.

Anabat 12 with Surveyor 2 recorded one hundred and four Common Pipistrelle calls between 21:35 and 22:41, one Noctule call at 21:38 and three Myotis calls between 22:17 and 22:42.

3.6.4.3. Surveyor 3.

21:26. Common Pipistrelle heard not seen from direction of disused railway.

21:30. Two Common Pipistrelles from the NE into main yard and foraged.

21:30. Multiple Common Pipistrelles foraging over trees and over the site until 22:42.

Anabat 5 with Surveyor 3 recorded one hundred and fifty-two Common Pipistrelle calls between 21:28 and 22:41 and three Myotis calls at 22:19, 22:27 and 22:29.

3.6.4.4. Surveyor 4.

21:28. Two Common Pipistrelles from NE and foraged in yard.

21:30. One Common Pipistrelle flew north, one still foraging.

21:33. Another Common Pipistrelle from NE to forage over yard.

21:34. Common Pipistrelle passed south to north over site.

21:36. Three Common Pipistrelle foraging from the trees to the SE.

21:36. Three Common Pipistrelles constantly foraging around the site.

21:53. Reduced level of Common Pipistrelle foraging continued until 22:42.

Anabat 11 with Surveyor 4 recorded one hundred and forty Common Pipistrelle calls between 21:28 and 22:41 and one Noctule call at 21:40.

3.6.4.5. Surveyor 5.

- 21:20. Common Pipistrelle heard not seen.
- 21:28. Two Common Pipistrelles from NE and foraged in yard.
- 21:30. One Common Pipistrelle flew north, one still foraging.
- 21:33. Another Common Pipistrelle from NE to forage over yard.
- 21:34. Common Pipistrelle passed south to north over site.
- 21:36. Three Common Pipistrelle foraging from the trees to the SE.
- 21:36. Three Common Pipistrelles constantly foraging around the site.
- 21:53. Reduced level of Common Pipistrelle foraging continued until 22:42.

Anabat 13 with Surveyor 5 recorded one hundred and twenty-two Common Pipistrelle calls between 21:28 and 22:42 and one Noctule call at 21:40.

3.6.4.6. Surveyor 6.

- 21:20. Common Pipistrelle emerged from SW gable end of farmhouse.
- 21:23. Common Pipistrelle heard not seen.
- 21:30. Common Pipistrelle heard not seen over trees.
- 21:33. Common Pipistrelles heard not seen, possibly other side of buildings.
- 21:34. Common Pipistrelle passed south to north over site.
- 21:36. Two Common Pipistrelle passed north to south foraging.
- 21:38. Common Pipistrelle from off site to the S and passed N.
- 21:38. Continual Common Pipistrelle foraging over buildings and trees until 21:57.
- 21:57. Reduced level of Common Pipistrelle foraging continued until 22:42.

Anabat 8 with Surveyor 6 recorded thirty Common Pipistrelle calls between 21:38 and 22:33, one Noctule call at 21:43 and one Myotis calls at 21:43.

3.6.4.7. Surveyor 7.

21:37. Common Pipistrelle heard not seen.

21:38. Common Pipistrelle passed NE to SW over site.

21:39. Four Common Pipistrelles foraging over buildings.

21:40. Multiple Common Pipistrelle foraging over buildings and along field edge until 22:11.

22:11 to 22:42. Reduced level of Common Pipistrelles foraging over buildings and along field edge.

Anabat 4 with Surveyor 7 recorded one hundred and sixty-six Common Pipistrelle calls between 21:38 and 22:34 and two Noctule calls at 21:40 and 21:50.

3.6.4.8. Surveyor 8.

21:38. Common Pipistrelle passed S to NW over site.

21:39. Two Common Pipistrelles foraging over buildings, went SE.

21:40. Continual Common Pipistrelle foraging over buildings and along field edge until 22:06.

22:06 to 22:42. Reduced level of Common Pipistrelles foraging over buildings and along field edge.

Anabat 7 with Surveyor 8 recorded one hundred and fifty-two Common Pipistrelle calls between 21:39 and 22:34 and three Noctule calls at 21:40, 21:43 and 21:50.

3.6.4.9. Surveyor 9.

21:36. Faint Common Pipistrelle heard not seen.

21:38. Up to three Common Pipistrelles foraging over buildings until 21:49.

21:51. Continuous Common Pipistrelle foraging activity until 22:42, level reduced at end of survey.

Anabat 6 with Surveyor 9 recorded one hundred and six Common Pipistrelle calls between 21:38 and 22:42, one Noctule call at 21:40 and two Myotis calls at 22:21 and 22:27.

Anabat 18 between Surveyors 2 and 9 recorded one hundred and four Common Pipistrelle calls between 21:27 and 22:42, one Noctule call at 21:40 and twenty-six Myotis calls between 21:56 and 22:34.

3.6.5. Survey Summary.

3.6.5.1. This was a very difficult survey because of the number of trees present on site obscuring sight lines. This was made worse by continual Common Pipistrelle foraging activity throughout the survey. All of the Common Pipistrelles were first heard in the disused railway cutting and came onto site from the northwest.

3.6.5.2. Myotis bats were recorded on the Anabat recorders in small numbers. These were hard to distinguish because of the constant background noise of Common Pipistrelles foraging. However, Anabat 18 between Surveyors 2 and 9 recorded twenty-six Myotis calls when the Anabat recorders with Surveyors 2 and 9 recorded only three and two calls respectively. In addition, the first recording on Anabat 18 was at 21:56, much earlier than anywhere else on the site except one isolated call east of the farmhouse at 21:43.

3.6.5.3. Noctules were recorded passing over the site at 21:40, 21:43 and 21:50.

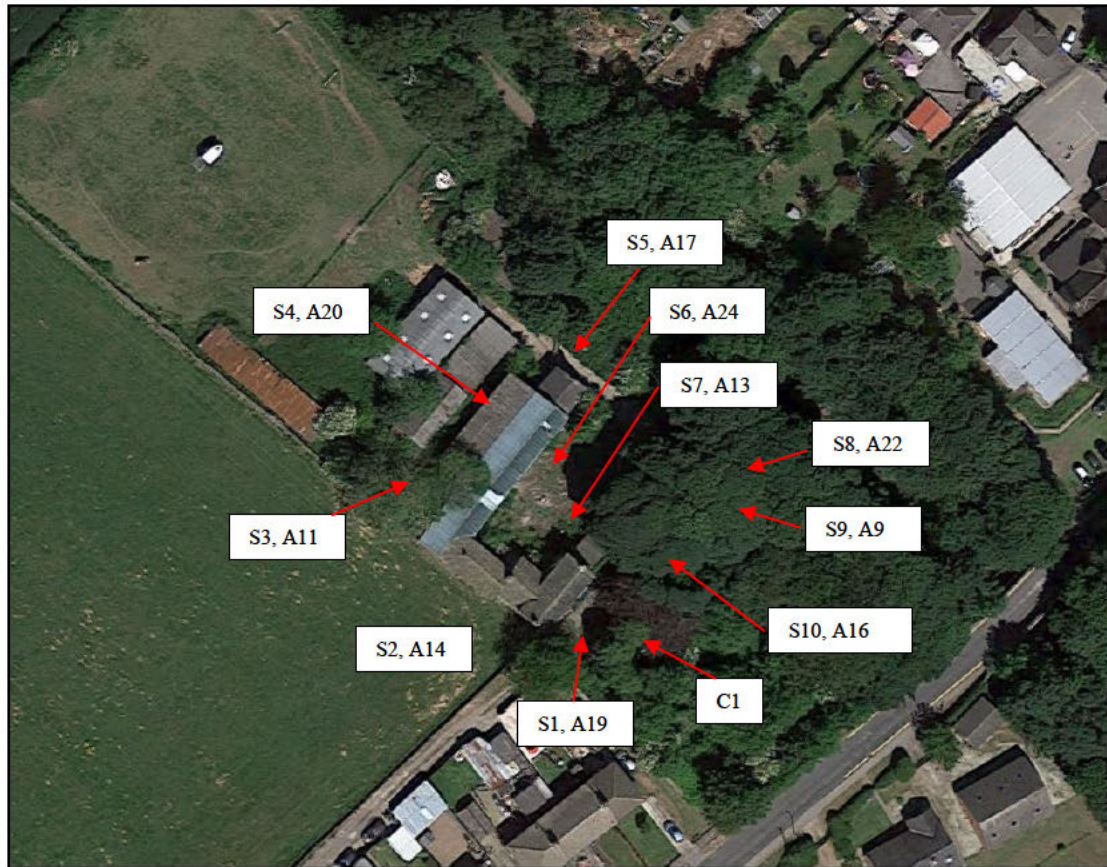
3.6.5.4. As a result of the level of bat activity over the site and the dense trees, a further survey was recommended.

3.7. Dawn Swarm Survey Results, July 2019.

3.7.1. A dawn swarm survey was carried out by ten surveyors on the morning of 12th July 2019. Five of those surveyors hold current Natural England bat survey licences and five are experienced assistants.

3.7.2. The surveyors (S) were positioned around the buildings in order to view all aspects simultaneously. In addition, surveyors were positioned to view tree T36 assessed to have a moderate potential for roosting bats and trees T31, T44 and T45, which were ivy covered and could not be included in the climbing survey. Each surveyor was equipped with a Batbox Duet detector and a two-way radio for communication. Static Anabat recorders (A) were deployed to record bat activity for subsequent computer analysis using Analook software. In addition, a video camera

with infra-red light source and night sight was positioned to view T29. The aerial photograph below shows the locations of the surveyors and Anabat recorders.



3.7.3. The morning was mild with a temperature of 17°C at 03:30, an overcast sky and minimal wind although a light wind got up around 04:30 gusting to 6mph. Sunrise was at 04:50, the survey commenced at 03:15 and finished at :05:05.

3.7.4. The following are the observations of the surveyors and the recordings on the Anabats with each surveyor.

3.7.4.1. Surveyor 1.

- 03:27. Common Pipistrelle briefly heard not seen.
- 03:37. Common Pipistrelle heard not seen foraging in trees.
- 03:44. Common Pipistrelle briefly heard not seen.
- 03:46. Common Pipistrelle from the SE, briefly foraged and returned SE.
- 03:56. Common Pipistrelle briefly heard not seen.
- 03:57. Common Pipistrelle briefly heard not seen.
- 03:59. Common Pipistrelle heard not seen.

04:01. Common Pipistrelle seen near NE chimney of house.
03:59 to 04:25. Intermittent Common Pipistrelles foraging to the south of the site.
04:12. Common Pipistrelle flew south around the house.
04:13. Common Pipistrelle flew SE around the house.
04:15. Common Pipistrelle passed NE to S past house.
04:16. Common Pipistrelle passed NE to S past house.
04:17. Common Pipistrelle passed S to N past house.
04:21. Common Pipistrelle passed NE to S past house.

Anabat 19 with Surveyor 1 recorded seventeen Common Pipistrelle calls between 03:28 and 04:23.

3.7.4.2. Surveyor 2.

03:39. Common Pipistrelle briefly heard not seen.
03:44. Common Pipistrelle briefly heard not seen.
03:46. Common Pipistrelle heard not seen.
03:50. Common Pipistrelle foraging south of buildings, went W.
03:59 to 04:24. Common Pipistrelle continually foraging over field to the south of site.

Anabat 14 with Surveyor 2 recorded fifty-six Common Pipistrelle calls between 03:43 and 04:22.

3.7.4.3. Surveyor 3.

03:32 to 04:00. Common Pipistrelles intermittently foraging.
04:06. Common Pipistrelle briefly foraging between buildings.
04:09 to 04:25. Common Pipistrelles foraging over buildings.

Anabat 11 with Surveyor 3 recorded sixty-seven Common Pipistrelle calls between 03:32 and 04:20.

3.7.4.4. Surveyor 4.

03:32 to 03:35. Common Pipistrelle heard continually foraging, not seen.
03:44. Common Pipistrelle briefly heard not seen.

03:46. Common Pipistrelle heard not seen.
03:47. Common Pipistrelle heard not seen.
03:55. Common Pipistrelle heard not seen.
04:01. Common Pipistrelle heard not seen.
04:05. Common Pipistrelle heard not seen.
04:07. Common Pipistrelle heard not seen.
04:10. Common Pipistrelle heard not seen.
04:12. Common Pipistrelle heard not seen.
04:13. Common Pipistrelle heard not seen.
04:19. Common Pipistrelle heard not seen.

Anabat 20 with Surveyor 4 recorded three Common Pipistrelle calls between 03:32 and 03:45.

3.7.4.5. Surveyor 5.

03:33 to 04:40. Common Pipistrelle continually foraging over the site and the disused railway cutting. Gradual movement from the site north.

Anabat 17 with Surveyor 5 recorded forty-three Common Pipistrelle calls between 03:26 and 04:21 and three Myotis calls between 03:35 and 03:52.

3.7.4.6. Surveyor 6.

03:27. Common Pipistrelle heard not seen.
03:39. Common Pipistrelle heard not seen.
03:40. Common Pipistrelle passed south to north.
03:44. Common Pipistrelle passed east to west.
03:51. Common Pipistrelle heard not seen.
03:59. Common Pipistrelle passed north to south.
04:00. Common Pipistrelle passed south to north.
04:08. Two Common Pipistrelles passed east to west.
04:10. Two Common Pipistrelles passed south to north.
04:12. Common Pipistrelle from the south, foraged and went north.
04:13. Common Pipistrelle passed south to north.
04:15. Common Pipistrelle passed north to SE.
04:18. Two Common Pipistrelles passed west to east.
04:19. Common Pipistrelle from the south, foraged and went north.

- 04:20. Common Pipistrelle from the north, foraged and went north.
- 04:21. Common Pipistrelle passed north to south.
- 04:21. Common Pipistrelle from the south, foraged and went north.
- 04:23. Common Pipistrelle heard not seen.

Anabat 24 with Surveyor 6 recorded twenty-six Common Pipistrelle calls between 03:27 and 04:23.

3.7.4.7. Surveyor 7.

- 03:27. Common Pipistrelle heard not seen.
- 03:39. Common Pipistrelle heard not seen.
- 03:40. Common Pipistrelle heard not seen.
- 03:44. Common Pipistrelle passed east to west.
- 03:51. Common Pipistrelle heard not seen.
- 03:59. Common Pipistrelle passed north to south.
- 04:08. Two Common Pipistrelles passed east to west.
- 04:11 to 04:13. Two Common Pipistrelles from the south, circled and foraged and left to the north.
- 04:18. Two Common Pipistrelles passed west to east.
- 04:19. Common Pipistrelle from the south, foraged and went north.
- 04:20. Common Pipistrelle heard not seen.
- 04:21. Common Pipistrelle passed north to south.
- 04:21. Common Pipistrelle from the south, foraged and went north.
- 04:23. Common Pipistrelle heard not seen.

Anabat 13 with Surveyor 7 recorded twenty-one Common Pipistrelle calls between 03:27 and 04:23.

3.7.4.8. Surveyor 8.

- 03:25 to 04:02. Continual Common Pipistrelle foraging around trees.
- 04:02 to 04:29. Intermittent Common Pipistrelle foraging at a reduced level.
- 04:29 to 04:35. Common Pipistrelles continually foraging at reducing level.

Anabat 22 with Surveyor 8 recorded eighty-three Common Pipistrelle calls between 03:23 and 04:28 and fifteen Myotis calls between 03:24 and 03:58.

3.7.4.9. Surveyor 9.

03:29 to 03:45. Continual Common Pipistrelle and Myotis foraging around trees.

03:45 to 04:06. Common Pipistrelle and Myotis foraging at a reduced level.

04:06. Brief Common Pipistrelle heard not seen.

04:12. Brief Common Pipistrelle heard not seen.

04:17. Common Pipistrelle west over disused railway line.

04:19. Common Pipistrelle passed north.

04:22. Common Pipistrelle passed north over the disused railway line.

04:27. Common Pipistrelle heard not seen.

Anabat 9 with Surveyor 9 recorded eighty-four Common Pipistrelle calls between 03:27 and 04:27 and eight Myotis calls between 03:26 and 03:55.

3.7.4.10. Surveyor 10.

03:20 to 03:45. Continual Common Pipistrelle and Myotis foraging around trees and along track to house.

03:45 to 04:06. Common Pipistrelle and Myotis foraging at a reduced level.

04:06. Brief Common Pipistrelle heard not seen.

04:12. Brief Common Pipistrelle heard not seen.

04:17. Common Pipistrelle west over disused railway line.

04:19. Common Pipistrelle passed north.

04:22. Common Pipistrelle passed north over the disused railway line.

04:27. Common Pipistrelle heard not seen.

Anabat 16 with Surveyor 10 recorded twenty-nine Common Pipistrelle calls between 03:20 and 04:20 and nine Myotis calls between 03:24 and 03:37.

3.7.5. Survey Summary.

3.7.5.1. During this very successful survey a high level of Common Pipistrelle activity was seen and recorded although this reduced as the survey went on. The pattern of activity was initially Common Pipistrelles foraging around the trees and scrub before moving north over the disused railway line. This is the reverse of the pattern identified during the dusk emergence survey and clearly indicates the presence of a significant Common Pipistrelle roost to the north.

3.7.5.2. Myotis activity was again recorded on the Anabat recorders. This activity was not recorded by the surveyors as again the Myotis calls were obscured by the high levels of Common Pipistrelle activity. The Myotis were recorded by the Anabats at the eastern end of the site around the mature trees with Surveyors 8, 9 and 10 and to a lesser degree Surveyor 5. All Myotis activity was recorded early in the survey with the last call at 03:58. The Myotis also left site towards the north.

3.7.5.3. No bats entered any roosts within the buildings or the trees on the site.

4.4. Biodiversity calculations were carried out using the DEFRA Metric 3.0. The baseline habitat on the site was calculated at 2.60 Habitat Units as shown in the table below.

Habitat Type	Extent (ha)	Distinctiveness	Condition Assessment	Biodiversity units
Modified grassland	0.32	Low	Moderate	1.28
Mixed Scrub	0.2	Medium	Poor	0.80
Ruderal/Ephemeral	0.1	Low	Poor	0.20
Developed Land, Sealed Surface	0.2	Very Low	N/A Other	0.00
Other Woodland, Broadleaved	0.08	Medium	Poor	0.32
Total	0.9			2.60

4.4.1. The baseline hedgerows on the site were calculated at 0.29 Habitat Units as shown in the table below.

Hedgerow Type	Length (km)	Distinctiveness	Condition Assessment	Biodiversity units
Native Hedgerow	0.17	Low	Poor	0.34
Ornamental non native	0.12	Very Low	Poor	0.12
Total	0.29			0.46

4.4.2. The condition assessment for each habitat is based on the criteria set out in the Biodiversity Metric Technical Supplement. A full list of the condition criteria for each habitat is shown as Appendix X. This also shows how each habitat has also passed or failed to reach certain criteria.

4.4.3. There are no finalised plans for the site at this present time therefore it is not possible to undertake a full impact assessment and determine what areas of which habitats will be lost.

4.5.1. The proposed development will have a major impact on Sett S1 as the development will necessitate the demolition of Buildings B7, B8 and B11 immediately adjacent to the sett. In addition, an access road is to be constructed over the top of the sett.

4.5.2. The proposed development will impact on Sett S2 because Building B7 that the sett is in, is to be demolished.

4.5.3. Setts S3 and S4 are in the western end section of the site that is not to be affected by the proposed development.

4.6. There are no watercourses present on or near the site that would provide habitat for water voles, otters or crayfish and therefore the works will have no impact on these species.

4.7. There are buildings on the site that are to be demolished and that contain potential for roosting bats. The table below summarises the bat roost potential of each building, as assessed following the daytime survey. The assessment for each building takes account of the poor state of repair because many have deteriorated so far that they are now open to the elements and very damp.

Building	Potential Bat Roosts.	Bat Roost Potential.
B1 – Farmhouse.	Gaps around eaves and between roof slates.	Low.
B2 - Farmhouse Extension and Log Shed.	Gaps around eaves and tops of walls inside.	Low.
B3 - Farm Cottage.	Holes around eaves and in roof but very damp inside and no access.	Low.
B4 – Farm Cottages.	Open windows, tin roof but no internal access.	Low.
B5 – Small Cottage.	Holes around eaves, in a joint between buildings and in the front wall.	Moderate.

B6 - Timber Lean-to Shelter.	Design provides no opportunities for roosting bats.	Unsuitable.
B7 – Farm Building.	Walls in good condition, corrugated sheet roof.	Unsuitable.
B8 – Farm Building.	Low potential in holes in stone walls and inside the building.	Low.
B9 Modern Farm Building.	Modern blockwork building with a single sloping corrugated sheet roof.	Unsuitable.
B10 - Pig Sties.	Single skin brick walls and corrugated sheet roofs, open.	Unsuitable.
B11 – New Field Barn.	Modern Dutch Barn.	Unsuitable.
B12 – Field Shelter.	Derelict, timber and corrugated sheets.	Unsuitable.
B13 – Greenhouses.	Timber frames covered in plastic sheets but largely derelict.	Unsuitable.

4.8. There are mature trees on the site that have the potential to provide bat roosting opportunities. These were inspected during climbing surveys in 2019 and were assessed as a result.

4.8.1. As a result of the initial assessments, an initial dusk emergence survey was undertaken of all buildings on site in May 2019. During that survey a high level of Common Pipistrelle bat activity was recorded along with a low level of Myotis bat activity. No bats emerged from the buildings on site.

4.8.2. As a result of the high levels of bat activity during the initial dusk emergence survey, a further dawn swarm survey was carried out in July 2019. During that dawn survey, the buildings on site and the trees that were identified to have a moderate potential for roosting bats, plus those that were covered in dense ivy and could not be effectively surveyed by climbing, were all covered by surveyors. During that dawn survey, no bats entered any of the buildings or trees on site to roost.

4.8.3. However, as these bat surveys are over three years old, and the site has remained undisturbed for that time bats may have begun to use the buildings or trees to roost. As a result, the demolition of the buildings and the felling of the specified trees on site will have a high impact on roosting bats if they are present.

4.9. The site provides suitable habitat for foraging bats, particularly around the trees and scrub on the site. During the dusk and dawn surveys carried out in 2019 high levels of Common Pipistrelle foraging activity were recorded over the site with some myotis activity. The Trans-Pennine Trail that runs past the north-eastern side of the site provides a linear wildlife corridor that connects the site to other suitable areas of bat foraging habitat, particularly to the south east. Any works that impact on the trees and vegetation on the site will potentially impact on that bat foraging habitat. This includes light impacts.

4.10. No ponds were identified on site or from study of Ordnance Survey maps of the area to provide suitable breeding habitat for amphibians. The only records of great crested newts in the data search are across the other side of the main road and the River Don and are dated from the mid-1990s. Therefore, any works on the site will not impact on amphibians.

4.11. The habitat on and around the site and the buildings are ideal habitat for nesting birds between March and September, during the nesting season. Vegetation clearance or works to the buildings during this time will impact on any nesting birds that may be present.

4.12. Loss of the small field on site will be a negligible impact on Golden Plovers with abundant alternative habitat around the site.

4.13. In addition, the trees at the eastern corner of the site are a long-standing rookery and the removal of these trees would destroy that rookery.

4.14. The site is assessed to be unsuitable habitat for reptiles. Therefore, the proposed development will not impact on reptiles.

4.15. The vegetation on the site does not provide a suitable habitat for hazel dormouse as it is outside the normal range of the species. Any works on the site will not impact on the species.

4.16. The site is unsuitable habitat for red squirrels and there are no known red squirrel populations within the surrounding area. Any works on the site will not impact on the species.

4.17. Possible Himalayan balsam seedlings were identified on the site between Buildings 6 and 7. This is a non-native, invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981. If the seedlings are positively identified as Himalayan balsam the development could cause the plants to spread.

5. RECOMMENDATIONS.

5.1. This Preliminary Ecological Appraisal report is designed to advise the client of the initial survey results so that they may be considered within the site development plan.

5.2. Once any further surveys required have been completed and the development plans have been finalised, the report must be converted into an Ecological Impact Assessment (EcIA) where details of further survey results, mitigation and biological enhancements are included, to arrive at an assessment of the residual impact of the proposed development. This should include biodiversity calculation to demonstrate no net loss of biodiversity as a result of the development. The EcIA format will be suitable to submit to the Local Authority.

5.3. As the bat activity and tree inspection surveys were carried out in 2019 and are now three years old it is recommended that these surveys are updated to assess whether the situation on site has changed and whether bats now use the site to roost.

5.4. One bat dusk emergence survey is required of Buildings 1, 2, 3, 4, 5 and 8 between May and August. A further dawn swarming survey is required of Building 5 which has moderate bat roost potential. This must be carried out at least two weeks after the dusk emergence survey.

5.5. It is recommended that all trees assessed to have a moderate potential for roosting bats are re surveyed to update the findings of the surveys carried out in 2019.

5.6. If bats are now found to be roosting in any of the buildings or the trees a full mitigation strategy must be prepared and submitted with the planning application. Once planning permission is granted a Natural England EPS licence will be required, based on the mitigation strategy. No work can be carried out that will affect a bat roost until the Natural England licence is in place.

5.7. It is recommended that a lighting scheme be installed on site that is designed to avoid light impact on retained trees and vegetation and in particular, the disused railway corridor.

5.8. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

5.9. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED] It is recommended that any necessary vegetation clearance and demolition of the buildings on site is undertaken outside the nesting season. Any vegetation clearance works or demolition during the nesting season must be preceded by a nesting bird survey carried out by a suitable experienced person and any nests found must be left undisturbed until the young have fledged.

5.11. As seedlings suspected to be Himalayan Balsam have been identified on the site it is recommended that an invasive species survey is carried out in May when the plants will have grown and can be positively identified.

5.12. If Himalayan Balsam is present the plants must be eradicated from the site to prevent the development from causing the plants to spread. All materials contaminated with seed will need to be treated as contaminated waste.

5.13. It is recommended that biodiversity enhancements are incorporated into this report in line with the requirement of the NPPF. The following are all suggested for inclusion in the site in addition to the wildlife area.

5.13.1. It is recommended that the hedgerow across the front of the site against Roughbitchworth Lane is retained and enhanced with additional native species planting where appropriate.

5.13.2. It is recommended that additional planting be undertaken including the planting of a native species hedgerow alongside the Trans Pennine Trail.

5.13.3. It is recommended that additional beech trees be planted in the area of retained trees to ensure continuity of trees of different ages on site. These will also mitigate for the loss of a number of inferior quality trees to be felled.

5.13.4. It is recommended that bat bricks be designed into the houses to be built on the site. Integrated bat bricks will provide bat roosting opportunities in the outer skin of the new houses.

5.13.5. It is recommended that gaps be left under all plot fences approximately 130mm square to enable hedgehogs and other wildlife continued passage.

5.13.6. It is recommended that a selection of bird nest boxes be placed on trees and buildings around the site including swallow boxes to replace opportunities lost in the buildings.

5.14. There is a requirement to provide an overall biodiversity net gain on the site. The local authority may require a net gain of at least 10% biodiversity units. Initially, it is recommended that as much of the existing habitats on the site as possible are retained to minimise the number of biodiversity units lost in the first instance. This will make it easier to achieve no net loss and ideally a net gain. Where habitat is to be lost, larger areas of the same value habitats or of higher value will be required. Retained areas of habitat could potentially be enhanced.

Prepared by:	
Jenny Whitcher Roebuck MCIEEM.	Date: 22 nd March 2022.

Checked by:	
Derek Whitcher, BSc, MCIEEM, MCMi	Date: 24 th March 2022.

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Appendix I. BADGER INFORMATION.

Ecology

Badgers are territorial animals who live in social groups called 'clans'. The territory of these clans can vary in size from 0.2km² to 1.5 km² with anywhere between two and twenty Badgers present. In areas where two clans meet territorial boundaries become well-defined, marked by a series of dung pits called latrines. In areas with relatively low Badger populations there will be less competition for territory and the number of territorial markings will be low or even non-existent.

Badgers use paths around their territory repeatedly, following a scent trail from previous use; thus, Badger paths become well worn. These paths are important to the Badgers and obstruction to these paths will interfere with the Badger's movement around their territory.

Badger setts are any structure or place which displays signs of current or seasonal use by a Badger. Within a Badger clan territory there can be several Badger setts which are categorised in the following ways:

- **Main Sett.** *There will normally be one main sett in a territory. This will generally be the largest sett in the territory, typically with five or more entrances, will be permanently occupied throughout the year and used as the breeding sett.*
- **Outlying Sett.** *These are the smallest setts with generally only one or two entrances. They are intermittently occupied and there can be any number in a territory.*
- **Annex Sett.** *A sett of intermediate size, located close to the main sett and connected by well-defined paths. These are occupied for prolonged periods and may be used as a second breeding sett if there are two breeding sows in the clan.*
- **Subsidiary Sett.** *A sett of intermediate size, similar to an annex sett but located at some distance from the main sett and not connected to the main sett by defined paths.*

Badgers can mate at any time of year but delayed implantation controls the time of birth. Most cubs are born between January and March, but they can be born at any

time between December and June. An average of two to three Badger cubs are born to each sow and will initially be totally dependent on their mother. Cubs do not appear above ground until during April or May when they are 8 – 10 weeks old and are not fully weaned until at least June of each year.

Badgers are omnivorous but their preferred food source is worms and insects. Worms are most abundant in well-grazed pastureland while mixed woodland is a good source of insects and grubs. Badgers have a soft and supple nose with which they snuffle into the ground to find insects. When they do this, they leave distinct round holes known as snuffle holes or grubbings. Badgers easily find worms on the surface of well-grazed pastureland and often leave no visible indications of this foraging.

Surveys

Walkover surveys can be conducted to identify the presence of Badgers within an area. This will identify the presence of any setts, dung pits, paths or foraging activity.

Bait marking techniques can be used to survey Badger territories. This involves feeding Badgers at each sett pellets of different colours over a period of at least two weeks. The colour of pellet found in dung pits and territorial latrines shows what areas each clan of Badgers is occupying.

Legislation

Badgers are protected under Schedule 6 of the Wildlife and Countryside Act (1981) and the Protection of Badgers Act (1992).

This makes it an offence to take, kill or injure a Badger, cruelly ill-treat a badger, use Badger tongs or firearms in the killing or taking (or attempt) of a Badger. It is also an offence to damage, destroy, obstruct access to, or any entrance of, a Badger sett, to cause a dog to enter a Badger sett or disturb a Badger while it is occupying a sett.

Appendix II. BAT INFORMATION.

Ecology

There are currently 18 species of bat residing in Britain, 17 of which are known to breed here. They are extremely difficult to identify in the hand and even more so in flight.

All appear to be diminishing in numbers, probably due to habitat change and shortage of food, caused by pesticides, as insects are their sole diet.

As their diet consists solely of insects, bats hibernate during the winter when their food source is at its most scarce. They will spend the winter in hollow trees, caves, mines and the roofs of buildings.

Certain species, particularly the pipistrelle (the commonest and most widespread British bat) can quickly adapt to man-made structures and will readily use these to roost and to rear their young.

Surveys

During walkover surveys, bat roosts can be identified by looking for:

- Suitable holes, cracks and crevices within any building, tree or other structure.
- Bat droppings along walls, window sills, or on the ground.
- Prey remains, such as insect wings.

Further investigations can be made using endoscopes, by carrying out aerial inspections of trees or by conducting bat activity surveys during dusk and dawn over summer months.

Legislation

Bats are protected under Appendix II and III of the Bern Convention (1982), Schedule 5 and 6 of the Wildlife and Countryside Act (1981), Annex IV of the Habitats Directive (some species under Annex II), Annex II of the Conservation of Habitats and Species Regulations (2010) and EUROBATs agreement. Numerous species are also listed under section 41 of the Natural Environment and Rural Communities Act (2006) making them species of principal importance.

All bats and their roosts are therefore protected in the UK. This makes it an offence to kill, injure or take any bat, to interfere with any place used for shelter or protection, or to intentionally disturb any animal occupying such a place.

The UK has designated maternity and hibernacula areas as Special Areas of Conservation (SAC's) under the Habitats Directive. Implementation of the UK Biodiversity Action Plan also includes action for a number bat species and the habitats which support them.

Where development proposals are likely to affect a bat roost site, a licence is required from Natural England.

Appendix III. NESTING BIRD INFORMATION.

Ecology

The nesting season will vary according to the weather each year but generally commences in March, peaks during May and June and continues until September. It is also worth remembering that some birds nest in trees and scrub, but others are ground nesting or prefer man-made structures or buildings.

Surveys

Nesting bird surveys search for potential nest sites in vegetation, buildings etc. Potential nesting sites are observed over a suitable period of time for bird movements or calling male birds that would indicate the presence of a nest. The presence of a nest can be identified from the field signs without the necessity to see the nest itself, thereby avoiding any disturbance of the nests. The best way to avoid this issue is to plan for vegetation clearance to be carried out outside the bird-nesting season.

Legislation

Nesting birds are protected under The Wildlife and Countryside Act 1981.

Part 1. -(1) Of the Act states that: - If any person intentionally: - kills, injures or takes any wild bird; takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or takes or destroys an egg of any wild bird, he shall be guilty of an offence.

Part 1. -(5) of the Act states that: - If any person intentionally: - disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on, or near a nest containing eggs or young; or disturbs young of such a bird, he shall be guilty of an offence and liable to a special penalty.

The Countryside and Rights of Way Act 2000 amends the above by inserting after “intentionally” the words “or recklessly”.

Appendix IV. INVASIVE PLANT SPECIES INFORMATION.

Ecology

The Government has acknowledged the problems that can be caused by non-native invasive species. In 2008 the Government launched “The Invasive Non-Native Species Framework Strategy for Great Britain”. The strategy provides a framework for a more co-ordinated approach to invasive species management. It seeks to create a stronger sense of shared responsibility across government, key organisations, land managers and the public.

The Non-Native Species Secretariat has been established to oversee the implementation of the strategy. Details of the secretariat including risk assessments and action plans for some species are available at www.nonnativespecies.org.

In general, there are four basic methods of controlling weeds; mechanical, chemical, natural and environmental.

- ***Mechanical control*** includes cultivation, hoeing, pulling, cutting, raking, dredging or other methods to uproot or cut weeds.
Where this method is used all plant material must be considered “controlled waste” and must be disposed of properly.
- ***Chemical control*** uses approved herbicides.
- ***Natural control*** uses pests and diseases of the target weed to weaken it and prevent it from becoming a nuisance.
- ***Environmental control*** works by altering the environment to make it less suitable for weed growth, for example by increasing or decreasing water velocity.

Surveys

A site will be searched for invasive plant species growing on site, from mature plants to new shoots. A site will also be searched for dead stems indicating that plants that may have seasonally died back are present.

Legislation

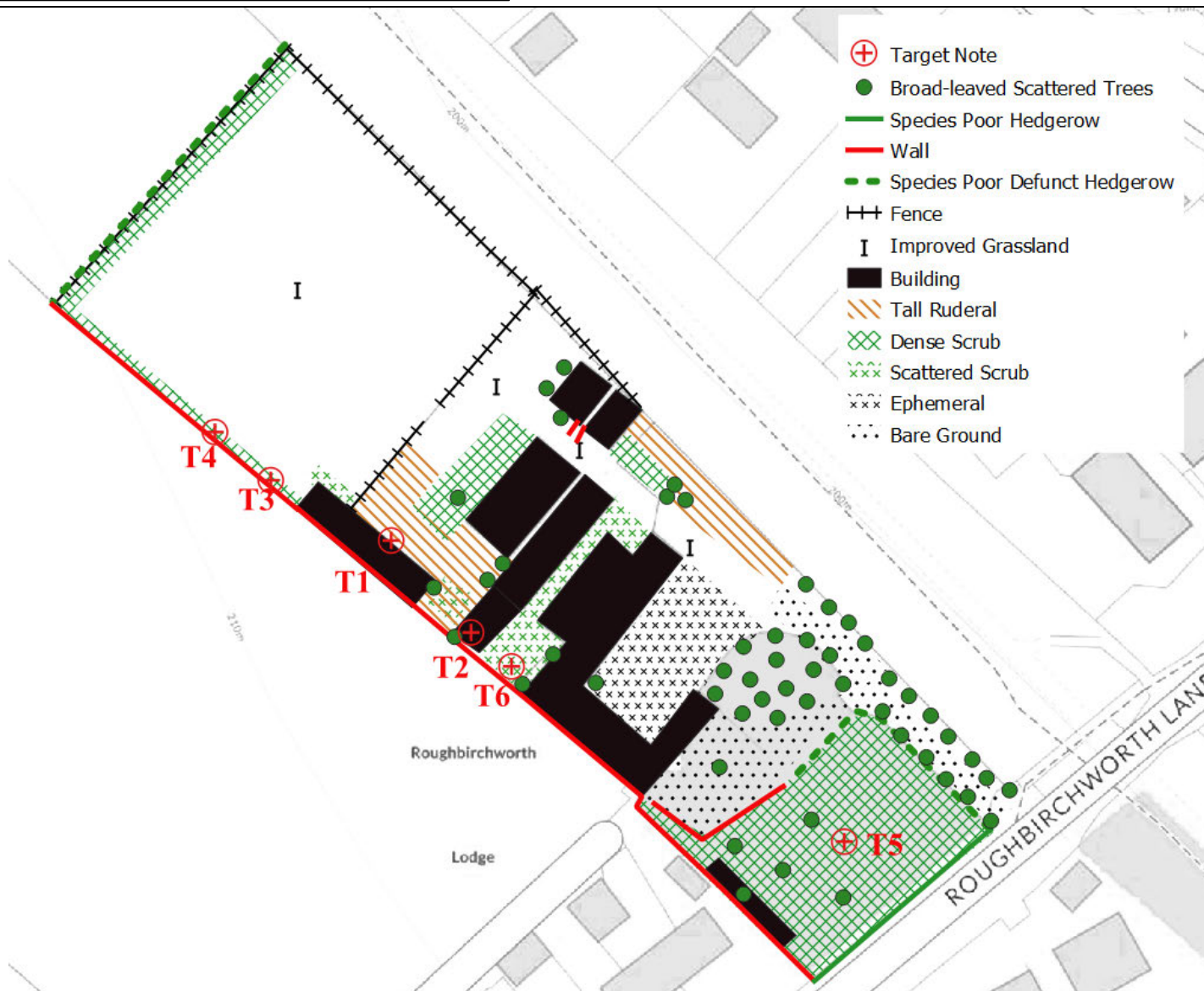
Invasive species listed under Schedule 9 are prohibited from release into the wild. Schedule 9, Section 14(2) prohibits ‘planting’ or ‘causing to grow’ in the wild of any plant listed in Part 2 of Schedule 9.

The following is a list of all the species of plant listed under Schedule 9 of The Wildlife and Countryside Act 1981.

Common Name	Scientific Name	England & Wales	Scotland
Alexanders, Perfoliate	<i>Smyrnium perfoliatum</i>	✓	
Algae, Red	<i>Grateloupia luxurians</i>	✓	
Archangel, Variegated Yellow	<i>Lamium galeobdolon subsp. Argentatum</i>	✓	
Azalea, Yellow	<i>Rhododendron luteum</i>	✓	
Balsam, Himalayan	<i>Impatiens glandulifera</i>	✓	
Cotoneaster	<i>Cotoneaster horizontalis</i>	✓	
Cotoneaster, Entire Leaved	<i>Cotoneaster integrifolius</i>	✓	
Cotoneaster, Himalayan	<i>Cotoneaster simonsii</i>	✓	
Cotoneaster, Hollyberry	<i>Cotoneaster bullatus</i>	✓	
Cotoneaster, Small Leaved	<i>Cotoneaster microphyllus</i>	✓	
Creeper, False Virginia	<i>Parthenocissus inserta</i>	✓	
Creeper, Virginia	<i>Parthenocissus quinquefolia</i>	✓	
Dewplant, Purple	<i>Disphyma crassifolium</i>	✓	
False-acacia	<i>Robinia pseudoacacia</i>		✓
Fanwort	<i>Cabomba caroliniana</i>	✓	✓
Fern, Water	<i>Azolla filiculoides</i>	✓	✓
Fig, Hottentot	<i>Carpobrotus edulis</i>	✓	✓
Garlic, Three-Cornered	<i>Allium triquetrum</i>	✓	
Hogweed, Giant	<i>Heracleum mantegazzianum</i>	✓	✓
Hyacinth, water	<i>Eichhornia crassipes</i>	✓	✓
Kelp, Giant	<i>Macrocystis angustifolia</i>	✓	✓
Kelp, Giant	<i>Macrocystis integrifolia</i>	✓	✓
Kelp, Giant	<i>Macrocystis laevis</i>	✓	✓
Kelp, Giant	<i>Macrocystis pyrifera</i>	✓	✓
Kelp, Japanese	<i>Laminaria japonica</i>	✓	✓

Knotweed, Giant	<i>Fallopia sachalinensis</i>	✓	
Knotweed, Hybrid	<i>Fallopia japonica x Fallopia sachalinensis</i>	✓	
Knotweed, Japanese	<i>Fallopia japonica</i>	✓	
Knotweed, Japanese	<i>Polygonum cuspidatum</i>		✓
Leek, Few-flowered	<i>Allium paradoxum</i>	✓	✓
Lettuce, water	<i>Pistia stratiotes</i>	✓	✓
Montbretia	<i>Crocsmia x crocosmiiflora</i>	✓	
Parrot's-feather	<i>Myriophyllum aquaticum</i>	✓	
Pennywort, Floating	<i>Hydrocotyle ranunculoides</i>	✓	
Potato, Duck	<i>Sagittaria latifolia</i>	✓	
Primrose, Floating Water	<i>Ludwigia peploides</i>	✓	
Primrose, Water	<i>Ludwigia grandiflora</i>	✓	
Rhododendron	<i>Rhododendron ponticum</i>	✓	
Rhubarb, Giant	<i>Gunnera tinctorial</i>	✓	
Rose, Japanese	<i>Rosa rugosa</i>	✓	
Salvinia, Giant	<i>Salvinia molesta</i>	✓	✓
Seafingers, Green	<i>Codium fragile</i>	✓	
Seafingers, Green	<i>Codium fragile tomentosoides</i>		✓
Seaweed, Californian Red	<i>Pikea californica</i>	✓	✓
Seaweed, Hooked Asparagus	<i>Asparagopsis armata</i>	✓	✓
Seaweed, Japanese	<i>Sargassum muticum</i>	✓	✓
Seaweeds, Laver (except native species)	<i>Porphyra sp. except - P. amethystea P. leucosticta P. linearis P. miniata P. purpurea P. umbilicalis</i>	✓	✓
Shallon	<i>Gaultheria shallon</i>		✓
Stonecrop, Australian swamp	<i>Crassula helmsii</i>	✓	✓
Wakame	<i>Undaria pinnatifida</i>	✓	✓
Waterweed, Curly	<i>Lagarosiphon major</i>	✓	✓
Waterweeds	<i>All species of the genus Elodea</i>	✓	

Appendix V. ANNOTATED MAP OF THE SURVEY AREA.



Reference: 220227

Prepared by: Whitcher Wildlife Ltd

Site: Roughbirchworth Lodge

Date: 22nd March 2022

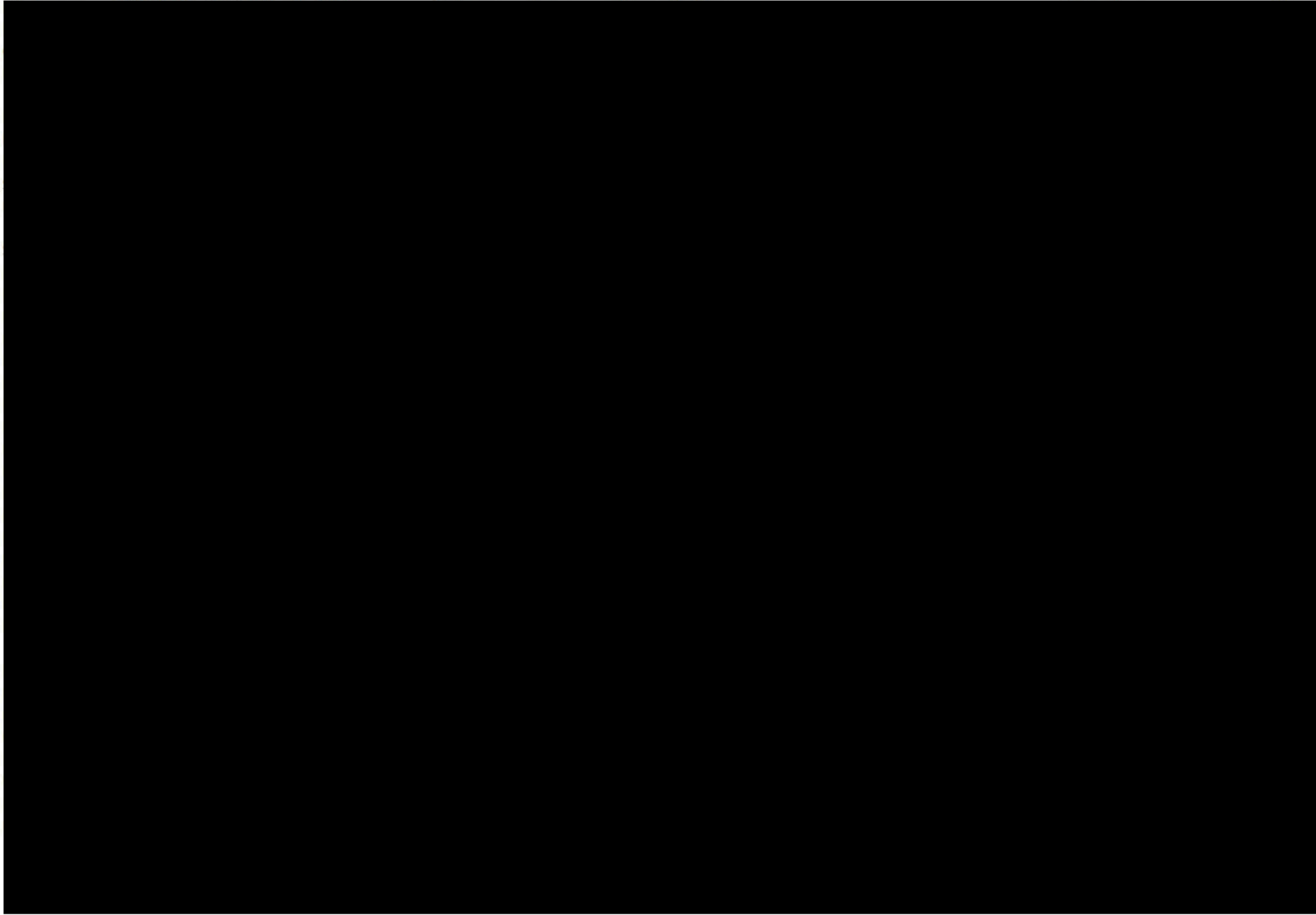


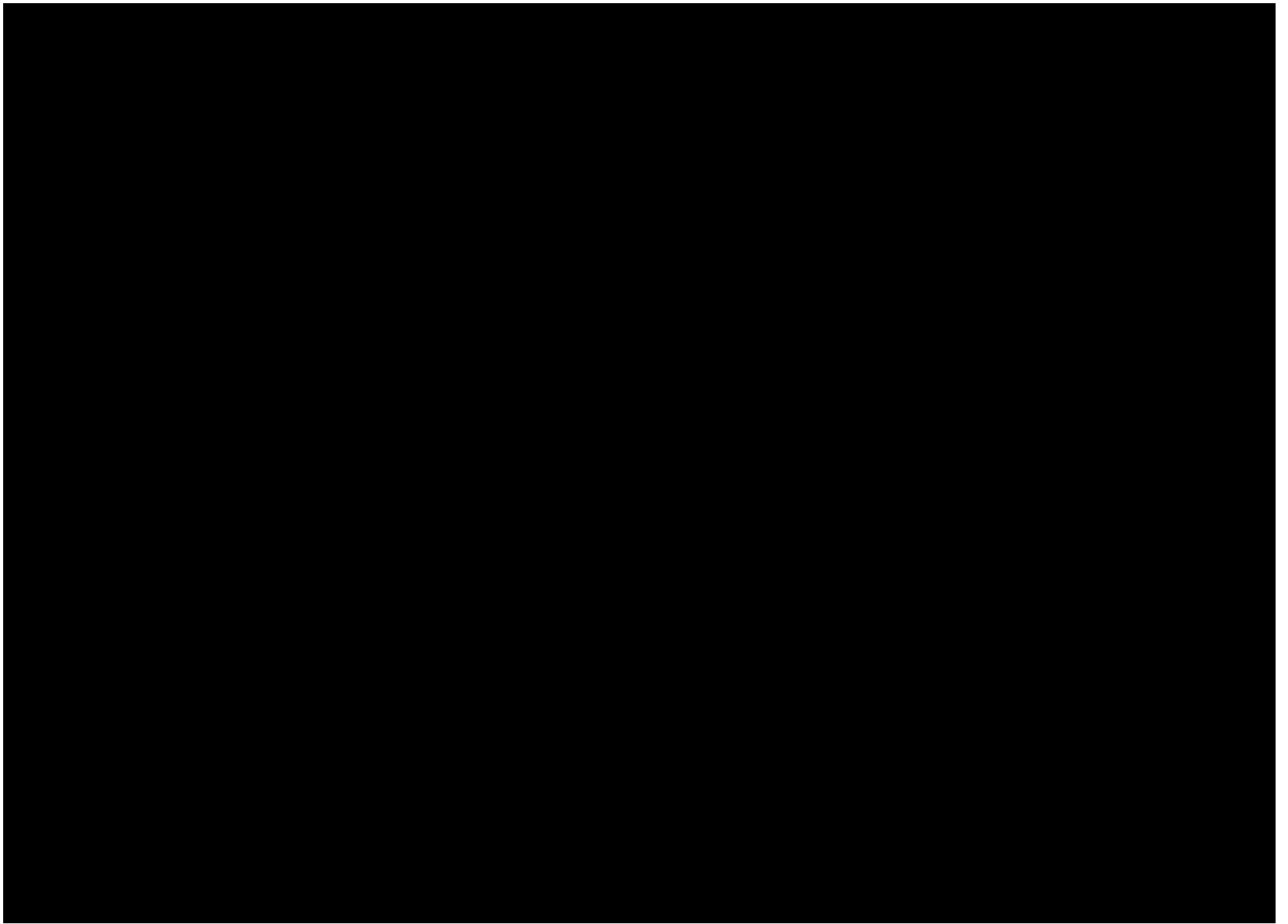
Appendix VI. TARGET NOTES.

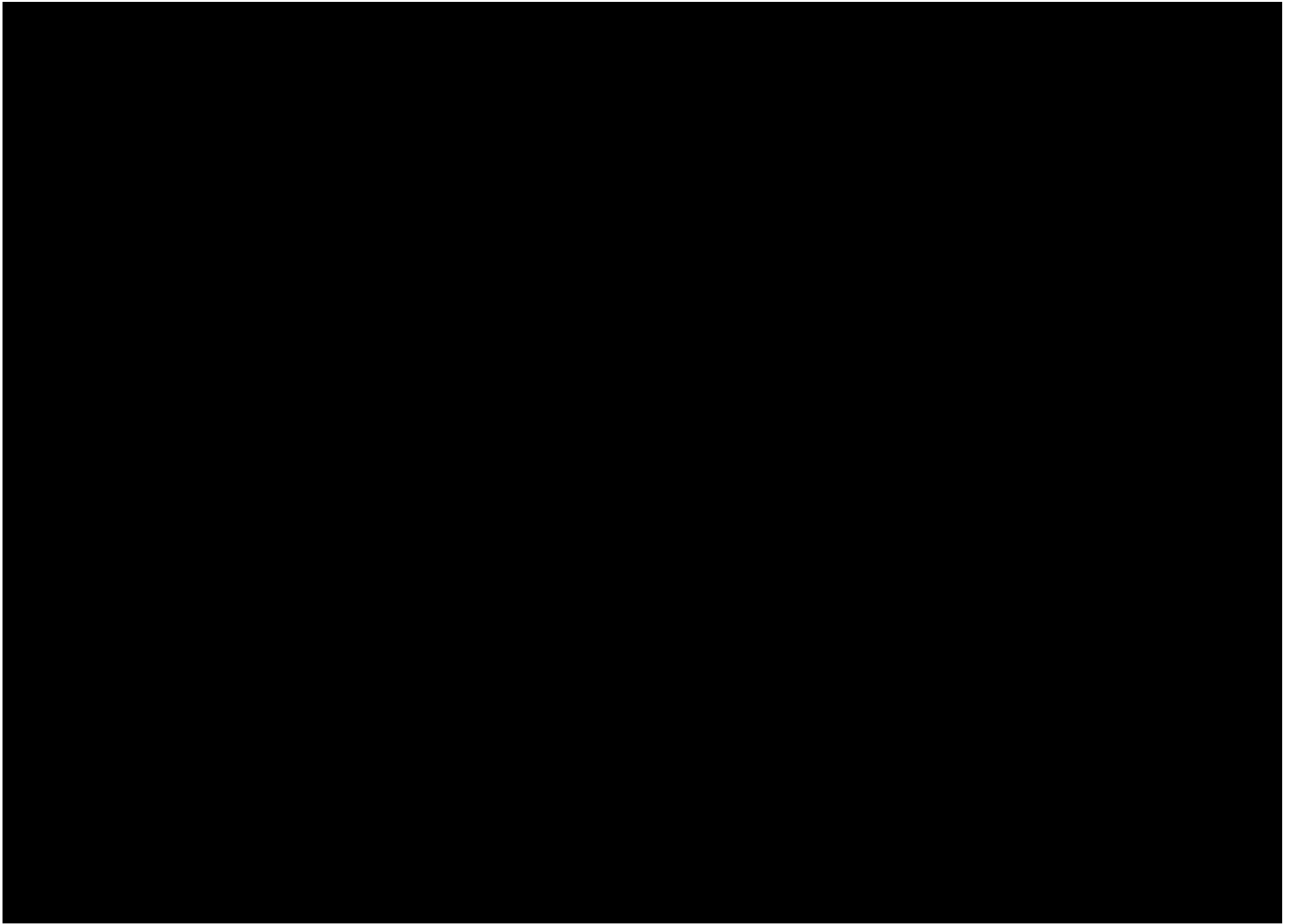
Target Note Ref:	Description:
1	Badger sett S1
2	Badger sett S2
3	Badger sett S3
4	Badger sett S4
5	Former garden associated with farmhouse
6	Possible Himalayan Balsam Seedlings

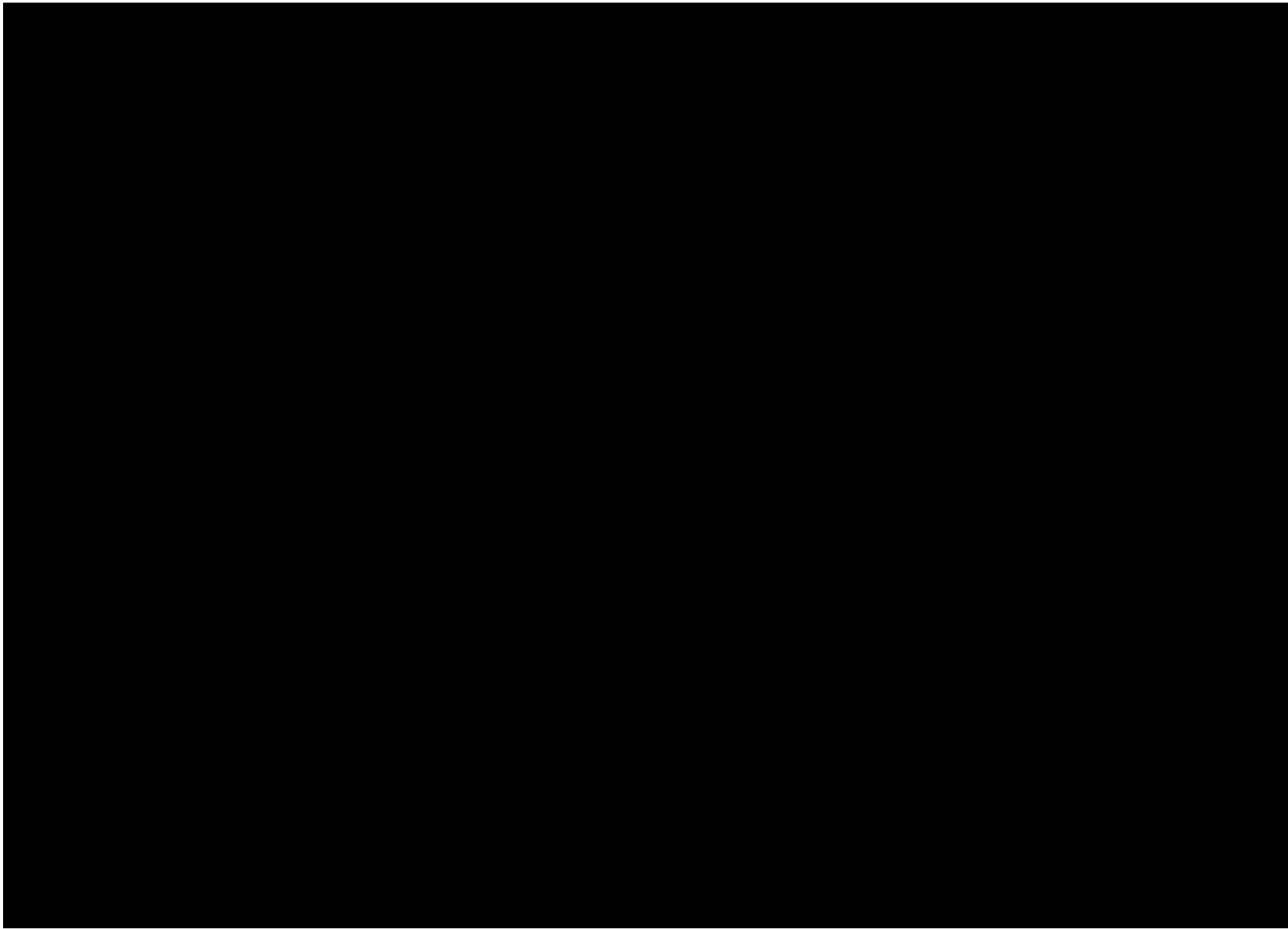
Appendix VII. SOUTH YORKSHIRE BAT GROUP DATA SEARCH

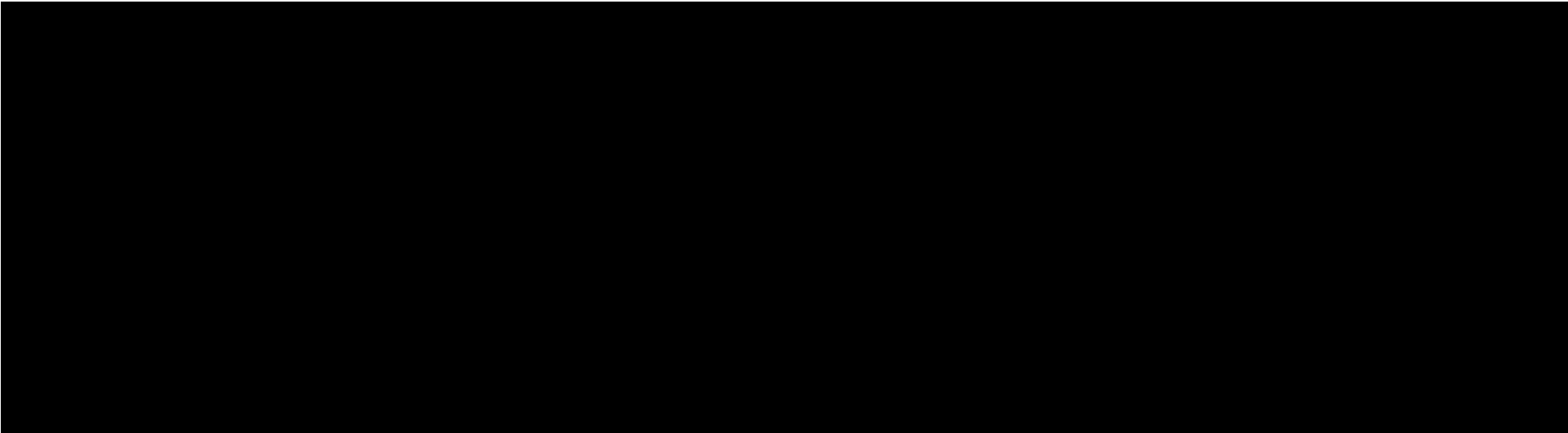
Recorder	Date	GridRef 6Fig	Address line 1	Address line 2	Type	Access points	Roost (Location)	Notes	Species	Number
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Appendix VIII. SOUTH YORKSHIRE BADGER GROUP DATA SEARCH RESULTS.

Hi Derek,

Request for badger data for the area off Roughbitchworth Lane, Oxspring

Members of SYBG last visited this area about two years ago following a report that there was a badger sett in the grounds of the large house at the lower end of the Lane, but above the Transpennine Trail. We arrived just as members of the family were visiting, and unfortunately, they refused us access and said the area was overgrown and inaccessible anyway.

However, there were many badger prints along the trail just below this property and the footpath coming out near the top Roughbitchworth Lane. The person who had seen the sett was a SYBG member, so we are confident that there is an active sett in this wilderness area, grid reference approx [REDACTED]

There are badgers living in old land drains in a field behind the bungalow called Kon Tiki grid reference [REDACTED] I have heard but not had it verified that there are now also badgers in the garden of Kon Tiki.

I hope this information is helpful,

Regards

Monica
Barnsley Representative for SYBG.

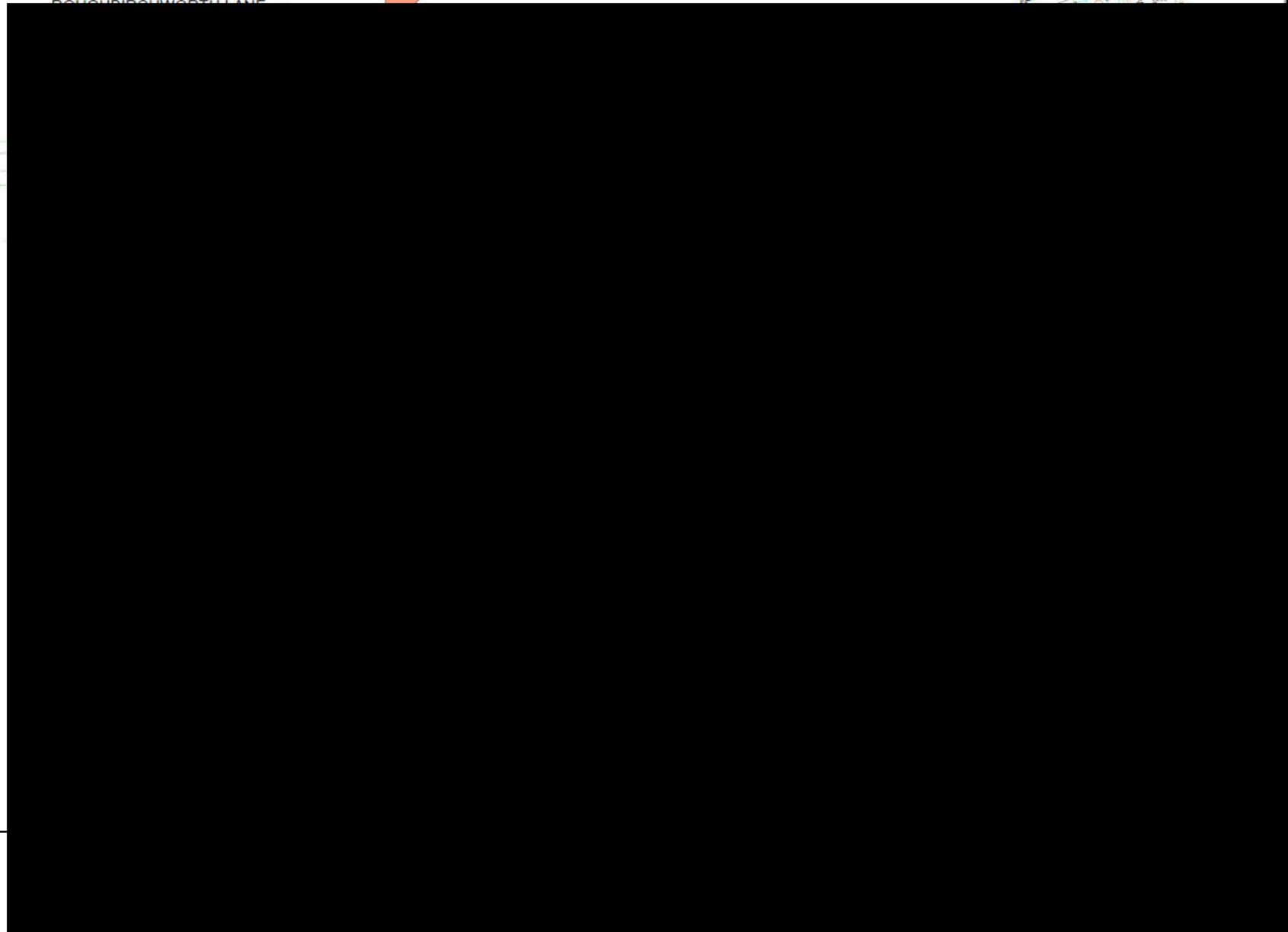
Monica

PROPOSED LAYOUT AT 1:25

ROUGH BIRCHWORTH LODGE,
ROUGH BIRCHWORTH LANE

Appendix IX. DEVELOPMENT PLAN.

1) This drawing and the design and details depicted thereon are the copyright of Peter Stuchlik (The Contractor) Ltd.
2) All dimensions on this drawing are to be checked by the Contractor and any discrepancies are to be reported to the architect.
3) Do not scale critical dimensions off this drawing.
4) Contractor to ensure that all health & safety requirements (COSHH requirements) in relation to this project will be complied with.



Appendix X. BIODIVERSITY NET GAIN HABITAT CONDITION CRITERIA.

Grassland – low value (modified grassland)

1	There must be 6-8 species per m ² . Note - if a grassland has 9 or more species per m ² it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving good condition.	Fail
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Pass
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Fail
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	Pass
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Pass
6	Cover of bracken less than 20%.	Pass
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species ¹ make up less than 5% of ground cover.	Pass

Condition assessment results:	Condition assessment score:
Passes 6 or 7 of 7 criteria including non-negotiable criterion 7	Good (3)
Passes 4 or 5 of 7 criteria; OR Passes 6 of 7 criteria excluding non-negotiable criterion 7	Moderate (2)
Passes 0, 1, 2 or 3 of 7 criteria	Poor (1)

Heathland and shrub - Mixed scrub

1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).	Fail
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	Fail
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species ¹ make up less than 5% of ground cover.	Pass
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	Fail
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Fail

Condition assessment results:	Condition assessment score:
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)

Sparsely vegetated land - Ruderal/ephemeral

1	Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	Fail
2	There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife).	Fail
3	Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	Pass

Condition assessment results:	Condition assessment score:
<ul style="list-style-type: none"> • Passes 3 of 3 core criteria; AND • Meets the requirements for good condition within criteria 2 and 3 	Good (3)
<ul style="list-style-type: none"> • Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for good condition within criteria 2 and 3 	Moderate (2)
<ul style="list-style-type: none"> • Passes 0 or 1 of 3 core criteria 	Poor (1)

Woodland

Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
1	Age distribution of trees ¹	Three age classes present	Two age classes present	One age class present	
2	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ²	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	3
3	Invasive plant species ³	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	3
4	Number of native tree species	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	2
5	Cover of native tree and shrub species	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	1
6	Open space within woodland ⁴	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	2
7	Woodland regeneration ⁵	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	1
8	Tree health	Tree mortality less than 10%, no pests or	11% to 25% mortality and/or crown dieback or low	Greater than 25% tree mortality and or any high risk	2

		diseases and no crown dieback	risk pest or disease present	pest or disease present	
9	Vegetation and ground flora	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	1
10	Woodland vertical structure⁶	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	1
11	Veteran trees⁷	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	1
12	Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	1
13	Woodland disturbance⁸	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	2
Total score:					20

Condition assessment results:	Condition assessment score:
Total score >32 (33 to 39)	Good (3)
Total score 26 to 32	Moderate (2)
Total score <26 (13 to 25)	Poor (1)

Hedgerows.

Hedgerow favourable condition attributes			
Attributes and functional groupings (A, B, C, D & E)	Criteria (the minimum requirements for 'favourable condition'	Description	Pass/fail
Core groups – applicable to all hedgerow types			
A1. Height	>1.5 m average along length	<p>The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.</p> <p>Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> <p>A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height).</p>	Fail
A2. Width	>1.5 m average along length	<p>The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</p> <p>Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height.</p> <p>Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice⁴).</p>	Fail
B1. Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	<p>This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.</p> <p>Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).</p>	Fail
B2. Gap - hedge canopy continuity	<ul style="list-style-type: none"> · Gaps make up <10% of total length and · No canopy gaps >5 m 	<p>This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).</p> <p>Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).</p>	Fail
C1. Undisturbed ground and perennial vegetation	<ul style="list-style-type: none"> >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · measured from 	<p>This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).</p> <p>Access points and gates contribute to the</p>	Pass

	outer edge of hedgerow, and · is present on one side of the hedge (at least)	overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).	
C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (<i>Urtica</i> spp.), cleavers (<i>Galium aparine</i>) and docks (<i>Rumex</i> spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.	Pass
D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.	Pass
D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).	Fail

Condition categories for hedgerows without trees		
Category	Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2	Weighting (score)
Good	No more than 2 failures in total; AND No more than 1 in any functional group.	3
Moderate	No more than 4 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; OR <u>Fails both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1