

**Whitcher Wildlife Ltd.
Ecological Consultants.**



**LAND SOUTH OF DONCASTER ROAD,
DARFIELD.**

OS REF: SE 40239 04991.

PRELIMINARY ECOLOGICAL APPRAISAL.

Ref No: 240123/PEA/1.

Date: 27th June 2024.

TABLE OF CONTENTS.

	Page Number
1. INTRODUCTION.	3
2. SURVEY METHODOLOGY.	4
3. SURVEY RESULTS.	7
4. EVALUATION OF FINDINGS.	38
5. RECOMMENDATIONS.	40
6. REFERENCES.	43
Appendix I. NESTING BIRD INFORMATION.	45
Appendix II. BAT INFORMATION.	46
Appendix III. BATS IN TREES INFORMATION.	48
Appendix IV. REPTILE INFORMATION.	50
Appendix V. INVASIVE PLANT SPECIES INFORMATION.	52
Appendix VI. ANNOTATED MAP OF THE SURVEY AREA.	55
Appendix VII. PROPOSED DEVELOPMENT PLAN.	56

1. INTRODUCTION.

1.1. A hybrid planning application is being submitted for the development of a large residential estate to the south of Doncaster Road, within the village of Darfield, Barnsley. The application is for full planning permission within the northern section of the development, known as 'Phase one', and for outline planning permission within the southern section of the site, known as 'Phase two'.

1.2. Whitcher Wildlife Ltd was therefore commissioned to undertake a Preliminary Ecological Appraisal (PEA) to determine the ecological baseline of the site along with identifying any potential issues or requirements for further ecological works.

1.3. The initial PEA was carried out on 17th January 2024, and further surveys have been carried out throughout June 2024 to supplement this. A combination of both the initial survey and these repeat surveys make up the findings of this assessment.

1.4. Details of on site habitats are included within this report, but all condition assessments and Biodiversity Net Gain (BNG) calculations are included within separate reports, which should accompany this PEA. Each BNG report covers a different phase of the development.

1.5. Upon completion of the initial PEA, further surveys were recommended and either ongoing or completed. This report details what has been completed to date, but will also be updated upon completion of the remaining surveys.

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 will be shown individually in the appended annotated map but secondary will not be shown due to issues with scale.

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

2.14. 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.

2.15. 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.

2.16. The Preliminary Ecological Appraisal was undertaken by Mitchel Greenhalgh, Managing Director of Whitcher Wildlife, and an Ecological Consultant with an array of experience in conducting surveys on a variety of flora and fauna in a professional capacity. Mitchel holds a level two Natural England survey licence in respect of both bats and great crested newts, a NatureScot licence in respect of bats and Natural England class licences for various invertebrates. He is also working towards gaining further survey licences. He has attended courses run by CIEEM and the FSC and also holds a BSc in environmental science attained from the University of Leeds. He is an Associate member of CIEEM and he is therefore committed to continuous professional development.

3. SURVEY RESULTS.

3.1. Data Search Results.

3.1.1. A data search request was submitted to the Barnsley Biological Records Centre for records of protected species and the location of designated sites within 2km of the survey area.

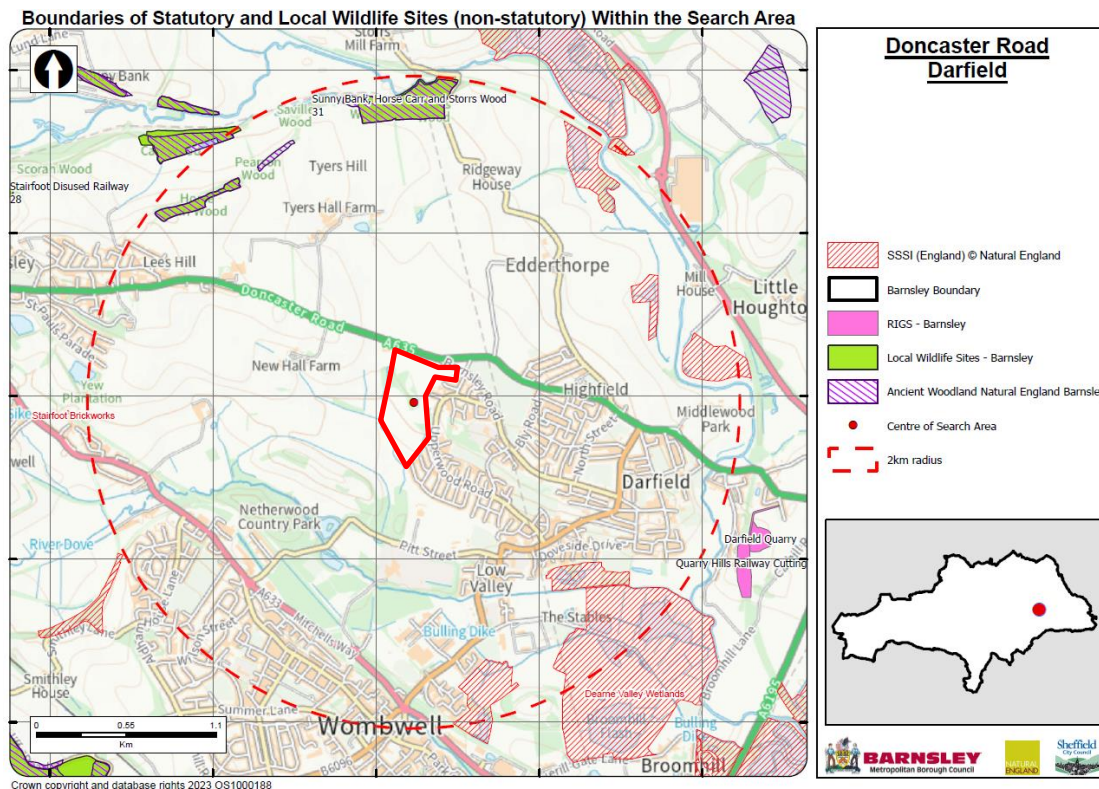
3.1.2. BBRC provided the locations of one series of Local Wildlife Sites (LWS) within a 2km radius, which are Sunny Banks, Horse Carr and Storrs Wood. These sites lie 1.5km northwest of the survey area at their closest point, which is Horse Carr Wood.

3.1.3. Both BBRC and the MAGIC Map website provided the location of statutory sites within a 2km radius. Two such sites are present, although one of these is the Dearne Valley Wetlands Site of Special Scientific Interest, which covers a number of individual sites, including Houghton (unit 06), Little Houghton (07), Doveside (08), Parkhill (09), Wombwell Ings (10), Broomhill Flash (11) and Wombwell Railway Woodland (20). The Dearne Valley Wetlands are primarily designated for their breeding bird assemblages. Each of these sites lie in excess of 1km from the survey area.

3.1.4. The remaining statutory designated site is Stairfoot Brickworks SSSI, which lies approximately 1.8km to the west of the survey area. This site is designated for its geological value.

3.1.5. The MAGIC Map was checked to determine whether the site lies within a risk zone of any designated site. It appears that the site lies within risk zone four of the Dearne Valley Wetlands SSSI, but as the development will be located within an existing urban settlement, it does not meet the criteria to deem consultation with Natural England necessary.

3.1.6. BBRC provided the below map showing the proximity of the survey area to the designated sites mentioned above.



3.1.7. BBRC returned two records of great crested newts, but these relate to ponds within the old Houghton Main Colliery site, over 1.5km north of the survey area.

3.1.8. BBRC returned a small number of records of reptile. These also relate to either the old Houghton Main Colliery site, or to Parkhill. All records are over 1.5km from the survey area.

3.1.9. BBRC returned four records of otter, three of which relate to the river Dearne, near to the river Bridge at Millhouses, and the other relates to Wombwell Ings. All records are over 1.6km from the survey area.

3.1.10. BBRC returned a single record of badger. The exact location of this record is not included here due to its sensitivity, but it does not lie within 1km of the survey area.

3.1.11. BBRC provided numerous records of water vole, although none of these are more recent than a 2010 record within Wombwell Ings. The closest record is from 2001, and from within the river Dove as it flows through Netherwood Country Park approximately 700m southwest of the survey area.

3.1.12. BBRC provided numerous records of common bat species, including common and soprano pipistrelle, Daubenton's bat and noctule. Only one of these is within a

500m radius of the survey area, which is a record of common pipistrelle from Lugano Grove, approximately 130m east of the survey area.

3.1.13. BBRC also provided a small number of records of other Biodiversity Action Plan (BAP) mammal species within a 2km radius, including five records of harvest mouse, and individual records of both hedgehog and brown hare. None of these records are within 1km of the survey area.

3.1.14. Given the proximity of the site to the Dearne Valley Wetlands, BBRC inevitably returned a huge number of records, almost thirteen thousand. A thorough analysis of these is difficult given the sheer volume of them and that most are only to four figure grid references, but effort was made to filter them to a relevant level using key words such as 'Darfield', 'New Hall Farm' and 'Doncaster Road' etc. No records appear to relate to the site directly, but numerous more common species have been recorded in the area.

3.1.15. BBRC returned a small number of BAP insect species, including small heath and wall butterfly and cinnabar and but none of these are relevant to the survey area.

3.1.16. BBRC returned records of bluebell, a schedule 8 plant species, from within the survey area.

3.1.17. The South Yorkshire Badger Group were contacted in relation to a previous proposal in the area and they hold no records relevant to the survey area other than an unconfirmed record of a sett approximately 650m west of the survey area in the area of Lower Laithes and New Hall Farm.

3.1.18. The South Yorkshire Bat Group hold two further records close to the survey area, which are a 1999 record from Genoa Close, and a 1989 record from Sorrento Way. An updated request has been made to the bat group but not yet received. This report will be updated upon its receipt.

3.2. The Survey Area.

3.2.1. The survey area comprises mainly arable land, separated into two main fields, and a further parcel to the south. It is located to the west of the north end of the village of Darfield, south of Doncaster Road and west of Upperwood Road and the 'Italian' estate.

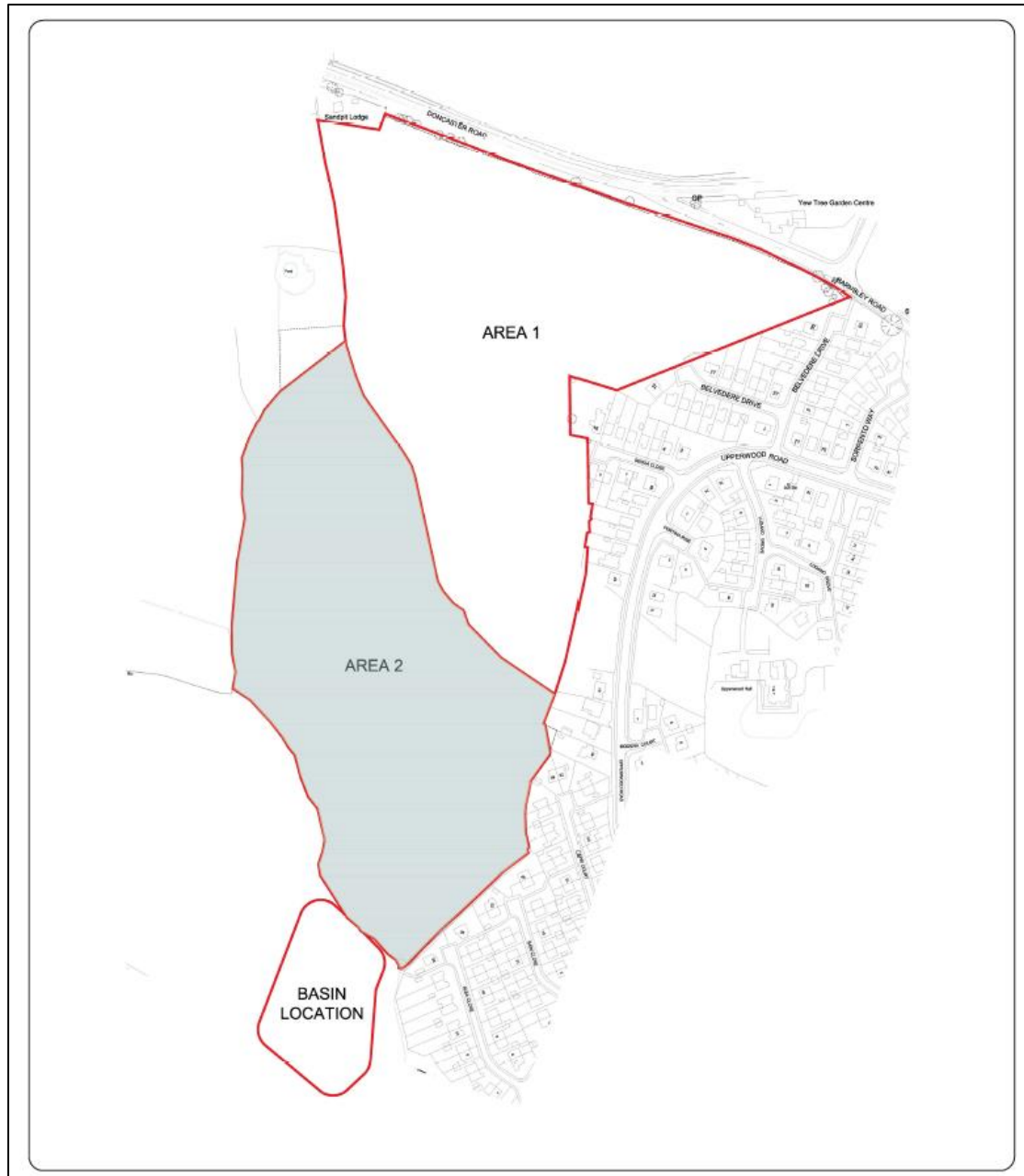
3.2.2. Historic aerial imagery and maps show that the bulk of the site has been arable for a considerable length of time, having never been shown as land used for any other purpose.

3.2.3. However, within the centre of the site is the old Darfield Quarry, which was then used as a landfill for a number of years before being capped and left undisturbed.

3.2.4. The aerial map below shows the approximate location of the survey area, marked by the red shape.



3.2.5. In addition to the above, a basin location is also proposed to the south of the development, and that area is also included within this report. This is shown in the below drawing.



3.2.6. The further surroundings comprise predominantly further arable land, residential housing estates, and scattered woodland and grassland pockets.

3.2.7. Limitations.

3.2.7.1. The original survey was completed outside of the optimum survey season. Therefore, all findings in relation to habitats and condition assessments were preliminary only in the original report.

3.2.7.2. A repeat survey has now been carried out within the optimal survey season, from the 19th to 25th June 2024. This report takes account of these updated surveys, and all habitat descriptions and condition assessments are considered final.

3.2.7.3. Some of the dense scrub within the centre of the survey area was thorny and impenetrable and therefore best assessments of the habitats have been made on the areas which could be accessed. This remains the case even after the resurvey.

3.3. Description of Habitats.

3.3.1. Appendix V of this report contains an annotated map marked up with the varying habitats within the site and is cross referenced to target notes listed in Appendix VI. The habitats on the site are: -

- c1c – Cereal Crops
- g4 – Modified Grassland
- g3c – Other Neutral Grassland
- w1f7 – Other Lowland Mixed Deciduous Woodland
- h3h – Mixed Scrub
- h3d – Bramble Scrub
- h2a5 – Species-rich Native Hedgerow
- r1g – Other Standing Water
- r2 – Other Rivers and Streams

3.3.2. c1c – Cereal Crops.

Secondary codes: 516 active management.

3.3.2.1. The majority of the site is made up by the two large arable fields within the survey area. The photographs below show the northern field on the left hand side, and the southern field on the right hand side.



3.3.2.2. The southern part of this field is also considered to be arable, but the crop appears to have failed, and likely does so consistently. This area of the site is nominated by black grass (*Alopecurus myosuroides*), with some other arable weeds present.



3.3.2.3. Secondary codes: 517 recent management.

Within the proposed basin location, to the west of the footpath, is a parcel of land which has been cropped in the past but at present is barren with arable weeds. To the further south and west, a barley crop is present within the field.



3.3.3. g4 – Modified Grassland.

3.3.3.1. At the northern and northwestern end of the survey area, there is an area of grassland that is left uncropped and contains a species-poor sward. The dominant species within the habitat is Yorkshire fog (*Holcus lanatus*), which is accompanied by cocksfoot (*Dactylis glomerata*), timothy (*Phleum pratense*), rough meadow grass (*Poa trivialis*), perennial rye grass (*Lolium perenne*), Italian rye grass (*Lolium multiflorum*), false oat grass (*Arrhenatherum elatius*) and barren brome (*Anisantha sterilis*). Forbs such as creeping thistle (*Cirsium arvense*) and common poppy (*Papaver rhoeas*) are also present but rare within the habitat.



3.3.4. g3c – Other Neutral Grassland.

3.3.4.1. Secondary codes: 10 scattered scrub, 104 other grazed. – **ONG1**.

3.3.4.1.1. Within the old tip area of the site, there are still some relatively open areas which remain as grassland, although likely not for much longer as the scrub is encroaching heavily. The sward is short in places, likely due to rabbit grazing, but this varies across the habitat parcel.

3.3.4.1.2. Species composition varies throughout the habitat but is generally diverse and includes the following species: red fescue (*Festuca rubra* agg.), false oat grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), annual meadow grass (*Poa annua*), rough meadow grass (*Poa trivialis*), meadow foxtail (*Alopecurus pratensis*), creeping bent (*Agrostis stolonifera*), common knapweed (*Centaurea nigra*), weld (*Reseda luteola*), biting stonecrop (*Sedum acre*), ragwort (*Jacobaea vulgaris*), nettle (*Urtica dioica*), common vetch (*Vicia sativa*), rosebay willowherb (*Chamaenerion angustifolium*), mugwort (*Artemisia vulgaris*), creeping cinquefoil (*Potentilla reptans*), tansy (*Tanacetum vulgare*), feverfew (*Tanacetum parthenium*), false fox sedge (*Carex otrubae*), black medick (*Medicago lupulina*), bird's foot trefoil (*Lotus corniculatus*), hogweed (*Heracleum sphondylium*), cleavers (*Galium aparine*), hedge bedstraw (*Galium album*), cutleaf cranesbill (*Geranium dissectum*), dove's foot cranesbill (*Geranium molle*), hedgerow cranesbill (*Geranium pyrenaicum*), meadow cranesbill (*Geranium pratense*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), lesser trefoil (*Trifolium dubium*), smooth hawkbeard (*Crepis capillaris*), white campion (*Silene latifolia*), lesser burdock (*Arctium minus*), teasel (*Dipsacus fullonum*), broadleaved dock (*Rumex obtusifolius*), willowherbs (*Epilobium* spp.), toad rush (*Juncus bufonius*), sheep's sorrel (*Rumex acetosella*), broadleaved plantain (*Plantago major*), ribwort plantain (*Plantago lanceolata*), common centaury (*Centaureum erythraea*), common mouse-ear (*Cerastium fontanum*), red bartsia (*Odontites vernus*), ox-eye daisy (*Leucanthemum vulgare*), creeping buttercup (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*), creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), black horehound (*Ballota nigra*), early forget-me-not (*Myosotis ramosissima*), field forget-me-not (*Myosotis arvensis*), wood forget-me-not (*Myosotis sylvatica*), hemlock (*Conium maculatum*), yarrow (*Achillea millefolium*) and ground ivy (*Glechoma hederacea*).



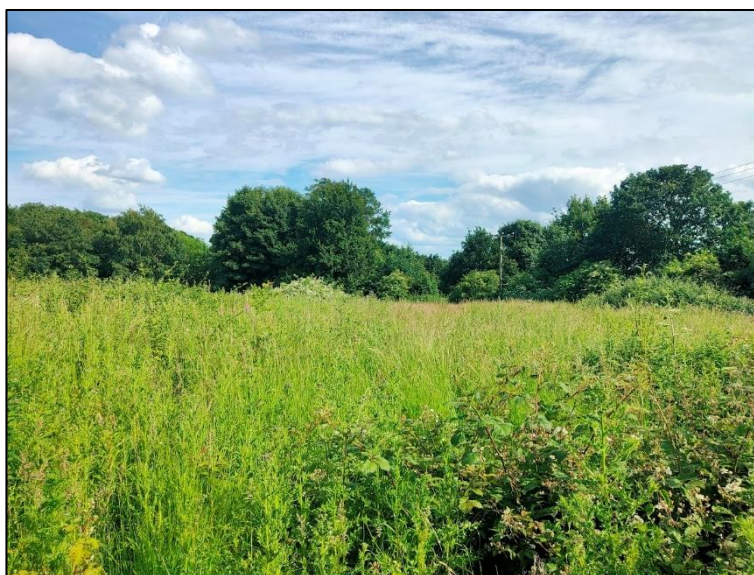
3.3.4.1.3. The scrub within this grassland is taking over the habitat, with open grassland extremely limited. Without any management, the site is likely to succeed to scrub within the coming years regardless of the development.

3.3.4.1.4. The scrub is described further on in this report, but within the grassland, species typically include Japanese knotweed (*Reynoutria japonica*), Japanese rose (*Rosa rugosa*), dog rose (*Rosa canina*), sweetbriar (*Rosa rubiginosa*), *Rubus* spp., including *R. armeniacus* and *R. Caesius*, hawthorn (*Crataegus monogyna*), sycamore (*Acer pseudoplatanus*), crab apple (*Malus sylvestris*), gorse (*Ulex europeaus*), whitebeam (*Sorbus aria*), plum (*Prunus domestica*) and bracken (*Pteridium aquilinum*).



3.3.4.2. Secondary codes: 10 scattered scrub, 128 tall or tussocky sward. – **ONG2.**

Just south of the grassland described above, is a parcel of rank grassland that has a taller sward. This was also being heavily encroached upon by scrub and included species such as Yorkshire Fog (*Holcus lanatus*), false oat grass (*Arrhenatherum elatius*), curled dock (*Rumex crispus*) creeping thistle (*Cirsium arvense*), rosebay willowherb (*Chamerion angustifolium*), nettle (*Urtica dioica*) and common poppy (*Papaver rhoeas*). The scrub within this habitat comprises mainly bramble (*Rubus* sp.), gorse (*Ulex europeaus*), hawthorn (*Crataegus monogyna*) and oak (*Quercus robur*) saplings.



3.3.4.3. Secondary codes: 10 scattered scrub – **ONG3.**

To the south of the arable field but north of the watercourse, there is a grass margin which comprises a mixture of coarse grasses, tall forbs and typical riparian species. These include reed canary grass (*Phalaris arundinacea*), false oat grass (*Arrhenatherum elatius*), soft brome (*Bromus hordeaceus*), timothy (*Phleum pratense*), Yorkshire fog (*Holcus lanatus*), perennial rye grass (*Lolium perenne*), cocksfoot (*Dactylis glomerata*), rough meadow grass (*Poa trivialis*), great willowherb (*Epilobium hirsutum*), marsh woundwort (*Stachys palustris*), nettle (*Urtica dioica*), creeping thistle (*Cirsium arvense*), teasel (*Dipsacus fullonum*), southern marsh orchid (*Dactylorhiza praetermissa*), meadowsweet (*Filipendula ulmaria*), bristly oxtongue (*Helminthotheca echinoides*), hogweed (*Heracleum sphondylium*), broadleaved dock (*Rumex obtusifolius*) and ragwort (*Jacobaea vulgaris*). Bramble (*Rubus* sp.) is frequent within this habitat.



3.3.4.4. Secondary codes: 10 scattered scrub, 104 other grazed. – **ONG4.**

Around the perimeter of the southern field, just south of the ditch is a grass margin which sits between the woodland and arable field. It is relatively species poor, with its grasses finely grazed by rabbits. Species include fescue (*Festuca* sp.), false oat grass (*Arrhenatherum elatius*), creeping bent (*Agrostis stolonifera*), Yorkshire fog (*Holcus lanatus*), creeping thistle (*Cirsium arvense*), willowherbs (*Epilobium* spp.), selfheal (*Prunella vulgaris*), toad rush (*Juncus bufonius*), ragwort (*Jacobaea vulgaris*), smooth sow thistle (*Sonchus oleraceus*), white clover (*Trifolium repens*), black medick (*Medicago lupulina*) and a solitary southern marsh orchid (*Dactylorhiza praetermissa*). Bramble (*Rubus* sp.) is becoming dominant within this habitat.



3.3.4.5. Secondary codes: 128 tall or tussocky sward. – **ONG5.**

Within the proposed basin area to the east of the footpath, is a grassland with a tall sward dominated by coarse grasses. Species include false oat grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), common knapweed (*Centaurea nigra*), white campion (*Silene latifolia*), red campion (*Silene dioica*), great willowherb (*Epilobium hirsutum*), creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), curled dock (*Rumex crispus*), broadleaved dock (*Rumex obtusifolius*), sorrel (*Rumex acetosa*), cleavers (*Galium aparine*), common field speedwell (*Veronica persica*), mugwort (*Artemisia vulgaris*) and dandelion (*Taraxacum officinale* agg.).



3.3.4.6. Secondary codes: 10 scattered scrub – **ONG6**.

The grassland along the eastern boundary of phase two and just south of W4 comprises a ranker and less diverse sward than the above. It comprises false oat grass (*Arrhenatherum elatius*), Yorkshire fog (*Holcus lanatus*), timothy (*Phleum pratense*), creeping bent (*Agrostis stolonifera*), rough meadow grass (*Poa trivialis*), soft brome (*Bromus hordeaceus*), Italian rye grass (*Lolium multiflorum*), bristly oxtongue (*Helminthotheca echioides*), great willowherb (*Epilobium hirsutum*) and hogweed (*Heracleum sphondylium*).



3.3.5. w1f7 – Other Lowland Mixed Deciduous Woodland

3.3.5.1. Secondary codes: 12 scattered bracken, 60 long continuity habitat. – **W1**.

3.3.5.1.1. To the northwest of the survey area, there is a section of mature woodland which is shown on historic maps from at least the mid-1800s, although smaller than it is now. Its age is evident as the size of the trees indicate it has been present for some time.

3.3.5.1.2. Species generally comprise sycamore (*Acer pseudoplatanus*), which is the dominant species, field maple (*Acer campestre*), oak (*Quercus robur*), and crack willow (*Salix fragilis*), with smaller species such as elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*) and hazel (*Corylus avellana*) also present. The understory comprises bluebells (*Hyacinthoides non-scripta*), bracken (*Pteridium aquilinum*), nettle (*Urtica dioica*), willowherbs (*Epilobium* spp.) and foxglove (*Digitalis purpurea*). Bittersweet (*Solanum dulcamara*) and creeping Jenny (*Lysimachia nummularia*) are present with the damper flushes.

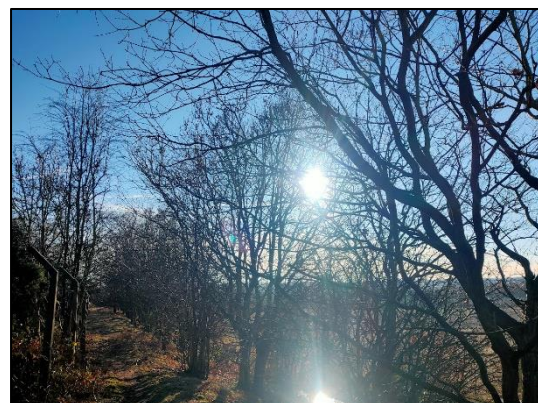


3.3.5.1.3. Just outside the survey area, the ground flattens and becomes wetter. Here, crack willow (*Salix fragilis*) is the dominant species, accompanied by silver birch (*Betula pendula*) and alder (*Alnus glutinosa*).

3.3.5.1.4. This woodland is covered by a grouped Tree Preservation Order (TPO).

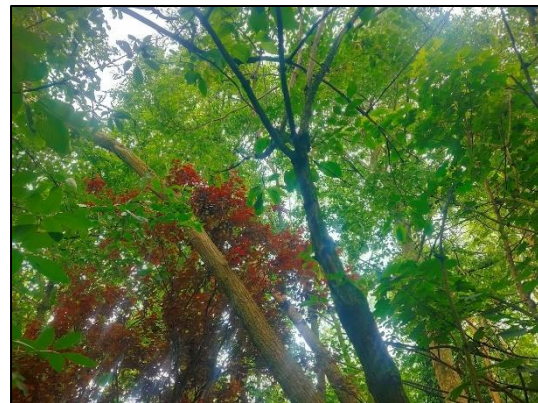
3.3.5.2. Secondary codes: 10 scattered scrub, 528 walking or cycling route. – **W2**.

Extending southwards from W1 described above, is further woodland that is evidently younger. Oak (*Quercus robur*) is the dominant species here. Tree density here is lower and the trees are largely immature or semi-mature. A footpath runs through this section of woodland.



3.3.5.3. Secondary codes: 10 scattered scrub, 31 secondary woodland. – **W3**.

There is a small section of woodland which has established within a triangle of land, south of Darfield Garden Centre. Tree species include sycamore (*Acer pseudoplatanus*), oak (*Quercus robur*), buckthorn (*Rhamnus cathartica*), elder (*Sambucus nigra*), lime (*Tilia* sp.), hazel (*Corylus avellana*) and crack willow (*Salix fragilis*), with understory species comprising sea buckthorn (*Hippophae rhamnoides*), bramble (*Rubus* sp.), holly (*Ilex aquifolium*), deutzia (*Deutzia scabra*), cuckoo pint (*Arum maculatum*), nettle (*Urtica dioica*), honeysuckle (*Lonicera periclymenum*), rose (*Rosa* sp.), dogwood (*Cornus* sp.) and garlic mustard (*Alliaria petiolata*). Many trees have a sparse covering of ivy (*Hedera helix*).



3.3.5.4. Secondary codes: 10 scattered scrub, 12 scattered bracken. 60 long continuity habitat. – **W4**.

3.3.5.4.1. Within the centre of the site, extending from the eastern boundary inwards is another large parcel of woodland. This again shows on historic maps and has therefore been present for some time. This woodland has a dense scrubby understory within its southern section, but is sparser on the east towards Upperwood road, likely reflecting the difference in public accessibility. The woodland comprises oak (*Quercus robur*), sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*), lime (*Tilia* sp.), hawthorn (*Crataegus monogyna*) and small amounts of yew (*Taxus baccata*). The understory comprises bramble (*Rubus* sp.), holly (*Ilex aquifolium*), elder (*Sambucus nigra*), wild cherry (*Prunus avium*) saplings, bracken (*Pteridium aquilinum*), wood millet (*Milium effusum*), ivy (*Hedera helix*), cleavers (*Galium aparine*) and daffodils (*Narcissus* sp.). One of the hawthorns within this woodland is classed as a veteran tree.



3.3.5.4.2. Selected trees within this woodland are covered by TPOs.

3.3.5.5. Secondary codes: 33 line of trees.

There are numerous individual lines of trees within phase one. The first of these, known as **LOT1**, is a row of mostly cherry (*Prunus avium*) trees which form part of the northwestern boundary, between the site and neighbouring field. Hawthorn (*Crataegus monogyna*) is also frequent.



3.3.5.6. Secondary codes: 34 Ecologically valuable line of trees.

3.3.5.6.1. The second, known as **LOT2**, is a line of deciduous trees that form part of the woodland to the west of the survey. This line of trees includes oak (*Quercus robur*), hawthorn (*Crataegus monogyna*), cherry (*Prunus avium*), sycamore (*Acer pseudoplatanus*) and elder (*Sambucus nigra*).



3.3.5.6.2.. The only line of trees (**LOT3**) within phase two is a row of mature willows (*Salix* spp.) and oaks (*Quercus robur*) which run along the western boundary of the southern field. Some of the oaks are of considerable size.



3.3.5.6.4. The fourth and final, known as **LOT4**, is a line of trees which extends around the eastern perimeter of the old tip. It comprises seventeen sycamore (*Acer pseudoplatanus*), twelve hawthorn (*Crataegus monogyna*), five silver birch (*Betula*

pendula), four crab apple (*Malus sylvestris*), four ash (*Fraxinus excelsior*), three oak (*Quercus robur*) and two whitebeam (*Sorbus aria*).



3.3.5.6.5. A final line of trees, known as **LOT5**, is located at the north of the old tip and comprises purely sycamore (*Acer pseudoplatanus*).

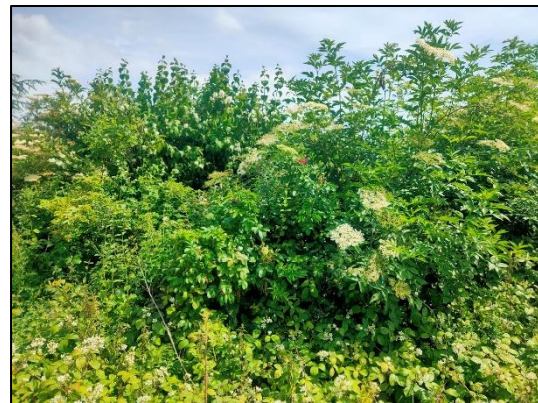


3.3.6. h3h - Mixed Scrub.

3.3.6.1. Secondary codes: 524 invasive non-native species. – **S1**.

3.3.6.1.1. The largest section of scrub is located within the old tip area and dominates much of the centre of the site. This section of scrub is varied in its maturity and species composition, but it is difficult to separate into smaller parcels.

3.3.6.1.2. Species present within this scrub include species described before in ONG1, along with elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*), buddleia (*Buddleja davidii*), oak (*Quercus robur*) saplings, willow-leaved cotoneaster (*Cotoneaster salicifolius*), elder (*Sambucus nigra*) and silver birch (*Betula pendula*) along with an understory of a variety of species previously described in ONG1.



3.3.6.2. Secondary codes: None - **S2**.

A smaller parcel of dense scrub is present between the southern arable field and the woodlands. Species within this include gorse (*Ulex europeaus*), broom (*Cytisus scoparius*), bramble (*Rubus* sp.), oak (*Quercus robur*), turkey oak (*Quercus cerris*) and elder (*Sambucus nigra*).



3.3.6.3 Secondary codes: 532 scattered grass – **S3**.

Up the western side of phase two, beneath the line of trees described above and extending eastwards is dense scrub with ruderals and grasses. Species include predominantly bramble (*Rubus* sp.) and willows (*Salix* spp.). Other species include a mixture of this described in ONG3.

3.3.7. h3d – **Bramble Scrub.**

Secondary codes: None – S4.

To the northeast of phase two, southeast of W4, is a fringe of bramble scrub.



3.3.8. h2a5 – **Species-rich Native Hedgerow.**

3.3.8.1. Secondary codes: 317 recent management. – **H1**.

3.3.8.1.1. The longest hedgerow on site is the one that comprises most of the northern and lies between the survey area and Barnsley Road / Doncaster Road. This hedgerow comprises hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), wild cherry (*Prunus avium*), wych elm (*Ulmus glabra*), hazel (*Corylus avellana*) and elder (*Sambucus nigra*). Leading along Barnsley Road, species-richness reduces as it becomes predominantly hawthorn.



3.3.8.1.2. The understorey of the hedgerow comprises false oat grass (*Arrhenatherum elatius*), rough meadow grass (*Poa trivialis*), cocksfoot (*Dactylis glomerata*), barren brome (*Anisantha sterilis*), creeping thistle (*Cirsium arvense*), dog's mercury (*Mercurialis perennis*), nettle (*Urtica dioica*), yarrow (*Achillea millefolium*), common vetch (*Vicia sativa*), hogweed (*Heracleum sphondylium*), hemlock (*Conium maculatum*), garlic mustard (*Alliaria petiolata*), mugwort (*Artemisia vulgaris*) and broadleaved dock (*Rumex obtusifolius*).

3.3.8.2. Secondary codes: 11 hedgerow with trees, 317 recent management. – **H2**.

As the above hedgerow extends westwards along Doncaster Road, mature trees become more frequent. Hawthorn (*Crataegus monogyna*) is the dominant hedgerow species with five sycamore (*Acer pseudoplatanus*) and individual ash (*Fraxinus excelsior*) and lime (*Tilia* sp.) trees present within.

3.3.8.3. Other hedgerows make up the boundary of the site, particularly along the northeastern section of the survey area, but these all appear to belong to the residents of the neighbouring houses and comprise largely ornamental species. Example photographs of these are shown below.



3.3.9. r1b – Other Standing Water.

Secondary codes: 50 ditch.

A ditch, which lies just north and east of the boundary between much of phase one and phase two, begins to the south of W1. Some sections are almost dry whilst others hold approximately 50cm of water. The resurvey in summer found it to be almost totally dry. The ditch varies in its width throughout the site.



3.3.10. r2 – Other Rivers and Streams.

Secondary codes: None.

Leading down from the woodland pond, along the west of W1, and then down the western boundary of the field, is a very small watercourse. During both surveys it held only a very small amount of water and during the summer survey was heavily overgrown by vegetation, only being barely visible at crossing points.



3.4. Description of Fauna.

3.4.1. The site does provide suitable foraging habitat for badgers, but no badger setts or other field signs were identified within the survey, although a number of large rabbit warrens were identified within the line of trees of the northwest of the survey area and within W1. These have good sized spoil heaps and entrances but all tunnel systems narrow very quickly. Rabbit droppings are also present around all of these.

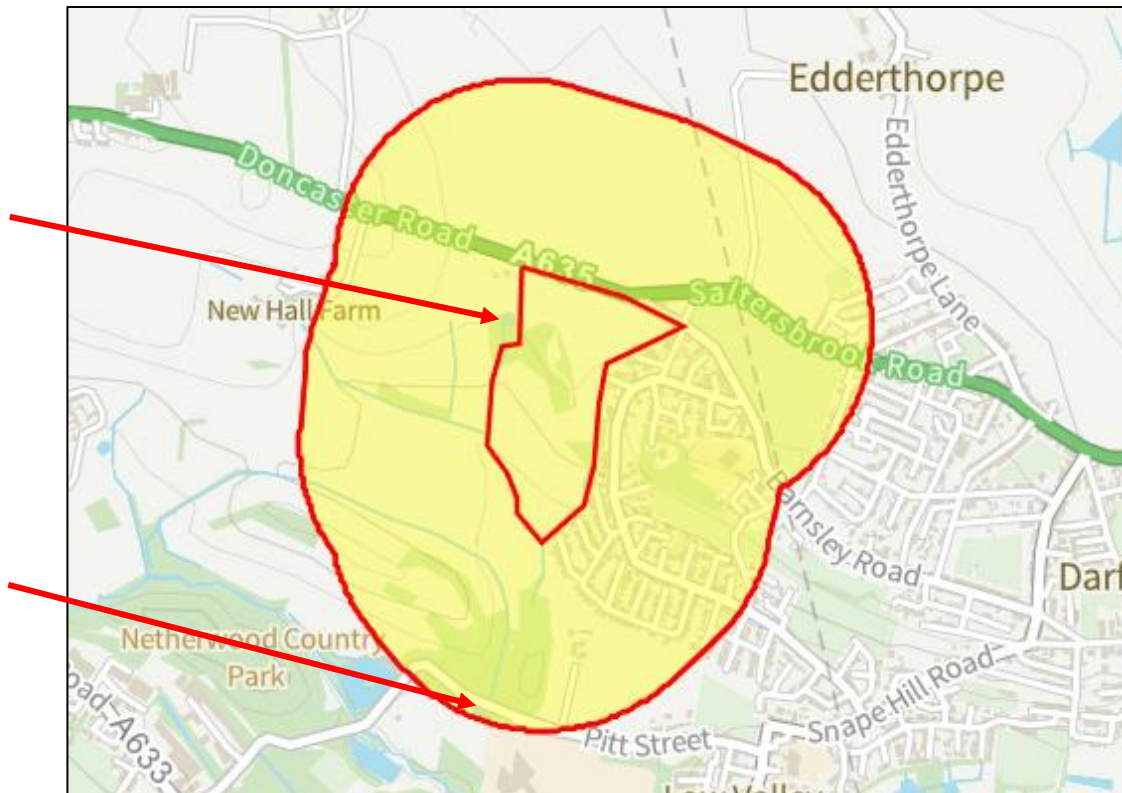


3.4.2. The only watercourse within the survey area is the ditch which runs the perimeter of much of the southern field. This provides no suitable habitat for otter or white-clawed crayfish but could provide a small level of opportunity for water vole. However, no field signs such as burrows or latrines were identified during the survey and considering no water vole have been recorded within a 2km radius since 2010, their presence on site is considered very unlikely.

3.4.3. Great Crested Newts.

3.4.3.1. Two ponds are present within a 500m radius of the site and these are shown in map below. The first of these is located within W1, but outside the red line boundary,

approximately 40m from the survey area and the second is located just short of 500m south of the survey area, south of Netherwood Road, just northwest of Netherwood School.



3.4.3.2. The first pond within W1 was inspected during the first survey to allow for a Habitat Suitability Index (HSI) assessment to be carried out. Some questions were not possible to answer due to the pond being frozen at the time of the survey, so best estimates have been made using old photographs of the pond. The pond returned a HSI score of 0.82, indicating that it has excellent suitability for great crested newts. Using professional judgement, that score is likely to overstate the likelihood of great crested newts being present, as the pond is very isolated and no records are present close to the site but the pond certainly does provide suitable habitat.

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	1
3	Pond permanence	0.9
4	Water quality	0.67
5	Shade	1
6	Water fowl effect	1
7	Fish presence	1
8	Pond Density	0.45

9	Terrestrial habitat	1
10	Macrophyte cover	0.5
HSI Score		0.82

3.4.3.3. Photographs of the pond are shown below. The top two show the pond during the first survey, and the bottom two show the pond during a subsequent eDNA survey undertaken in mid-June.



3.4.3.4. As the pond was identified as having excellent suitability for great crested newts, an eDNA survey was recommended and subsequently carried out on the 18th June 2024. This returned a negative result for great crested newts as shown below.

Results						
Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
5402	Doncaster Road	SE4008405154	Pass	Pass	Negative	0/12

3.4.3.5. During the eDNA survey, a number of froglets were identified around the pond margin, indicating that common amphibians are breeding successfully within.

3.4.3.6. The second pond is located almost 500m south of the survey and lies the opposite side of Netherwood Road which is likely to act as a barrier to movement. Even if newts did cross the road, the likelihood of them reaching the survey area, considering the distance and amount of other suitable habitat between the pond and the survey area, is extremely low. Therefore, this pond is given no further consideration.

3.4.4. Bats.

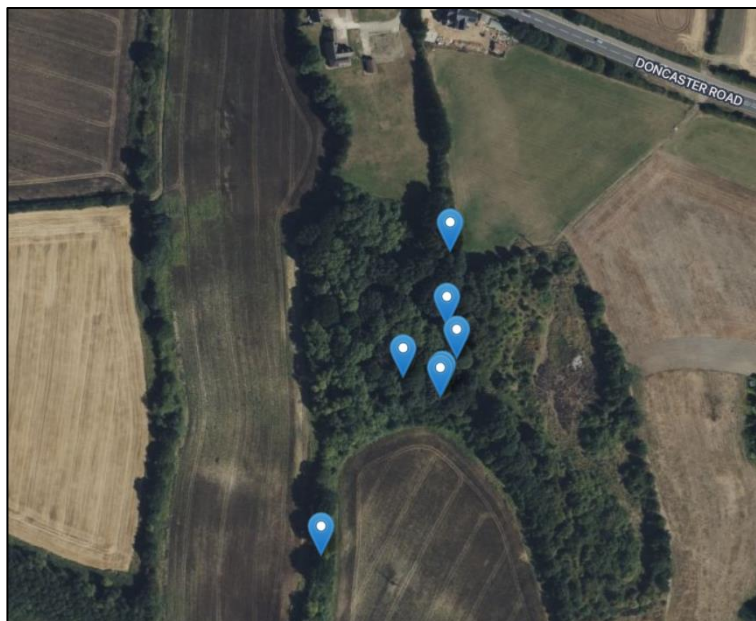
3.4.4.1. There are no buildings within the survey area to provide suitable habitat for roosting bats, but there are a number of trees with potential roost features. A list of these is given below.

Description	Grid Ref
T1 - Huge dead oak which has previously fell but a significant portion of trunk remains. Trunk has numerous features and dense ivy.	SE 40124 05152.
T2 – Mature crack willow with significant crack within the smaller of the main stems.	SE 40122 05104
T3 – Sycamore with two significant defects within trunk.	SE 40129 05082
T4 – Sycamore with one significant feature within dead side branch.	SE 40118 05058
T5 – Oak with a number of defects within upper trunk.	SE 40120 05060
T6 – Sycamore with significant defect from a snapped limb.	SE 40094 05070
T7 – Oak with defect within warped stem.	SE 40042 04954

3.4.4.2. Examples of these features are shown within the photographs below. Each of these trees are assessed as PRF-M as from ground level, their features appear to offer potential for multiple bats.



3.4.4.3. A map showing the locations of these trees in relation to the survey area is shown below.



3.4.4.4. The large expanses of arable land within the survey area provide minimal suitable habitat for foraging and commuting bats, but the woodlands, scrub and boundary vegetation provide much higher suitability and are well connected to other hedgerows around the area.

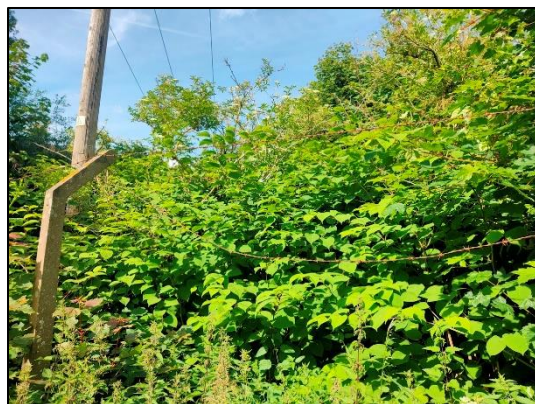
3.4.5. The survey area provides good opportunities for nesting birds within the main area of the site, especially within the woodland, scrub and boundary hedgerows. The fields may also provide some suitable habitat for arable nesting species.

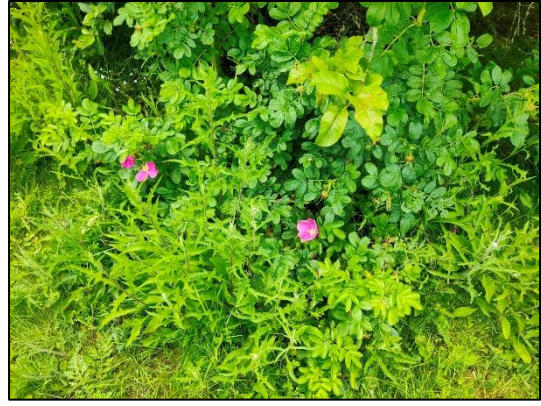
3.4.6. The survey area provides some limited habitat for common reptile species, mainly at the western end around the ditch and within the open grassland areas of the old tip. However, the bulk of the area is largely unsuitable and the areas which are suitable are isolated. It is considered unlikely that anything more than low numbers of common reptile species will be present within the site.

3.4.7. The survey area provides suitable habitat for hedgehog and other small mammals within the woodland, scrub, grasslands and boundary of the site due to the good opportunities for foraging, refugia and hibernation.

3.4.8. Large amounts of Japanese knotweed were identified within the survey area at the southern end of the old tip area, along with numerous Japanese rose plants, and one *Cotoneaster horizontalis* plant. All of these are invasive, non-native plant species listed on schedule 9 of the Wildlife and Countryside Act (1981).

3.4.8.1. Shown below are photographs of these plants within the survey area.





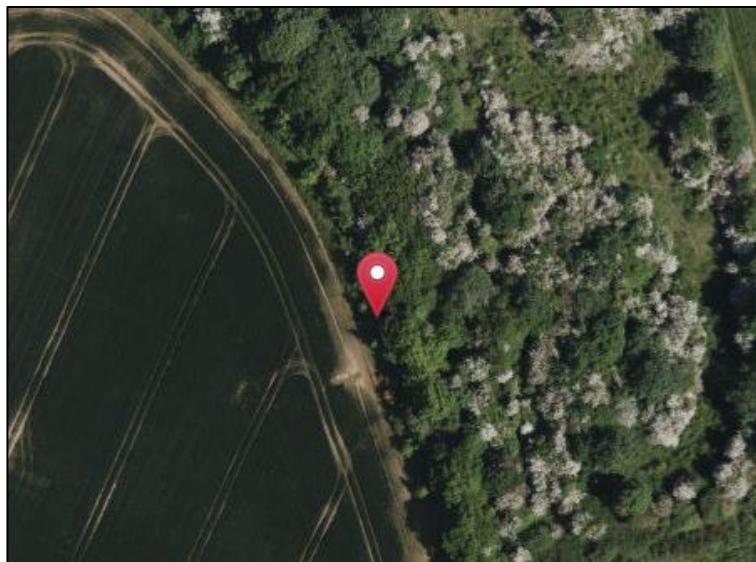
3.4.8.2. Shown below is a map of the Japanese knotweed within the survey area, showing the extensive southern clump.



3.4.8.3. Shown below is a map of the Japanese rose within the survey area. These are typically individual plants.



3.4.8.4. Shown below is a map of the *Cotoneaster horizontalis* within the survey area.



3.4.8.5. Given the density of the scrub within the old tip section of the survey area, it is possible that other plants have been missed.

4. EVALUATION OF FINDINGS.

4.1. The site lies a sufficient distance from any designated sites as to ensure the development has no impact upon them. The site appears to be located within risk zone four of the Dearne Valley Wetlands SSSI, but as the development will be located within an existing settlement, there is no need for further consultation with Natural England. However, due to the scale of the development, the local authority may wish to liaise with them regardless.

4.2. Overall, the site is considered to currently be of moderate ecological value, comprising a mosaic of habitats dominated by the two arable fields. The main value of the site comes from the woodlands and scrub, the habitats within the old tip and the boundary vegetation. Based on current proposals, the works would retain most of the woodlands and boundary vegetation but will lose the arable fields and scrub and grassland within the old tip area.

4.3. All details relating to biodiversity net gain, including the condition assessments and overall score of the site, are provided within the phase one and phase two reports.

4.4. No badger setts or other field signs were identified during the survey, although the site does provide suitable terrestrial habitat for the species and therefore, whilst unlikely, it is not impossible that badgers could move into the area between the surveys being carried out and construction works starting. Therefore, an up-to-date badger survey should be carried out immediately prior to any works commencing to confirm that the works will have no negative impact on badgers.

4.5. The ditch or watercourse within the survey area provides no suitable habitat for otter or white-clawed crayfish but could provide some limited habitat for water vole. However, no field signs of the species were identified during any survey and therefore, given the lack of field signs and recent records, it is considered very unlikely that the works will have any impact upon water vole.

4.6. The pond within W1 at the west of the survey area has the potential to support breeding great crested newts but returned a negative eDNA result. Therefore, the works are unlikely to impact upon great crested newts. However, there may still be an impact on other common amphibian species.

4.7. There are no buildings within the survey area to provide suitable habitat for roosting bats, but there are a number of trees. Plans show that none of these trees will be directly impacted by the works, but a sufficient buffer has not been left to allow certainty that there will be no indirect impact. Therefore, further surveys of the trees within the woodland are required to ensure that there is no negative impact on bats roosting in trees.

4.8. The current proposals show that the development is to retain most woodlands, boundary vegetation and watercourses / ditches, but the scrub, grasslands and arable land to be lost to facilitate the development. Due to the scale of the development, further surveys will be necessary to determine how the site is currently used by foraging and commuting bats so that an assessment can be made on the likely impact on them. These surveys are currently ongoing and this report will be updating upon their completion.

4.9. The survey area provides suitable habitat for nesting birds within all its habitats. Therefore, further surveys will be necessary to determine what bird species are currently using the site for nesting so that an assessment can be made on the likely impact on them. These are currently ongoing and almost finalised with only one survey left to be carried out. The results so far show a number of species using the site, including skylark and kestrel, for which specific mitigation will be recommended. Further details of these surveys will be available shortly within the breeding bird report.

4.10. The site is considered unlikely to host anything more than low numbers of common reptile species. Given the habitats present, it is not considered necessary to carry out full reptile surveys and provided that a Precautionary Working Method Statement (PWMS) and Construction Environmental Management Plan (CEMP) are in place, the works are considered unlikely to negatively impact upon reptiles.

4.11. Small mammals, including hedgehogs, are likely to be present within and around the survey area. However, provided due care is taken during the works, it is considered unlikely that the development will have a significant negative impact on these species.

4.12. Japanese knotweed, Japanese rose and *Cotoneaster horizontalis* are present throughout the site but mostly within the old tip area. The location of these plants has been mapped and they must be dealt with thoroughly prior to any works commencing on the site.

5. RECOMMENDATIONS.

5.1. Ecological Impact Assessment.

5.1.1. Once all below recommendations for further surveys have been completed, this report should be converted into an Ecological Impact Assessment (EcIA) where details of survey results, mitigation and biodiversity enhancements are included, to arrive at a conclusive assessment of the residual impact of the proposed development. This format will be suitable for submission to the local authority.

5.1.2. To allow for a full assessment of habitats within the EcIA, it is recommended that the landscaping proposals for the site are confirmed, and a further calculation be undertaken to try and minimise the loss of biodiversity. Results of this will be included within the BNG reports. If possible, it is recommended that none of the woodland on site be impacted as that will be the most difficult habitat to replace due to its high distinctiveness.

5.1.3. It is recommended that a river condition assessment be undertaken on the watercourse to the west of phase two to determine a baseline score for the watercourse.

5.1.4. It is recommended that any proposed off site mitigation required, factor in the likelihood of the requirement for mitigation for bird species such as skylark. Potential skylark plots may be required which will not necessarily score well in terms of biodiversity. More recommendations on this can be provided once any bird surveys have been finalised.

5.1.5. Whilst the main enhancements to the site should be achieved by habitat management, enhancement and creation, all of which will contribute towards biodiversity net gain, there will also be an expectation to provide biodiversity enhancements for fauna on the site, which will not contribute directly, but instead provide qualitative benefits. The site offers opportunities for this and it is encouraged that these are explored further to increase the ecological value of the site. These include, but are not limited to, the following:

- Creation of log, stone and soil piles around the site to provide habitat for reptiles, amphibians and small mammals.
- The inclusion of integrated bat boxes within all new properties.
- The inclusion of integrated bird boxes within all new properties.

- The inclusion of integrated bee bricks within all new properties.

5.2. It is recommended that prior to any development starting, a repeat badger survey be carried out to ensure that no badgers have moved into the survey area in the intermittent period between this survey and construction starting.

5.3. As no suitable buffer is being left between the woodland or LOT3 and the development, it is recommended that all trees with potential roost features within the woodland be surveyed to determine the presence or absence of roosting bats, which may be indirectly impacted by the development. This will require three surveys per tree between the months of May and August. Ideally these will be undertaken by a bat licenced tree climber who can endoscope any potential roost features, but if this is not possible for any reason, then they may be covered by dusk emergence surveys which utilise night vision aids as per the Bat Conservation Trust Good Practice Guidelines.

5.4. It has been recommended that further bat activity surveys be carried out to determine how bats use the site, so that an assessment can be made on the impact of the development on them. These surveys have been instructed and are ongoing, and will include at least one survey each season, spring, summer and autumn, and also will include static recorders being left on site for a minimum period of five days each month between May and October. April would ordinarily be included too but was missed, although this should not greatly affect the findings.

5.5. It has been recommended that breeding bird surveys be carried out to determine what species are using the site to nest and which habitats they are using. These surveys have too been instructed and are ongoing. A minimum of six surveys will be completed between the months of April and July. These are almost complete, and once finalised, further recommendations can be made along with an assessment of the impact on the development on birds.

5.6. It is recommended that invasive, non-native species management plan be provided which details how all invasive species, but particularly the Japanese knotweed, will be removed prior to the development commencing. It should also factor in the possibility of other invasive species being present within areas too dense to survey.

5.7. It is recommended that a Precautionary Working Method Statement (PWMS) or Construction Environmental Management Plan (CEMP) be created to set out how the development will proceed with no impact on reptiles, amphibians or small mammals.

Prepared by:	
Mitchel Greenhalgh. BSc, ACIEEM.	Date: 27 th June 2024.

Checked by:	
Ruth Georgiou. BSc, MCIEEM.	Date: 27 th February 2024.

6. REFERENCES.

- Amphibian and Reptile Groups of the United Kingdom (2010) *ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index*. ARGUK.
- Baker, J., Beebee T., Buckley, J., Gent, A. and Orchard, D. (2011). *Amphibian Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.
- Barn Owl Trust (2012) *Barn Owl Conservation Handbook*, Pelagic Publishing, Exeter.
- Bat Tree Habitat Key (2018) *Bat Roosts in Trees: a guide for identification and assessment for tree-care and ecology professionals*. Pelagic Publishing, Exeter
- Bird Survey & Assessment Steering Group (2023). *Bird Survey Guidelines for assessing ecological impacts, v.1.1.1*. Available at <https://birdsurveyguidelines.org> (Accessed 15/04/2024)
- Bright, P., Morris, P. & Mitchell-Jones, T. (2006) *The Dormouse Conservation Handbook*. English Nature, Peterborough.
- Chanin, P. (2003) *Ecology of the European Otter*. Conserving Natura 2000 Rivers Ecology Series No.10. English Nature, Peterborough.
- Chanin, P. (2003) *Monitoring the Otter Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No.10. English Nature, Peterborough.
- CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2017) *Guidelines on Ecological Report Writing*. Chartered Institute of Ecology and Environmental Management, Winchester.
- Cresswell, P., Cresswell, W.J., and Woods, M. (1993) *The Country Life Guide to Artificial Badger Setts*. Country Life, London.
- Collins J. (ed.) 2023. *Bat Surveys for Professional Ecologist: Good Practice Guidelines (4th Edition)*. The Bat Conservation Trust, London.
- Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) *The Water Vole Mitigation Handbook* (Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. Mammal Society, London.
- Department for Environment, Food & Rural Affairs (2024) *Biodiversity Net Gain*. Available at <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides> (Accessed: 15/04/2024).
- Department for Environment, Food & Rural Affairs (2024) *Statutory Net Biodiversity Metric User Guide*. Available at <https://www.gov.uk/government/collections/biodiversity-net-gain> (Accessed: 15/04/2024).
- Department for Levelling Up, Housing and Communities (2023) *National Planning Policy Framework (NPPF)*. Available at <https://www.gov.uk/government/publications/national-planning-policy-framework--2> (Accessed: 15/04/2024).

Edgar, P., Foster, J. and Baker, J. (2010) *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

Froglife (1999) *Froglife Advice Sheet 10: reptile survey*. Froglife, London.

Gurnell, J., & Lurz, P. (2012) *Red Squirrel*. In: Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trehella, W.J., Wells, D. and Wray, S. (2012). *UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation*. The Mammal Society, Southampton.

Harris, S., Cresswell, P. and Jefferies D. (1989) *Surveying Badgers*. Occasional Publication No 9, The Mammal Society, London.

Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), *Great Crested Newt Conservation Handbook*, Froglife, Halesworth.

Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.

Natural England (2022) *Hazel Dormice: Advice for making planning decisions*. Available at <https://www.gov.uk/guidance/hazel-dormice-advice-for-making-planning-decisions> (Accessed: 15/04/2024)

Natural England (2014) *Protected species and development: advice for local planning authorities*. (updated 2021) Available at: <https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications> (Accessed: 05/03/2021).

Natural Environment and Rural Communities Act 2006 Available at <https://www.legislation.gov.uk/uksi/2019/579/contents/made> (Accessed: 15/04/2024).

Peay, S. (2003) *Monitoring the White-clawed Crayfish *Austropotamobius pallipes**. Conserving Natura 2000 Rivers Monitoring Series No. 1. English Nature, Peterborough.

Stanbury, A. et al (2021) *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*. *British Birds* 114: 723-747. Available at <https://britishbirds.co.uk/content/status-our-bird-populations> (Accessed 15/04/2024)

Joint Nature Conservation Committee (2004). *Common Standards Monitoring Guidance for Birds*. 2004 ed. JNCC, Peterborough.

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 Available at <https://www.legislation.gov.uk/uksi/2019/579/contents/made> (Accessed: 15/04/2024).

The Protection of Badgers Act 1992 Available at <https://www.legislation.gov.uk/ukpga/1992/51/contents> (Accessed: 15/04/2024).

The Wildlife and Countryside Act 1981 (as amended). Available at <http://www.legislation.gov.uk/ukpga/1981/69> (Accessed: 15/04/2024).

UKHab Ltd (2023) *UK Habitat classification Version 2.0* Available at <https://www.ukhab.org>.

Appendix I. 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 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.

Many species 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 III. BATS IN TREES INFORMATION.

Ecology

UK bat species are small mammals, weighing from just 4g to the 40g. Therefore, any crevice, cavity or split within a tree large enough to conceal something the size of an AA battery is large enough to support a roosting bat.

Bats show a preference for roost sites with a narrow access point (as small as 1cm), likely due to the protection it offers from predators and other bats. Therefore, even small trees can be of value for roosting bats, especially individual bats.

Surveying for bat roosts within trees can be more challenging than surveying buildings, as many bat species exhibit roost switching behaviour; droppings do not persist in the same way as they do in buildings (sometimes not at all); some tree-roosting bats echolocate very quietly and some emerge very late and return very early. Surveys are further challenging due to the features of trees such as restricted observation due to foliage or lack of light beneath the canopy. The chance of identifying a roost is therefore relatively low and it is arguable that all trees with bat roosting potential should be considered part of a resource which will be used at one time or another by tree-roosting bats.

It is therefore relevant for assessments of all trees to be undertaken, irrespective of age and size, but based on the presence of potential roosting features (PRF's), as it is this which determines the presence of bats in a tree, not the size or age. It must also be remembered that a tree may provide habitat for more than one species or roost of bats.

Surveys

Surveys can comprise preliminary ground level inspection surveys which will identify any PRFs. This can be followed by a further aerial or climbing inspection survey of the tree and all (accessible) PRFs to identify any evidence of bats or bat field signs such as droppings, staining or odour. These surveys can be conducted at any time of the year.

Where PRFs have been identified to provide PRF-M suitability for bats, or evidence of bats is found, further surveys are likely to be necessary, most likely via climbing surveys or conducting bat activity surveys during dusk using night-vision aids.

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 IV. 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 V. 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

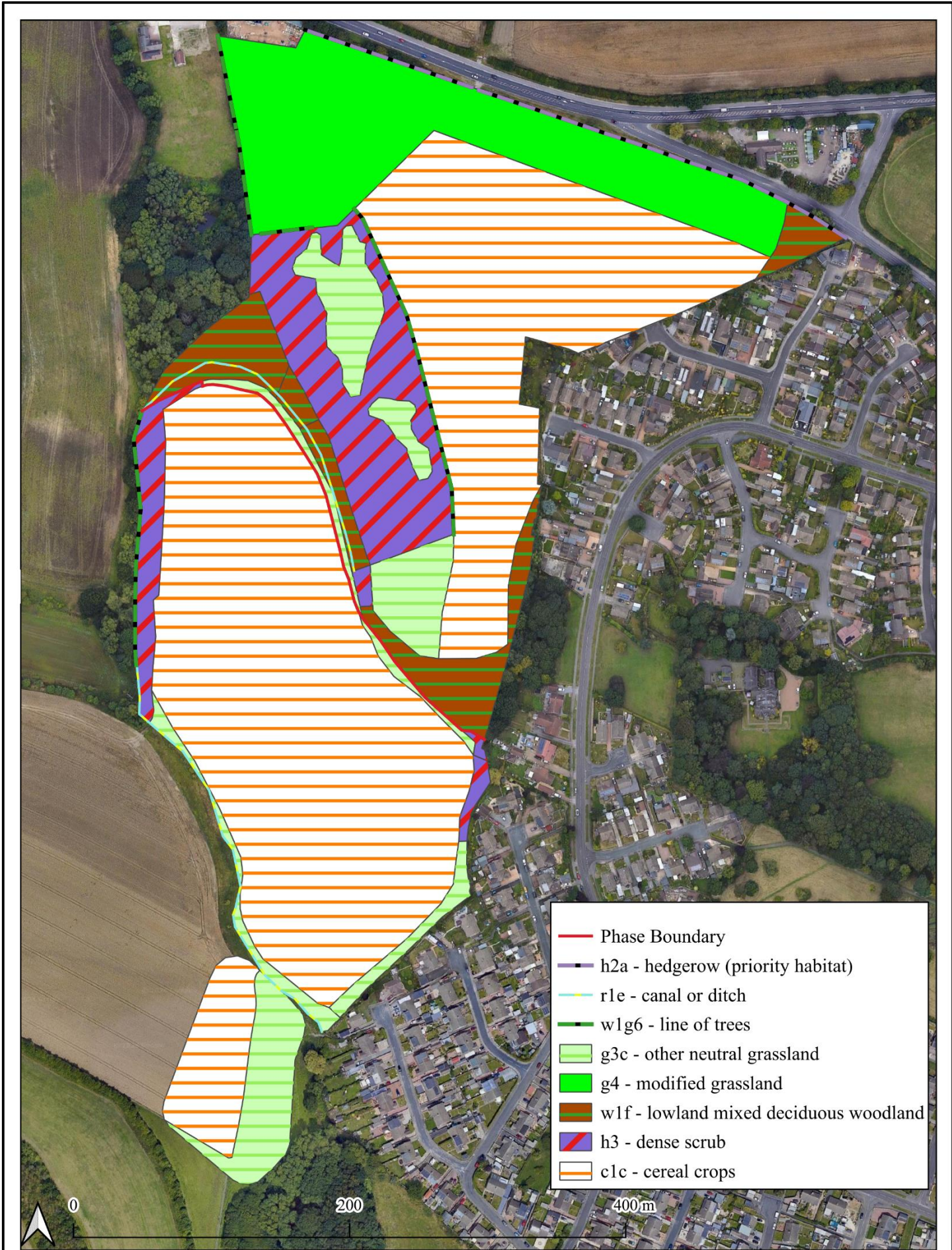
Invasive species listed under Schedule 9 are prohibited from release into the wild. Schedule 9, Section 14(2) prohibits 'planting' or 'causing to grow' in the wild of any plant listed in Part 2 of Schedule 9.

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>Reynoutria sachalinensis</i>	✓	

Knotweed, Hybrid	<i>Reynoutria japonica x Reynoutria sachalinensis</i>	✓	
Knotweed, Japanese	<i>Reynoutria 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 VI. ANNOTATED MAP OF THE SURVEY AREA.



APPENDIX VII. PROPOSED DEVELOPMENT PLAN.



0 / SITE LAYOUT PHASE 1 & 2



jrj CONSULTANTS

1000 10th Street, Suite 100
 St. John's, NL A1B 1X8
 Tel: (709) 734-1111
 Fax: (709) 734-1112
 Email: info@jrj.ca

PROJECT: 2024-01-15
 DRAWING NO: 2024-01-15-01
 DATE: 2024-01-15
 SCALE: 1:1000