



LAND OFF LODGE MOOR ROAD.

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PRELIMINARY ECOLOGICAL APPRAISAL.

Ref No: 250430.

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1. INTRODUCTION.

1.1. There are plans to develop the land off Lodge Moor Road, Sheffield. The proposed development plans have been appended to this report.

1.2. Whitcher Wildlife Ltd has been commissioned to carry out a Preliminary Ecological Appraisal of the site to establish whether there are any issues that may affect the proposed works.

1.3. The site survey was carried out on 22nd April 2025. This report outlines the findings of these surveys and makes appropriate recommendations.

1.4. Appendices I to VI of this report provides additional information on specific species and are designed to assist the reader in understanding the contents of this report.

1.5. This report will be accompanied by a statutory metric and condition assessment sheets.

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 UK Habitat Classification methodology to identify the primary habitat types throughout the survey area. All primary habitats are accompanied by secondary codes which are used to add further specific details where necessary. Each primary habitat and unique set off secondary codes will be shown individually in the appended annotated map.

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: -

- * 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.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th 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. All surveys were carried out in line with the Chartered Institute of Ecological and Environmental Management (CIEEM) survey standards and advice.

2.12. 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.

2.13. 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.

2.14. The survey was carried out by Sam White BSc ACIEEM. Sam has had experience in a professional capacity as an Ecologist focusing primarily on survey work for protected species and Phase 1 Habitat surveys. Sam has a BSc in Environmental Conservation from Sheffield Hallam University and Graduated in 2015. Sam joined Whitcher Wildlife Ltd in May 2018 as an Ecological Consultant. Sam holds a survey licence for Great Crested Newts *Triturus cristatus*, a Level 2 Class Licence for Bats and class licence for barn owls *Tyto alba*. Sam holds a Field Identification Skills Certificate (FISC) Level 3, is an Associate Member of the Chartered Institute of Ecology and Environmental Management and is accredited to undertake River Condition Assessment.

3. SURVEY RESULTS.

3.1. Data Search Results.

3.1.1. A data search for existing records of protected species and designated sites within 2km was submitted to Sheffield Biological Records Centre.

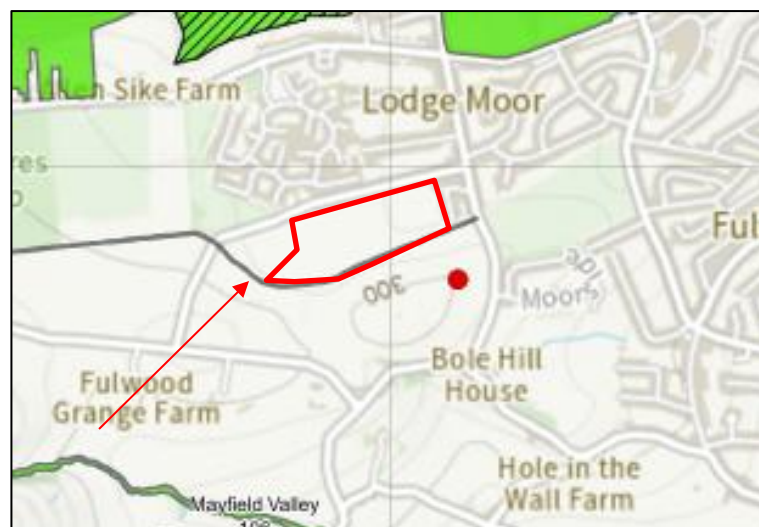
3.1.2. Both the data search and MAGIC website were consulted for information regarding statutory designated sites within 2km of the survey area.

3.1.2.1. The closest statutory designated site to the survey area is Fox Hagg Local Nature Reserve (LNR), located approximately 470m north of the survey area.

3.1.2.2. The survey area lies approximately 1600m to the east of South Pennine Moors Special Area of Conservation (SAC), Special Protection Area (SPA) and the Eastern Peak District Moors Site of Special Scientific Interest (SSSI), which covers the same area.

3.1.2.3. The site falls within Impact Risk Zone 5 of Eastern Peak District Moors SSSI. When using the government tool to assess impacts, the development does not meet the need for further assessment.

3.1.3. The survey area has numerous locally designated sites within the surrounding 2km. The closest of these is Redmires Conduit Local Wildlife Site (LWS), which is approximately 5m south of the survey area, shown below by the red arrow.



3.1.3.1. Other Local Wildlife Sites within 2km of the survey area include:

- Fox Hagg 470m north.
- Fox Hagg Farm 600m north.
- Hampshire Golf Course 370m north.
- Blackbrook Wood 750m north-east.
- Middle Rivelin Valley 1.1km north-east.
- Coppice Wood 1.6km north.
- Forge Dam 1.3km south-east.
- Porter Clough 1.3km south.
- New May House Farm 1.15km south.
- Yarncliffe House Farm 1km south-west.
- Mayfield Valley 950m south-west.

* Distances approximate.

3.1.4. Given the proximity of the site to numerous local wildlife sites, Sheffield Biological Records Centres returned approximately eighteen thousand records of species within 2km. A thorough analysis of these is difficult given the volume of records and that many are only to four figure grid references. These records mainly include common bird and plant species. The records considered relevant have been discussed below.

3.1.5. There are twenty-two recent records of badger within 2km of the survey area. Whilst the records are sensitive information and as such, are not given their exact location within this report, there are two records from 2021 and 2022 notably close to the survey area.

3.1.6. No records of great crested newt were returned by the data search. A single historic record of grass snake was provided along Redmires Conduit, with the record dating from 1980.

3.1.7. There are recent records of toad within Redmires Conduit from 2013. Toads are a priority species listed on Section 41 of the NERC Act 2006.

3.1.8. There are numerous recent records of brown hare and hedgehog, the closest of these are within 100m of the survey area.

3.1.9. The other records within 500m of the site comprise largely of bat species, the majority of which are unidentified. Within the wider area noctule, Leisler's, Natterer's, whiskered, common pipistrelle and soprano pipistrelle have been recorded.

3.1.10. There are historic records of water vole within Redmires Conduit, although these date from 1981.

3.1.11. There are records of common shrew, pygmy shrew and water shrew within 2km of the survey area. All species of shrew are listed on Schedule 6 of the Wildlife and Countryside Act 1981.

3.1.12. Whilst not related directly to the survey area, there are records of several common butterfly species along Redmires Conduit, adjacent to the site, including gatekeeper, peacock and small white amongst others.

3.1.13. The same area also records plant species present along Redmires Conduit, all of which are common species and do not include plants listed on Schedule 8 or 9 of the Wildlife and Countryside Act 1981. Some of these records appear to be within the survey area, although the six figure grid references clearly state that the survey parcel was within Redmires Conduit.

3.1.14. Both lapwing and meadow pipit have been recorded directly within the survey area, although both records are considered historic, dating from 1991 and 1996.

3.1.15. The data search must not be placed into the public domain but may be provided to the client upon request.

3.2. The Survey Area.

3.2.1. The survey area is located in Lodge Moor, Sheffield. The surrounding area comprises grazed grassland, suburban housing and woodland pockets, with Redmires Reservoir to the west.

3.2.2. The aerial photograph below shows the location of the survey area, indicated by the red arrow, and the surrounding area.

3.3. Survey Limitations.

3.3.1. The survey was carried out during an optimum time of year with full access to the survey area.

3.3.2. Adjacent to the survey area, the banks of Redmires Conduit are densely vegetated, which was a limiting factor in the survey for water vole burrows, although it is deemed that field signs would still have been visible.

3.4. Description of Habitats.

3.4.1. Appendix VI of this report contains an annotated map marked up with the varying primary habitats across the site. These are site are listed below, followed by descriptions of each habitat.

- g4 Modified Grassland
- h2a Native Hedgerow
- u1e Built Linear Feature

3.4.2. *g4 Modified Grassland*

Secondary code: 14 scattered rushes, 16 tall forbs, 101 cattle grazed, 200 tree.

3.4.2.1. The majority of the survey area comprises a modified grassland. The grassland has a relatively tussocky sward given the species present, which would not normally grow in such a manner, this is likely due to occasional cattle grazing (no cattle were present during this survey). This is dominated by grasses such as cocksfoot *Dactylis glomerata*, timothy grass *Phleum pratense*, perennial ryegrass *Lolium perenne* and Yorkshire fog *Holcus lanatus*, a full species list is available appended to this report.

3.4.2.2. The condition assessment of this habitat found it to have poor condition, failing the essential criteria of 6 species/m².

3.4.2.3. This grassland has been assessed as modified grassland as it does not pass the majority of criteria under the UKHabs methodology for g3c Other Neutral Grassland, despite not being intensively managed. The four criteria are:

- >20% cover of broadleaved herbs and sedges;
- > 8 species/m²;

- > 1 grass species that is not generally sown for intensive agricultural production (i.e. ryegrass, timothy, cocksfoot, meadow fescue) is at least abundant;
- Cover of ryegrasses and white clover is <30%.

The first three criteria of the above would be failed by the grassland present.



3.4.2.4. A single mature hawthorn *Crataegus monogyna* is present within this habitat, shown below. There is also a 3rd party semi-mature ash *Fraxinus excelsior* overhanging the habitat from the roadside. The ash is assessed as having moderate condition with the hawthorn having good condition, passing all criteria.

3.4.3. h2a Native Hedgerow

Secondary code: 16 tall forbs, 81 ruderal or ephemeral, 517 active management.

3.4.3.1. There is a very small hedgerow present in the south-east of the survey area, shown below. This hedgerow comprises hawthorn *Crataegus monogyna*, privet *Ligustrum* sp. and beech *Fagus sylvatica*.



3.4.3.2. This habitat is assessed as having poor condition, failing five criteria in total.

3.4.4. u1e Built Linear Feature

Secondary code: 114 dry stone wall, 612 fence.

3.4.4.1. Post and wire fences and dry stone walls form both the internal and external boundaries of the survey area.



3.4.4.2. No condition assessment is required for this habitat.

3.5. Description of Fauna.

3.5.1. Whilst the survey area provides suitable habitat for badgers, no badger setts or field signs were found within the survey area.

3.5.2. There are no watercourses within the survey area to provide any habitat for water voles, otters or crayfish. Redmires Conduit is a man made ditch present to the south of the survey area, approximately 4m from the boundary of the survey area.



3.5.2.1. No otter holts or field signs were found to be present along the length of Redmires Conduit adjacent to the survey area.

3.5.2.2. No water vole burrows or field signs were found along Redmire Conduit, although the length of vegetation could be considered a limitation to the survey for water vole. As a note, the conduit is likely to flood in heavy rainfall and dry during droughts, making it less likely for water vole to be present.

3.5.2.3. Given that the conduit is expected to dry somewhat frequently, it is assessed as unsuitable for fresh white clawed crayfish.

3.5.3. A review of Ordnance Survey maps found one pond within 500m of the survey area. In addition, both a drainage ditch and Redmires Conduit are visible on the below map.



3.5.3.1. Both the pond and drainage ditch shown are separated from the site by Brown Hills Road and Blackmoor Road respectively. Whilst country roads would not typically form a barrier to the movement of great crested newts, this close to a city, these roads are considered busy enough to prevent the dispersal of great crested newts.

3.5.3.2. The water within Redmires Conduit was standing during the survey, although this is likely to flow during rainfall, as by definition, the conduit helps feed Redmires reservoir. Additionally, the conduit is likely to dry during the summer most years. With both factors considered, the conduit is considered largely unsuitable for breeding great crested newts.

3.5.3.3. Finally, not shown on the above map is a balancing pond to the north of Lodge Moor Road. This pond firstly is separated from the site by Lodge Moor Road, a barrier to the dispersal of great crested newts. Secondly, all available aerial imagery shows the pond as dry with the pond also not shown on the Ordnance Survey maps.



3.5.3.4. The terrestrial habitat within the survey area is largely sub-optimal for great crested newts, being mostly grazed grassland. Dry stone walls may offer some value as hibernacula, although given the open space needing to be crossed it would be highly unlikely these would be used by the species.

3.5.3.5. Therefore, given the factors considered above, great crested newts are assessed as being absent from the survey area.

3.5.4. There are no buildings or structures within the survey area and therefore, no habitat for roosting bats within buildings. The dry stone walls on the site are considered too low to the ground to be used by roosting bats, leaving individuals completely open to both weather conditions and predation. Therefore, the walls have been assessed as providing negligible potential for roosting bats in accordance with the Bat Conservation Trust Good Practice Guidelines 4th Edition.

3.5.5. The mature hawthorn within the survey area was assessed for potential roost features (PRFs), being of an age where such features may be present. A limb has snapped off of the trunk leaving a small void, which did not extend further into the tree. This feature shown below, could be used by an opportunistic individual bat in extreme

circumstances and therefore, the hawthorn has been assessed as providing PRF-I in line with the Bat Conservation Trust Good Practice Guidelines 4th Edition.

3.5.6. The survey area comprises almost entirely low-lying grassland in an open and exposed environment. This would be considered to be low suitability for foraging and commuting bats in accordance with the Bat Conservation Trust Good Practice Guidelines 4th Edition. Additionally, the grassland is unlikely to support a substantial invertebrate population that could support a significant number of foraging bats.

3.5.6.1. The hedgerow in the south-west of the survey area is also unlikely to be of significant value to foraging bats with poor connectivity and would be more of a continuation of the residential gardens to the north of the hedgerow.

3.5.6.2. Redmires Conduit adjacent to the survey area is more botanically diverse and would be more likely to have an invertebrate population capable of supporting a small number of foraging bats, although vegetation is still generally low-lying.

3.5.7. There is potential for nesting birds within the vegetation of the survey area. This is largely limited to ground nesting birds, although the two scattered trees and hedgerow would also offer above ground nesting opportunities. Lapwing, a ground nesting bird has been recorded historically within the survey area.

3.5.8. The habitat on site is ideal for foraging barn owl, although there are no nesting opportunities directly within the survey area.

3.5.9. The survey area provides suitable habitat for reptile species, with a tussocky sward typical of cattle grazed grassland and nearby watercourse. There is a lack of refugia within the survey area, although limited opportunities are provided by the dry stone walls within the survey area. No reptiles were seen during this survey.

3.5.10. The survey area lies outside the known UK distribution of hazel dormouse and red squirrel and the habitats in the survey area are completely unsuitable for these species.

3.5.11. The site may support hedgehogs, especially given the slightly longer sward left by cattle grazing and connectivity to surrounding gardens. There are abundant records of the species within 2km of the site, including recent records within 100m.

3.5.12. A brown hare was seen in the survey area during the site visit. This confirms the presence of the species.



3.5.13. No non-native, invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 were found during this survey, which was undertaken at the optimal time of year for identifying such species.

4. BIODIVERSITY NET GAIN (BNG).

4.1. Baseline biodiversity calculations have been carried out using the Statutory Metric tool, the current metric at the time of writing this report. The calculations have been completed for habitat units, linear units and watercourse units.

4.1.1. Due to the proximity to Redmires Conduit LWS, all habitats have been identified as in an ecologically desirable location, with the exception of watercourse units, which have been formally identified in the local strategy.

4.2. *Habitat Units.*

The baseline area habitat calculations include all habitats that lie within the red line boundary of the site. The scores for each habitat and a total is shown below.

Habitat Type	Extent (ha)	Distinctiveness	Condition Assessment	Biodiversity units
Modified grassland	7.0348	Low	Poor	15.48
Rural tree	0.0163	Medium	Good	0.22
Rural tree	0.0163	Medium	Moderate	0.14
Total (excl trees)	7.0348			15.84

4.3. *Linear Units.*

The baseline linear units for the hedgerow on site are shown below.

Habitat Type	Extent (km)	Distinctiveness	Condition Assessment	Biodiversity units
Native Hedgerow	0.085	Low	Poor	0.19
Total	0.085			0.19

4.4. *Watercourse Units.*

4.4.1. The survey area does not have any watercourses within the boundary. However, the survey area lies within 5m of Redmires Conduit and therefore, watercourse units must still be entered into the metric.

4.4.2. Redmires Conduit, as a man made drain leading to Redmires Reservoir meets the definition of a ditch and therefore, the condition of the ditch has been assessed on the accompanying condition assessment sheets.

4.4.3. The below shows the baseline watercourse units present. It should be noted that the encroachment is considered Major/Major because of the footpath to the north of the conduit and the grazed grassland to the south, as instructed by the Statutory Metric User Guide.

Habitat	Extent (km)	Distinctiveness	Condition Assessment	Watercourse encroachment	Riparian encroachment	Biodiversity units
Ditch	0.580	Medium	Moderate	None	Major / Major	4.00
Total	0.580					4.00

5. EVALUATION OF FINDINGS.

5.1. The data search found that the survey area is not directly within any designated sites. The site does lie immediately adjacent to Redmires Conduit LWS, approximately 5m to the south. A well-used footpath already separates the Local Wildlife Site from the survey area and the proposed plans maintain a buffer to the south of the site from the LWS. Given the proximity of the works to the conduit, there is potential for some impact through the likes of pollutants, although this could be avoided with mitigation in place.

5.1.1. The proposed works are not expected to have an impact on other designated sites within the surrounding area.

5.2. The survey area comprises typically habitats of low ecological value. Whilst native hedgerow is a priority habitat listed on Section 41 of the NERC Act 2006, in this case the hedgerow has little connectivity and is species poor. The works will not have a negative impact on the ecological value of the site and with a sensitive planting scheme have the opportunity to improve the value of the site.

5.3. The red line boundary extends into the riparian zone of Redmires Conduit. Therefore, there is potential for the works to have a negative impact on the biodiversity value of the ditch.

5.4. No badger setts or evidence of badger was found within the survey area; therefore, the development of the site will have no impact on badger.

5.5. Whilst Redmires Conduit lies adjacent to the site, no evidence of water vole, otter or white clawed crayfish was seen during this survey and the watercourse is already separated from the site by a well-used footpath. Therefore, the proposed works will have no impact on these species if precautions are in place.

5.6. All ponds identified on Ordnance Survey mapping and aerial imagery were separated from the survey area by barriers to the movement of great crested newts, with the exception of Redmires Conduit, which has been assessed as unsuitable for breeding great crested newts. The terrestrial habitat on site is largely sub-optimal for great crested newts. Therefore, the proposed works will have no impact on great crested newts.

5.7. There are no buildings or structures within the survey area that have potential features for roosting bats. Therefore, the proposed works will have no impact on roosting bats within buildings.

5.8. A single mature hawthorn within the survey area has been assessed as being PRF-I in line with the Bat Conservation Trust Good Practice Guidelines 4th Edition, providing opportunities for individual opportunistic bats. Therefore, there is an unlikely possibility of an impact on roosting bats within trees, although this can be avoided with precautions in place.

5.9. Despite being located adjacent to the Redmires Conduit, the site provides low value habitat for foraging and commuting bats. The loss of the habitats on the site are therefore unlikely to have any significant impact on foraging bats providing a sensitive lighting scheme is in place and there will be a likely improvement in foraging habitat provided by linked residential gardens.

5.10. There is potential for nesting birds throughout the vegetation and walls within the survey area throughout the nesting bird season, which extends from March to August inclusive each year. There are records of lapwing, a ground nesting bird, directly within the survey area. Therefore, the works may have an impact on nesting birds if undertaken during the nesting bird season and further surveys will be required to assess the potential impacts on breeding bird populations.

5.11. Given the nature of the surrounding habitat, the proposed development is unlikely to significantly fragment the foraging habitat within the home range of a barn owl. As there are currently no nesting opportunities on the site, the development of the site offers the potential for genuine improvement for barn owls if enhancements are included within the final development plans.

5.12. The site provides suitable habitat for reptile species, in particular grass snake. As the proposed development will remove a large area of potential habitat and there are historic records of the species, further surveys are required to fully assess the impacts of the works on reptile species.

5.13. The site lies outside the known UK distribution of hazel dormouse and red squirrel. Therefore, the proposed works will have no impact on hazel dormouse or red squirrel.

5.14. The survey area may be used by hedgehogs, providing suitable habitat for the species. Therefore, the proposed works may have an impact on hedgehogs if precautions are not in place.

5.15. Brown hare have been identified within the survey area. Whilst the habitat of hare is not protected, the species is protected from harm and therefore, the proposed works may have an impact

5.16. No non-native invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981) were found within the survey area. Therefore, the proposed works will not cause the spread of these species.

6. RECOMMENDATIONS.

6.1. This Preliminary Ecological Appraisal (PEA) report is designed to advise the client of the survey results and baseline Biodiversity Net Gain assessment so that any potential ecological constraints identified can be considered within the site development plan.

6.2. Once plans are finalised and a landscaping plan has been produced and mitigation agreed, this report should be converted into an Ecological Impact Assessment (EcIA), suitable for submission to planning. This will include a finalised Biodiversity Net Gain calculation for the site.

6.3. It is recommended that reptile surveys are undertaken, primarily focusing on the boundaries of each field. In these areas, temporary refugia should be laid out approximately 5m apart and checked during favourable conditions (dry, sunny spells, 10-20°C), between March and September. Seven surveys will be required in total with optimal months being April and September. As such, it is recommended that visits are spread throughout the year to collect the most robust data. The results of the surveys will inform any required mitigation.

6.4. It is recommended that both breeding and wintering bird surveys are undertaken in line with the Bird Survey Guidelines (2021). This requires six visits between March and July. These surveys should extend from sunrise until mid-morning (9-10am) with at least one survey undertaken at dusk. It is key that surveys cover as many months from March to July as possible to collect the most robust survey data. The results of the surveys will inform any required mitigation.

6.5. It is recommended that any vegetation or site clearance works are carried out outside the nesting bird season. If this is not possible, it is recommended that the clearance works are immediately preceded by a nesting bird survey. Any active nests found plus a suitable buffer around them, must be left undisturbed until the young have fledged.

6.6. As a precaution, it is recommended that measures are put in place to ensure no harm is caused to any hedgehogs. This should include the following measures:

- Prior to site clearance, all vegetation should be cut to a minimum of 200mm above ground level and the arisings should be carefully removed from site. This

will encourage any reptiles or hedgehogs at ground level to vacate the area and will deter them from returning.

- Any stored materials on site should be lifted cleanly off the ground and not dragged to avoid any harm to small mammals taking refuge underneath.
- Any clearance of potential refugia, such as grass cuttings or piles or brash should not be undertaken over winter, when the species may be hibernating.

6.7. Regarding the mature hawthorn. It is recommended that this tree is retained, however if the tree must be removed the tree must be soft felled in sections, lowered to the ground and left for 24 hours before being chipped or removed from site.

6.8. It is recommended that a sensitive lighting scheme is incorporated within the development. This should minimise light spill onto surrounding habitats and keep lighting downwards facing at eaves height.

6.9. To prevent harm to any mammals, no excavations should be left open overnight. If necessary, then mammal ramps should be installed to allow mammals to escape unharmed.

6.10. It is recommended that all current pollution prevention guidelines are followed to prevent an impact on Redmires Conduit LWS and no refuelling should occur within 10m of the bank top. If this is not possible, it is recommended that the local council is contacted to discuss the potential impacts of the works.

6.11. Biodiversity Net Gain (BNG).

6.11.1. There is a requirement to provide an overall biodiversity net gain on the site. There will be a statutory requirement to deliver a net gain of at least 10% biodiversity units. This will apply to both the habitat units on the site and the watercourse units. Both of these elements will separately need to deliver a 10% net gain. There will also be a requirement to meet the trading rules of the Statutory Metric.

6.11.2. It is recommended that a landscaping plan is drawn up to reach a 10% net gain in habitat and linear units. The current development plans are unlikely to reach this target without larger areas being provided for planting.

6.11.3. With regard to the watercourse units, these would be best achieved by incorporating a ditch within the survey area, as improving encroachment is not realistic given the proximity of the existing footpath.

6.11.4. It is recommended that a copy of the draft landscaping proposals for the site are provided once they are drawn up so that the biodiversity calculations can be completed.

6.11.5. Once all options have been considered and the provision of BNG on the site has been maximised, offsite compensation will then need to be considered to deliver any shortfalls.

6.11.6. Any habitats that are retained, enhanced or created for the purpose of the biodiversity net gain for the site, will have to be locked into to a thirty-year management and maintenance plan.

6.12. Biodiversity Enhancements.

6.12.1. In addition to ensuring a net gain of biodiversity units is achieved on the site, there will be an expectation to provide some biodiversity enhancements for fauna species on the site.

6.12.2. It is recommended that integrated bat and bird boxes are included in the final design of at least 50% of the buildings to be constructed.

6.12.3. In addition, it is recommended that opportunities for nesting barn owls are created. Ideally, these would be integrated within the loft voids of two properties facing open land. However, if this is not possible a minimum of two barn owl boxes should be erected, again being south facing, over open land.

Prepared by:	
Sam White BSc (Hons), ACIEEM	Date: 19 th May 2025

Checked by:	
Ruth Georgiou BSc MCIEEM	Date: 20 th May 2025

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Appendix I. BAT INFORMATION.

Ecology

There are currently 18 species of bat residing in Britain, 17 of which 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 cills, 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 of 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 II. 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 III. REPTILE INFORMATION.

Ecology

There are five main species of reptile that reside in the UK; Common or Viviparous Lizard (*Lacerta vivipara*); Sand Lizard (*Lacerta agilis*); Slow Worm (*Anguis fragilis*); Grass Snake (*Natrix natrix*) and Adder (*Vipera berus*). The Adder is the only native species that is venomous although this is rarely harmful to humans.

Reptiles occupy a wide range of habitats including woodland, marshes, heathland, moors, sand dunes, hedgerows and bogs. Sand Lizards are confined to moorland and coastal sand dunes where they lay their eggs in the warm sand. The range of the Sand Lizard in the UK is therefore very limited. Slow Worms can be found in a wide variety of habitats throughout Britain and is the most likely reptile to be found in urban and suburban environments.

Maintaining the right body temperature is vital to reptiles' survival. In the morning, they find a warm basking site to heat up their bodies, then later they may move back into the shade because they do not sweat and have to be careful not to overheat. During hot summers, Adders will try to move to damper, cooler sites.

Over winter reptiles will hibernate in burrows or under logs where they are protected from the cold and predators, emerging from February onwards as the weather warms up.

Reptiles generally begin to mate April to May with young born in late July to September. The Common Lizard gives birth to live young, hence the term viviparous, meaning live bearing.

Surveys

Reptile surveys involve the searching of refuge such as logs and stones for any animal sheltering below. Artificial refuge may be laid out on site for the purpose of reptile surveys.

Legislation

Reptiles are protected under Appendix II (sand lizards) and Appendix III (common lizard, slow worms, smooth snake, grass snake and adders) of the BERN Convention (1982), partially protected under Schedule 5 of the Wildlife and Countryside Act (1981), Annex IV of the Habitats Directive and are all listed under section 41 of the Natural Environment and Communities Act (2006) making them a species of principal importance.

This makes it an offence to disturb any reptile while it is occupying a structure or place it uses for shelter or protection or to obstruct access to such a place.

Appendix IV. BARN OWL INFORMATION.

Ecology

The diet of the Barn Owls consists almost entirely of small mammals such as mice, shrews and voles. Consequently, areas of moist, moderately long grassland are especially important for foraging with 90% of prey taken within a 1km radius of the nest site.

Their feathers are specially structured for silent flight and, by using their extremely sensitive hearing, Barn Owls can find and swoop noiselessly onto their prey. Although Barn Owls can see perfectly well in daylight, they tend to hunt mainly at night.

Suitable nest sites are predominantly in derelict buildings such as farm buildings, church towers and old chimneys. Nest sites must be dry and warm to prevent fatal chilling of the owlets in wet weather.

Barn Owls generally produce 4 – 7 eggs, laid at intervals of 2 – 3 days during the breeding season (March to August inclusive). This gives a staggered hatch, with the first hatchling being as much as a week older than the last. In poor prey years the youngest chicks are unlikely to fledge.

Habitat loss due to agricultural change and urbanisation has had the most significant impact on Barn Owl numbers. The drainage of grasslands, increases in cereal crops, autumn sowing, the decline in haymaking, the loss of wild grassland, edge habitats and hedgerows, the vermin proofing of grain storage and the fragmentation of habitats as a result of land take for new roads, factories and housing schemes have all had an influence on the availability of suitable foraging habitat.

This has been compounded by the loss of traditional nest sites as a result of building improvements and conversions for other uses including residential.

As birds are pushed to exploit prey rich roadside verges and railway embankments they increasingly become prone to deaths from collisions with trains and road vehicles. Death can also be caused by consuming prey items which contain residues of rat and mouse poison.

The effects of disturbance are more pronounced at different times of the year. The early stages of the breeding season are the most vulnerable and birds may abandon nest building or even eggs if disturbed. When the eggs have hatched, they tend to tolerate a higher level of disturbance before abandoning young birds in the nest. Generally, disturbance should be avoided between April and September.

Surveys

Walkover surveys will look identify areas of suitable foraging habitat for Barn Owls. They will also look for suitable nesting locations and any signs of pellets within these areas.

Legislation

Barn Owls are protected under Schedule 1 and Schedule 9 of The Wildlife and Countryside Act 1981.

It is therefore an offence to intentionally kill, injure or take any wild bird, take damage or destroy the nest of any wild bird while that nest is in use or being built, or to take or destroy an egg of any wild bird. Special penalties are available for offences related to birds listed on Schedule 1 of The Wildlife and Countryside Act (1981), for which there are additional offences for disturbing these birds at their nests, or their dependent young.

Appendix V. HEDGEHOG INFORMATION.

Ecology

The hedgehog was a common species once widespread throughout the country but it has suffered a major decline due to loss of habitat. They are now found distributed across the UK, but the population increases to the south and east. Hedgehogs are rare in Scotland, Wales and Northern Ireland.

The hedgehog is a small, spiny mammal around 20cm long with a long snout. The back and sides of the hedgehog are covered in 25mm (1”) long spines. These are absent from the face, legs and underside, which are covered with coarse, grey-brown fur.

Hedgehogs are highly active and range widely. They need to be able to move freely through a well-connected range of habitats to find food, mates and areas to nest. Studies show that hedgehogs can travel around 2km in a night in urban areas and 3km a night in rural landscapes. A viable population of urban hedgehogs is thought to need 0.9km² of well-connected habitat.

Hedgehogs nest year-round and produce different types of nest for daytime resting, breeding and hibernation. Daytime nests are a retreat during the active season, and are often temporary, flimsy and found in areas of rough grassland, loose leaf piles or garden vegetation. Breeding nests are made by females and are used to raise young. They tend to be more robust, like hibernation nests. Winter nests can be used for several months to hibernate through periods of cold weather and low food availability. The sturdiest nests rely on medium-sized deciduous leaves and a structure to hold the leaves in place. Bramble patches, log piles and open compost heaps are common locations for breeding and hibernation.

Hedgehogs are omnivores, but the bulk of their diet consists of macro-invertebrates such as beetles, worms, slugs, earwigs, caterpillars and millipedes. In urban areas, supplementary food in the form of cat, dog or formulated hedgehog food can make up a significant part of their diet. Access to water is also very important.

Surveys

Hedgehogs are nocturnal animals, so despite their spiny appearance they are often difficult to find.

All surveys should be conducted between May and November when hedgehogs are active.

Droppings can be found in grassland, farmland and in gardens. The droppings are crinkly, often studded with shiny fragments due to their diet of insects. They are variable in size, 15-50mm long and 8-10mm thick, blue/black in colour and sweet smelling with a hint of linseed oil.

Footprint tunnels and camera traps can also be used to survey for hedgehogs.

Further survey techniques can also be used to survey for hedgehogs, but these require a survey licence to carry out surveys involving trapping and torch or spotlight searches.

Legislation

The hedgehog is considered an endangered species, but it benefits only from general protection under the Wildlife and Countryside Act 1981. They are listed under Schedule 6 of the Act, which makes it illegal to kill, trap or capture wild hedgehogs, with certain methods listed. They are also listed under the Wild Mammals Protection Act (1996), which prohibits cruel treatment of hedgehogs and they are a species of 'principal importance' under the NERC Act, which confers a 'duty of responsibility to public bodies'.

However, none of these deal with the issues that are a threat to the hedgehog. The main threat is the increasing loss of habitat, the increasing traffic on our roads and the increasing use of herbicides, in particular those used to kill garden slugs.

Appendix VI. ANNOTATED MAP OF THE SURVEY AREA.



Site: Lodge Moor Road

Date: 19.05.2025

Reference: 250430

Produced by: Sam White



Appendix VII. SPECIES LISTS.

Modified Grassland	
<i>Scientific Name</i>	<i>Vernacular</i>
<i>Achillea millefolium</i>	Yarrow
<i>Anthriscus sylvestris</i>	Cow Parsley
<i>Arrhenatherum elatius</i>	False Oat-grass
<i>Bellis perennis</i>	Daisy
<i>Dactylis glomerata</i>	Cock's-foot
<i>Deschampsia cespitosa</i>	Tufted Hair-grass
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Juncus inflexus</i>	Hard Rush
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Persicaria maculosa</i>	Redshank
<i>Phleum pratense</i>	Timothy
<i>Pilosella officinarum</i>	Mouse-ear-hawkweed
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Poa annua</i>	Annual Meadowgrass
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Rubus fruticosus</i>	Bramble
<i>Rumex acetosa</i>	Common Sorrel
<i>Rumex crispus</i>	Curled Dock
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Taraxacum sp.</i>	Dandelion
<i>Trifolium repens</i>	White Clover
<i>Urtica dioica</i>	Common Nettle

*Should further surveys be conducted, this table will be updated throughout the works

Appendix VIII. PROPOSED DEVELOPMENT PLAN

