

PROPOSED ELECTRICITY STORAGE FACILITY

**Barnsley, Twibell Street Battery - Ecological Impact
Assessment (EclA)**

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1.0 Executive Summary

This report sets out an Ecological Impact Assessment (EclA) in relation to the proposed development of a battery storage facility at a brownfield site off Twibell Street on the north-eastern edge of Barnsley town centre, South Yorkshire.

This EclA has been undertaken following current Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines and has been informed by an extended Phase 1 habitat survey and desk top study completed in May 2017.

Baseline surveys identified the potential for breeding birds within scrub on the site, and features with the potential to support roosting bats within a wall on the eastern boundary of the site.

Foraging and commuting bats are also likely to use the wooded corridor of the River Dearne located c. 60m to the north of the site. This section of river corridor is designated as Old Mill Lane Local Wildlife Site (LWS) on account of a maternity colony of Daubenton's bats at a culvert located 190m to the north-west of the site. The River Dearne Park Local Nature Reserve (LNR) also occurs 0.12km to the north-east of the application site.

Overall, the small scale loss of scrub habitat on the site is not considered to be significant beyond the site level, due to its small scale and species poor character, and therefore no compensation has been recommended for the habitat loss. The eastern boundary wall with bat roosting potential will be retained.

Impacts upon designated sites, habitats, protected and notable species have been assessed and measures to minimise or avoid adverse effects have been proposed. Whilst no significant impacts are predicted, the containment of construction working hours to daylight hours during spring, summer and autumn, implementation of best practice pollution prevention measures, and the avoidance of vegetation clearance during the bird breeding season, are recommended to reduce impacts. With these measures in place, residual effects upon biodiversity features are assessed as negligible and not significant. Ecological enhancement is proposed through the provision of bird and bat boxes and tree planting.

2.0 Introduction

2.1 Background

SLR Consulting Limited (SLR) was instructed by UK Energy Reserve Limited in May 2017 to undertake an Extended Phase 1 Habitat Survey and Desk Study of an area of land off Twibell Street, Barnsley, South Yorkshire (approximate central OS Grid Reference SE 3523 0710). The results have been used to prepare an Ecological Impact Assessment (EcIA) to inform a planning application for a proposed battery storage facility.

Due to the small scale of the proposed development, this report sets out the results of the baseline survey and assessment in a concise format, whilst aiming to maintain consistency with good practice guidance on reporting EcIA (CIEEM, 2016).

2.2 Site Description

The application site (herein referred to as the 'site') is located on an area of brownfield land immediately north of Twibell Street, on the north-eastern fringe of Barnsley town centre, South Yorkshire. The site boundary is shown in Drawing 01.

The 0.24 hectare site comprises hard standing and brick/concrete rubble with extensive stands of butterfly bush (*Buddleja davidii*) and scattered self-seeded saplings, along with several piles of wooden sleepers. The River Dearne wooded corridor lies approximately 60m to the north of the site, separated from the site by a further area of brown field land (dominated by hard standing and butterfly bush) which is subject to a separate planning application. Commercial units/warehouses occur to the east and west of the site. Twibell Street and residential development lies to the south of the site.

The site is set within a largely urban setting, although the wooded river valley of Dearne Valley occurs to the north.

A planning application has recently been submitted for a small generator facility (0.34 ha in size) immediately to the north of the site, within the brownfield area between the site and the River Dearne wooded corridor. An Ecological Impact Assessment (EcIA) for the separate development to the north has been undertaken and is contained within a separate report¹.

2.3 Details of the Proposed Development

The proposed development layout is provided in Appendix 01.

The proposed development would comprise of approximately:

- A series of battery inverter units;
- Eight step-up transformers;
- Eight battery storage switchboards;
- A DNO metering station;
- A main transformer compound;

¹ SLR Consulting (May 2017) *Twibell Street, Barnsley: Ecological Impact Assessment (EcIA)*. 424.03901.00006.0004.

- A control room;
- An aux transformer;
- A store room;
- A maintenance room;
- An electrical room;
- Two parking spaces;
- An area to be made suitable for commercial vehicles; and
- A 2.4m high security fence.

Access will be from a 5m wide gate off Twibell Street to the south.

2.4 Purpose of this Report

This report addresses potential ecological issues arising from the proposed development by providing an EclA informed by an Extended Phase 1 Habitat Survey and Desk Study. In summary, the purpose of the EclA report is:

- To describe the baseline data collection and assessment methodologies used;
- To summarise the baseline ecological conditions;
- To identify and describe all potentially significant ecological effects associated with the proposed development;
- To set out the mitigation measures, sensitive working practices, and, where necessary, compensation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects and describe how these will be delivered;
- To identify how mitigation measures will be delivered;
- To provide an assessment of the significance of any residual effects in relation to the impacts upon biodiversity and the legal and policy implications; and
- To identify appropriate ecological enhancement measures and how these will/could be delivered.

The above aspects are addressed through the following EclA document and associated appendices.

3.0 Guidance

3.1 Relevant Legislation²

3.1.1 Conservation of Habitats and Species Regulations 2010

The Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitats Regulations) transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb³ wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Regulation 61 of the Conservation of Habitats and Species Regulations 2010, requires a competent authority to make an appropriate assessment of the implications for European sites in view of a site's conservation objectives, before deciding to undertake, or give consent, permission or other authorisation for, a plan or project which:

- a. is likely to have a significant effect on a European site, either alone or in combination with other plans and projects; and
- b. is not directly connected with or necessary to the management of that site.

3.1.2 Wildlife & Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CROW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

² Please note that the summary of relevant legislation provided here is intended for general guidance only. The original legislation should be consulted for definitive information.

³ Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

3.1.3 Natural Environment & Rural Communities (NERC) Act 2006

The NERC Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

Section 41 of the Act requires the publication of a list of habitats and species which are of principal importance for the purpose of conserving biodiversity. The Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.

3.1.4 Protection of Badgers Act 1992

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

3.2 Relevant Planning Policy

3.2.1 National Planning Policy

The National Planning Policy Framework (NPPF) (Department for Communities and Local Government, 2012) sets out guidance for local planning authorities and decision-makers in how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05 (Office of the Deputy Prime Minister, 2005), the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out.

Paragraph 109 of the NPPF states that:

“The planning system should contribute to and enhance the natural and local environment by:

- *Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the government’s commitment to halt the overall decline in biodiversity, including by establishing, coherent ecological networks that are more resilient to current and future pressures.”*

Further to this in Paragraph 118 it states that:

“When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- *If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site’s notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;*

- *Opportunities to incorporate biodiversity in and around developments should be encouraged; and*
- *Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss."*

3.2.2 Local Planning Policy

Local Policy

Policies from the Barnsley Statutory Development Plan (which includes the Core Strategy, Unitary Development Plan, the Joint Waste Plan and the Education Sites Development Plan) relevant to Ecology and the proposed development include:

Core Strategy Objective 8:

"To protect and improve the countryside and natural environment by:

- *Protecting and improving Barnsley's countryside, biodiversity and heritage;*
- *Developing a network of Green Infrastructure in the form of connected multi-functional green spaces;*
- *Respecting the appearance, character and role of different landscapes;*
- *Protecting the countryside, Green Belt and green spaces from development and seeking opportunities for their improvement;*
- *Improving rivers and their corridors and responding to increased risks of flooding;*
- *Minimising the use of energy and encouraging the greater use of energy from renewable sources;*
- *Supporting renewable energy facilities to increase the amount of renewable energy produced in the borough; and*
- *Managing the environmental and social effects of existing and proposed mineral works effectively."*

CSP 36 Biodiversity and Geodiversity:

"Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:

- *Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified in Section 74 of the Countryside and Rights of Way Act 2000 and in the Barnsley Biodiversity Action Plan;*
- *Maximising biodiversity and geodiversity opportunities in and around new developments; and*
- *Conserving and enhancing the form, local character and distinctiveness of the river corridors of the Dearne and Dove as natural floodplains and important strategic wildlife corridors.*

Development which may harm a biodiversity or geological feature will not be permitted unless effective mitigation and/or compensatory measures can be ensured."

Policy GS15:

"The council will seek to safeguard important habitats and species from any activities which would cause disturbance, pollution or other damage. All development proposals should, where appropriate, include measures

to conserve and enhance existing features of nature conservation interest and to create new nature conservation areas.”

Policy GS16:

“Development likely to have an adverse effect, either directly or indirectly, on the conservation value of a National Nature Reserve or Site of Special Scientific Interest or any habitat or species protected by law, will only be permitted if it can be demonstrated that other material considerations outweigh the special interest of the site.”

Policy GS117:

“Sites which are designated as or potential Ramsar sites, Special Protection Areas, or Special Areas of Conservation will be given the protection afforded to Sites of Special Scientific Interest. In addition, development proposals will be allowed only if there is no alternative solution and if there are imperative reasons of overriding public interest for them. Where such sites host a priority habitat or species (as listed in the EC Habitats Directive) development should only proceed if required for reasons of human health or public safety.”

Policy GS18:

“Any development which may adversely affect, directly or indirectly, a Local Nature Reserve, a Natural Heritage Site, ancient woodland, a regionally important geological site or other nature conservation sites identified on the proposals maps, will not be approved unless it can be clearly demonstrated that there is a case for the development which outweighs the case for safeguarding the conservation interest of the site after available measures to avoid, mitigate or compensate for any adverse effects have been taken into account, in which case the council will seek to minimise the adverse impact and/or secure compensatory provision including, where appropriate, through planning conditions or obligations.”

The Barnsley Local Plan is currently under preparation which will replace the Barnsley Core Strategy and Unitary Development Plan. Until the Barnsley Local Plan is adopted, the Barnsley Core Strategy and Unitary Development Plan remain applicable.

Barnsley Biodiversity Action Plan

The Barnsley Biodiversity Action Plan (Barnsley Biodiversity Trust, 2009) contains the following Species Action Plans:

- Hedgehog (*Erinaceus europaeus*), bats, water vole (*Arvicola amphibius*), otter (*Lutra lutra*), grey partridge (*Perdix perdix*), bittern (*Botaurus stellaris*), kestrel (*Falco tinnunculus*), little ringed plover (*Charadrius dubius*), lapwing (*Vanellus vanellus*), barn owl (*Tyto alba*), skylark (*Alauda arvensis*), tree sparrow (*Passer montanus*), twite (*Linaria flavirostris*), great crested newt (*Triturus cristatus*), salmon (*Salmo salar*), bullhead (*Ameiurus nebulosus*), white-clawed crayfish (*Austropotamobius pallipes*), glow worm (*Arachnocampa luminosa*), dingy skipper (*Erynnis tages*) and bluebell (*Hyacinthoides non-scripta*).

The document also contains the following Habitat Action Plans:

- Upland oakwood, lowland mixed deciduous woodland, wet woodland, wood pasture and parkland, hedgerows, arable field margins, floodplain grazing marsh, lowland meadows, lowland dry acidic grassland, lowland heathland, upland heathland, blanket bog, purple moor grass and rush pasture, reedbeds, ponds, rivers and open mosaic habitats on previously developed land.

4.0 Methodology

4.1 Scope, Approach and Personnel

The Site boundary, which forms the core study area, is shown in Drawing 01. However for great crested newt, a larger study is considered in line with standard guidance (English Nature, 2001), to consider the potential for great crested newts to occur within ponds up to 500m from the site and whether they are likely to be affected by proposed development. Accessible land within 30m of the site was also searched for evidence of badger (*Meles meles*).

The scope of this EclA, i.e. the collection of baseline data, evaluation of ecological resources and description and assessment of the significance of impacts, follows guidelines set out by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2016) and references therein. Ecological features considered within the impact assessment include designated sites, habitats, protected species and relevant species of principal importance for nature conservation.

All ecologists that have led survey work and reporting associated with the EclA are members of CIEEM and follow the Chartered Institute's Code of Professional Conduct when undertaking ecological work.

The EclA, from scoping through to reviewing, has been managed by Mr Bob Edmonds who is a Chartered Environmentalist (CEnv) and Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Mr Edmonds has more than 15 years' experience as a professional ecologist.

This EclA has been subject to review as part of SLR's Quality Assurance system.

4.2 Baseline Data Collection

4.2.1 Desk Study

The Barnsley Biological Records Centre (BBRC) was commissioned to undertake a search of statutory and non-statutory designated sites for nature conservation and protected/notable species for the site, and land within a circa 1.5 km radius (from grid reference SE 35309 07041).

A summary of the information provided by BBRC is provided in Appendix 03 and specific records and information is referred to in the baseline section of this report. Due to the nature of the proposed development and the site, no other third part data providers were contacted for information.

Further baseline data in respect of statutory wildlife sites was sought through examination of Natural England's web based resources from the Multi-Agency Geographic Information for the Countryside (MAGIC)⁴.

⁴ <http://www.magic.gov.uk>

4.2.2 Field Survey

Extended Phase 1 Habitat Survey

An Extended Phase 1 Habitat Survey and mapping exercise was carried out by Senior Field Ecologist Hazel Stanworth MBiolSci GradCIEEM on the 18th May 2017, using standard Phase 1 Habitat survey methodology (JNCC, 2010). Habitats were mapped and features of interest were recorded using Target Notes (refer to Appendix 02). Habitats and features with potential to support protected and/or conservation priority fauna, together with any field signs of such species were searched for. This included the following:

- A search for badger setts and field signs within the site and 30m radius (where accessible).
- A search for ponds on site, and within 500m of the site boundary (where evident and accessible), to gauge their potential for great crested newt using standard Habitat Suitability Index (HSI) assessment methodology (Oldham *et al*, 2000);
- An assessment of trees on site or immediately bordering the site to establish their potential for roosting bats, based on criteria within the third edition of the Bat Conservation Trust's Good Practice Guidelines (Collins, 2016), refer to Table 4.1 (the site did not contain any buildings);
- An assessment of the potential of the site to support reptiles;
- An assessment of the potential of the site to support birds;
- An assessment of the likely value of the site for invertebrates; and
- A search for invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981, which includes Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) and Himalayan balsam (*Impatiens glandulifera*).

Table 4-1:
Criteria used to categorise the potential of buildings and trees for roosting bats

Suitability	Description Roosting habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high

Suitability	Description Roosting habitats
	conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Adapted from Table 4.1 (Collins, 2016)

4.2.3 Limitations

Desk Study

Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that protected species not identified during the data search do in fact occur within the vicinity of the site.

Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field study area.

Field Survey

No specific limitations to the field survey were identified. All areas of the site were accessible for the purposes of the assessment. The survey was undertaken within a suitable time of year for botanical assessment. However, it should be noted that lack of evidence of a protected species does not necessarily preclude it from being present at a later date.

4.3 Assessment Methodology

The CIEEM Guidelines for Ecological Impact Assessment in the UK (CIEEM, 2016) (henceforth referred to as the CIEEM guidelines) form the basis of the impact assessment presented in this report.

4.3.1 Determining Importance

In accordance with the CIEEM guidelines only ecological features (habitats, species, ecosystems and their functions/processes), which are considered to be important and potentially affected by the project should be subject to detailed assessment. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable. Ecological features should be considered within a defined geographical context. For this project the following geographic frame of reference is used:

- International;
- National (i.e. England);

- County (i.e. South Yorkshire); and
- Local (i.e. within c. 5km).

For designated sites, importance should reflect the geographical context of the designation. For example, a SSSI would normally be considered nationally important.

In accordance with CIEEM guidelines the value of habitats has been measured against published selection criteria where available. Examples of relevant criteria include Annex 1 of the Habitats Directive, descriptions of priority habitats⁵, e.g. those included in Section 41 of NERC Act 2006, Local Wildlife Sites Criteria and Habitat Action Plans (HAPs) contained within the Barnsley BAP.

In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Reference has therefore been made to published lists and criteria where available. Examples of relevant lists and criteria include: species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive), and UK priority species⁵, e.g. Section 41 species and Birds of Conservation Concern (Eaton *et al*, 2015).

For the purposes of this assessment ecological features of local importance or greater and/or subject to legal protection have been subject to detailed assessment. Effects on other ecological features are considered unlikely to be significant in legal or policy terms.

4.3.2 Impact Assessment

The impact assessment process follows that described within CIEEM (2016) EclA Guidelines.

For the purposes of this assessment, in accordance with CIEEM guidelines, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy). Effects can be considered significant at a wide range of scales from international to local (see Section 4.3.1). For example, a significant effect on a Site of Special Scientific Interest is likely to be of national significance whilst a significant effect on a regionally important population of a species is likely to be of regional significance.

Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

- Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area; and
- Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

⁵ i.e. Priority habitats and species as listed in the UK and devolved administrations, as listed: <http://jncc.defra.gov.uk/page-5705>

4.3.3 Avoidance, Mitigation, Compensation and Enhancement

A sequential process has been adopted to avoid, mitigate and compensate for ecological impacts. This is often referred to as the 'mitigation hierarchy'. This framework is defined as follows:

- Avoidance is used where an impact has been avoided e.g. through changes in scheme design;
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact *in situ*;
- Compensation describes measures taken to offset residual effects, i.e. where mitigation *in situ* is not possible; and
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

4.3.4 Assessment of Cumulative Impacts and Effects

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a particular location. The potential for cumulative effects with other development projects has also been considered as part of this assessment.

5.0 Baseline Ecological Conditions

5.1 Designated Sites

Designated sites within 1.5km of the Site are shown in map form in Appendix 03, as supplied by the BBRC. Appendix 03 also includes summary information (including species and habitats) provided by the BBRC.

5.1.1 Statutory Sites

The site itself does not contain any statutory designated sites for nature conservation.

A single statutory designated site for nature conservation occurs within a 1.5km radius of the site, this being Dearne Valley Park Local Nature Reserve (LNR) located 0.12km to the north-east of the site at its closest part. Dearne Valley Park LNR is described by Natural England as a mixed use reserve developed from relict habitats and reclaimed colliery/associated uses around a river valley. The LNR contains acidic oak woodland with a mosaic of wetland habitats.

5.1.2 Non-Statutory Sites

The site does not contain any non-statutory designated sites for nature conservation. However, three Local Wildlife Sites (LWSs) lie within a 1.5km of the site. These are detailed within Table 5-1 below.

Table 5-1: Non-statutory designated sites within a 2km radius of the Site

Reference	Name	Status	Description	Distance and Direction from Site
1164	Old Mill Lane	LWS	A tree-lined section of the River Dearne designated for a maternity roost of Daubenton's bats (<i>Myotis daubentonii</i>) at a culvert beneath Old Mill Road.	60m to north
634	Cliff Wood	LWS	A broadleaved woodland site, located within Dearne Valley Park LNR. The site also contains bodies of standing water with swamp habitat and areas of parkland along the base of the River Dearne valley.	0.50km to east
633	Barnsley Canal at Wilthorpe	LWS	A stretch of the disused Barnsley Canal and adjacent pastoral farmland.	0.92km to north-west

Cliff Wood LWS and Barnsley Canal at Wilthorpe LWS are situated sufficiently far enough away from the site to avoid being potentially affected by the proposals, and therefore are not discussed further. Old Mill Lane LWS is taken forward for detailed assessment as it lies 60m to the north of the site.

5.2 Habitats

The existing habitats on the site are illustrated in Drawing 01, with Target Notes provided in Appendix 02. Habitat classification follows JNCC's "Phase 1", adapted to take account of the site's urban and anthropogenic nature.

5.2.1 Hard Standing and Brick/Gravel/Concrete Fill

The site comprises a mixture of hard standing (tarmac) in the western half of the site which previously functioned as a car park, and brick/gravel/rubble fill in the eastern portion of the site, where buildings previously stood which are now demolished (Plate 1).

Two piles of wooden sleepers/planks occur on the hard standing along the southern edge of the site (Target Note 1 in Drawing 1).

The hard standing and brick/gravel/rubble fill is largely devoid of grassland/herb cover, although a small rubble bank in the eastern portion of the site does support a small area of sparse grasses and herbs (Plate 2; Target Note 2 in Drawing 1), which is encroached by bramble (*Rubus fruticosus*) cover. In this area, false oat-grass (*Arrhenatherum elatius*) and ribwort plantain (*Plantago lanceolata*) occurs, with occasional common ragwort (*Senecio jacobaea*), dandelion (*Taraxacum officinale*), selfheal (*Prunella vulgaris*), tufted vetch (*Vicia cracca*) and red valerian (*Centranthus ruber*).

The hard standing/brick fill habitat is considered to be of negligible ecological value.



Plate 1: Hard standing comprising the largest proportion of the site. Photograph taken from the centre of the site looking westwards.



Plate 2: Brick/gravel/concrete fill with small area of bramble and sparse grass and herb cover in the eastern portion of the site (Target Note 2 in Drawing 1).

5.2.2 Scrub and Trees

Self-seeded saplings and butterfly bush (*Buddleja davidii*) occur across the site. A small area of dense butterfly bush occurs on the northern boundary of the site. Elsewhere, scrub tends to be scattered, and is growing along seams in the tarmac or over the gravel fill (Plate 3).

The self-seeded saplings comprise frequent silver birch (*Betula pendula*), locally frequent sea buckthorn (*Hippophae rhamnoides*), and occasional goat willow (*Salix caprea*), sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*) and hawthorn (*Crataegus monogyna*). A young to semi-mature goat willow and hawthorn occurs in the south-west corner of the site. A fallen tree stump also occurs in the south-western corner (Target Note 3 in Drawing 1).

The sparse plant cover that has developed is species poor. The *Buddleja* is likely to support invertebrates including butterflies, however the lack of diversity or rare plant species means that the habitat is unlikely to support a rare or notable brownfield invertebrate assemblage. This habitat type is not considered to meet the criteria of “Open Mosaic Habitat on Previously Developed Land” (ADAS, 2010). The young scrub and tree habitat is therefore not considered to be of importance beyond the site level.



Plate 3: *Scattered scrub habitat. Photograph taken from the centre of the site, looking south-westwards.*

5.2.3 Boundary Structures

The site does not contain any buildings. A 2-3m high brick wall forms the majority of the southern boundary with Twibell Street, as well as the eastern boundary. The remainder of the southern boundary is formed by sections of wooden palisade fencing. The western and northern boundaries are open.

The boundary walls have been assessed for their potential to support roosting bats, refer to Section 5.3.6.

5.2.4 Invasive Non-Native Species

No invasive non-native species were recorded on the site.

Giant hogweed occurs on the brownfield plot to the north of the site, as well as along the River Dearne wooded corridor to the north, the closest plant located approximately 40m to the north of the site. Japanese knotweed was also noted growing along the banks of the River Dearne, approximately 70m to the north of the site.

Given the lack of legally controlled invasive non-native species on the site, no specific recommendations are made, and invasive non-native species are not discussed further within this report.

5.2.5 Key Surrounding Habitats

The plot of brownfield land immediately to the north of the site comprises hard standing and rubble fill with *Buddleja* and self-seeded sapling scrub. A planning application has recently been submitted for a small-scale generator facility within this plot of land immediately north of the site.

Approximately 60m north of the site lies a strip of broad-leaved semi-natural woodland habitat, which abuts the River Dearne.

The woodland corridor supports a mature canopy of sycamore, ash, horse chestnut (*Aesculus hippocastanum*) and alder (*Alnus glutinosa*), with an understorey of elder (*Sambuccus nigra*). The ground flora appears sparse, and bramble (*Rubus fruticosus*) and wood avens (*Geum urbanum*) were noted.

The woodland is considered to be of importance at the local level, and provides a wildlife corridor to wooded and wetland areas along the River Dearne to the east and west. The woodland and River Dearne located 60m north of the site also forms part of the Old Mill Lane LWS, and provides habitat for the maternity roost of Daubenton's bats situated under the Old Mill Lane culvert located approximately 190m to the north-west of the site.

The River Dearne lies approximately 60m to the north of the site, within the strip of broad-leaved semi-natural woodland. The section that lies closest to the site is fast flowing with heavily modified banks (Plate 4).



Plate 4: River Dearne and broad-leaved semi-natural woodland corridor that occurs approximately 60m north of the site.

5.3 Species

5.3.1 Plants

No Wildlife and Countryside Act 1981 (as amended) Schedule 9 invasive non-native species were recorded on the site.

No protected or notable plant records were provided by the BBRC for the 1.5km search radius. The site has low botanical diversity, and species are common and widespread. No rare or protected plant species were evident. Plants are therefore not considered further in the EclA.

5.3.2 Invertebrates

Records of several butterfly and moth species were provided by the BBRC, namely wall (*Lasiommata megera*), dingy skipper (*Erynnis tages*), small heath (*Coenonympha pamphilus*), buff ermine (*Spilosoma luteum*), small square-spot (*Diarsia rubi*), cinnabar (*Tyria rubi*) and dusky brocade (*Apamea remissa*). Most records relate to Dearne Valley old Tip and Old Smithies Road, located 1.4km east and 1.2km north of the site respectively.

The *Buddleja* scrub on the site is likely to support invertebrates including butterflies, however the low botanical diversity on the site and lack of rare species indicates that the site is unlikely to support a rare or notable brownfield invertebrate assemblage.

Invertebrates are therefore not considered further within the EclA.

5.3.3 Amphibians

There are no records of great crested newt within the 1.5km search radius. Records were provided for common toad (*Bufo bufo*), smooth newt (*Triturus vulgaris*) and common frog (*Rana temporaria*), dating from 2003 to 2016. Most records relate to Dearne Valley Park or Barnsley Canal, located to the north-east and north-west of the site.

The site does not contain any ponds. Five ponds were identified within 500m of the site. The ponds were subject to an HSI assessment to gauge their suitability for great crested newt, and a summary is provided in Table 5-2. HSI calculations are provided in Appendix 04.

The ponds lie 250m or further from the site. Pond 1 is separated from the site by the River Dearne, and Ponds 2-4 are separated from the site by a major road (A61/Old Mill Lane), which are both likely to act as major barriers to dispersal.

Given the distance of suitable breeding habitat from the site, the separation of ponds from the site by major barriers to dispersal, and the lack of great crested newt records in the area, it is considered highly unlikely that great crested newt would occur on the site. The site is also unlikely to be of value to other amphibian species. As such, amphibians are not considered further within the EclA.

Table 5-2: Great Crested Newt HSI Suitability Score of Ponds within 500m of the Site

Pond Reference	Photograph	Distance & Direction from Site	HSI Score	Suitability for great crested newt
P1		250m to east	0.65	Average
P2		330m to north-west	0.68	Average
P3		360m to north-west	0.69	Average
P4		390m to north-west	0.33	Poor

5.3.4 Reptiles

No reptile records were provided within 1.5km of the site.

The site does contain some piles of wooden sleepers and rubble which could potentially be used for basking or as refugia. However, it is considered unlikely that the site would support an appreciable population of reptiles, given the sub-optimal habitat that exists over much of the site (i.e. hard standing), the small size of the site, and its isolation within a largely urbanised setting.

It is possible that more mobile species such as grass snake (*Natrix natrix*) pass along the wooded valley to the north of the site to utilise wetland habitats further to the east and west.

Given the unlikely occurrence of reptiles on the site, reptiles are not considered further within the EcIA.

5.3.5 Birds

The desk study returned records of 32 bird species, ranging in date from 1989 to 2016. Of note this includes tree pipit (*Anthus trivialis*), nightjar (*Caprimulgus europaeus*), lesser redpoll (*Carduelis cabaret*), cuckoo (*Cuculus canorus*), house sparrow (*Passer domesticus*), yellowhammer (*Emberiza citrinella*), reed bunting (*Emberiza schoeniclus*), kingfisher (*Alcedo atthis*), peregrine (*Falco peregrinus*), redwing (*Turdus iliacus*), fieldfare (*Turdus pilaris*), linnet (*Carduelis cannabina*), starling (*Sturnus vulgaris*), song thrush (*Turdus philomelos*), mistle thrush (*Turdus viscivorus*) and willow tit (*Parus montanus*).

The woodland and river corridor located approximately 60m to the north of the site may support some of the species listed above. Of particular note, kingfisher is likely to use the River Dearne, and potentially suitable nesting habitat was noted on the northern bank of the River Dearne, although no kingfisher nests were apparent during the extended phase 1 habitat survey. Kingfisher is listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and is therefore protected from disturbance whilst breeding.

Two blackbirds (*Turdus merula*) and a robin (*Erithacus rubecula*) were recorded incidentally on the site during the extended Phase 1 habitat survey. These species are both common and widespread. The denser areas of scrub on site provide potential nesting habitat for a range of passerine and urban-fringe species. The assemblage of birds on the site is likely to be typical for its size, habitats present and its geographical location.

5.3.6 Mammals

Bats

A total of 105 bat records were returned relating to four species/species groups, namely noctule (*Nyctalus noctula*) (nine records), Daubenton's bat (*Myotis daubentonii*) (51 records), common pipistrelle (*Pipistrellus pipistrellus*) (32 records), soprano pipistrelle (*Pipistrellus pygmaeus*) (two records), an unspecified *Pipistrellus* species (one record) and an unspecified bat species (10 records). Many of the records relate to roosts in houses within Barnsley. The largest roost records include a maternity common pipistrelle roost (peak count of 213) located 1.2km west of the site in 1991, and a common pipistrelle maternity roost located 0.1km east of the site (the record dates from 1992). The majority of the Daubenton's bat records relate to a maternity roost at the Old Mill Lane River Dearne culvert, located 190m north-west of the site.

An assessment of the bat roosting potential of structures and trees within the site or immediately adjacent/overhanging the site has been undertaken.

The site lacks any mature trees, and does not contain any trees with appreciable potential to support roosting bats.

The brick wall on the eastern boundary of the site is largely intact although there are several small gaps/cracks at one location which are large enough to potentially support small numbers of crevice-dwellings bats (Plate 5). The eastern boundary wall is assessed as having **low bat roosting potential**.

The brick wall on the southern boundary is intact and lacks cracks or crevices, and is assessed as having negligible potential to support roosting bats.

The wooded River Dearne corridor located c. 60m to the north of the site is likely to have high value for foraging and roosting bats, and the nearby Daubenton's and common pipistrelle maternity colonies are likely to use this wooded river corridor for foraging as well as commuting to suitable habitat to the east and west.

The site itself is likely to be of lower value to foraging and commuting bats, although it is still likely that bats forage over the scrub habitat.



Plate 5: Eastern boundary wall, assessed as having low potential to support roosting bats.

Badger

No field signs of badger were noted within the site or within a 30m radius of it during the extended phase 1 habitat survey.

Two records of badger were provided by the BBRC, although none of these records relate to setts. The records refer to badger signs of activity and tracks, located 0.8km and 1.2km north of the site, dating from 2010.

No impacts upon badger are therefore anticipated, and badgers are not considered further within this report.

Otter

Four otter (*Lutra lutra*) records were provided by the BBRC, all relating to the River Dearne. The first River Dearne record is from the Old Mill Lane culvert located 190m north-west of the site, dating from 2012, although the type of record is not specified. Two records are from Smithy Bridge located 0.9km north-west of the site, dating from 2007, and relate to otter prints. The remaining record also relates to the River Dearne but the precise location is not specified.

No evidence of otter was noted during the extended Phase 1 habitat survey. The site itself provides sub-optimal habitat for otter: it does not contain any water bodies and is considered too disturbed and open to be likely to provide suitable areas for otters to lie-up or create holts.

The section of the River Dearne located c. 60m to the north of the site is likely to support foraging otter given the nearby records. No otter holts were recorded along this stretch, and it is unlikely that otter would breed along this particular stretch of the river given the existing levels of disturbance and abundance of more suitable and undisturbed areas upstream and downstream.

Given the lack of suitable habitat on the site, and the separation of the site from the River Dearne wooded corridor by at least c. 60m, no potential impacts upon otter are anticipated, and this species is therefore not taken forward for detailed assessment within this EclA.

Water Vole

Three water vole records were provided, all from Dearne Valley Park 0.7km south-west of the site, in 2001.

The site does not contain suitable habitat for water vole. The section of the River Dearne located c. 60m to the north of the site is unlikely to support water vole given the modified stone/concrete river bank along much of the section which is unsuitable for burrowing, and lack of lush vegetation to feed on. Furthermore, in the unlikely event that water vole were to occur along this stretch of the river, the site is situated a sufficient distance from the river bank so as not to affect water vole should they occur there. The species is therefore not considered further within this report.

5.4 Predicted Trends

The site would be expected to develop a greater cover of scrub over time if left unmanaged in its current use.

5.5 Summary of Important Ecological Features

Sites, habitats and species which are present locally and could potentially be affected by unmitigated development are summarised in Table 5-3.

Table 5-3: Summary of Important Ecological Features Subject to Detailed Assessment

Ecological Receptor	Scale at which Feature is Important	Comments on Legal Status and/or Importance
Dearne Valley Park LNR	Local	LNR Statutory Designated Site
Old Mill Lane LWS	Local	LWS Non-Statutory Designated Site
Bats	Local (if present)	S41 (some species), HR, Section 5 WCA
Birds	Local (if present)	S41 (some species), Red/Amber (some species), WCA (protection from killing, injury and taking of wild birds/eggs/nests, with certain exceptions), Schedule 1 WCA (some species)

* Key to protection/status:

HR	<i>Conservation of Habitats and Species Regulations 2010 (as amended) (Habitats Regulations)</i>
WCA	<i>Wildlife & Countryside Act 1981 (as amended)</i>
Red/Amber	<i>Red/Amber-listed Bird of Conservation Concern (Eaton et al. 2015)</i>
S41	<i>Species of Principal Importance for the Purpose of Conserving Biodiversity in England, listed under Section 41 of the NERC Act 2006</i>

Where features have been omitted from detailed assessment (due to no potential impacts arising or their low ecological importance), a rationale has been provided in Sections 5.1 – 5.3.

6.0 Assessment of Effects and Mitigation Measures

Potential impacts are assessed below, considering the proposed site layout (see Appendix 01). Impacts consider both the construction phase, and the operational phase of the development. Where required, avoidance and mitigation measures forming part of the development are incorporated into the assessments. A summary of impacts to habitats and species before and after mitigation and proposed enhancement is provided in Table 6-1.

6.1 Dearne Valley Park LNR

Dearne Valley Park LNR lies 0.12km to the east of the site at its closest part and will not be directly affected by the proposals. However, the LNR encompasses a section of the River Dearne which is downstream of the section which passes c. 60m to the north of the site. Therefore any pollution of this watercourse during construction (e.g. through dust/sediment generation and deposition and accidental spillage of fuels/chemicals) could indirectly impact upon habitats within the LNR.

In this instance, given that the site is separated from the River Dearne by c. 60m, it is considered unlikely that pollution of the River Dearne would occur. However, on a precautionary basis and as a measure of best practice, pollution risk will be minimised through careful conduct and in accordance with appropriate guidelines, such as CIRIA's Environmental Good Practice On Site Guide (C741) (Charles and Edwards, 2015). Construction materials, tools and associated lubricants and fuels will be stored appropriately on site to control any pollution risk. Machinery and equipment used will be well maintained and of modern standards to reduce noise levels and risks of leakage, nevertheless operators will be equipped with spill kits.

Dust levels are likely to increase slightly during construction and they are only likely to occur where surface vegetation is stripped. This is unlikely to have a significant impact due to the small scale and short duration of construction. Dust would be controlled on site using best practice methods such as sheeting of materials and wetting down of bare ground/construction materials in dry conditions.

With pollution prevention measures in place, no significant impacts upon the Dearne Valley Park LNR are anticipated.

6.2 Old Mill Lane LWS

Old Mill Lane LWS is located c. 60m to the north of the site, and is designated for a maternity colony of Daubenton's bats at the Old Mill Lane culvert located 190m north-west of the site.

Old Mill Lane LWS will not be directly affected by the proposals, and all trees and woodland habitat within the LWS will be retained. If unmitigated, the development has the potential to cause degradation of the habitat via pollution. Therefore pollution prevention measures as detailed in Section 6.1 above will be implemented.

Potential disturbance effects upon foraging and commuting Daubenton's bats using the LWS, via temporary noise and light disturbance during construction, and disturbance during the operation phase is anticipated to be very minimal given the separation of the site from the LWS by c. 60m.

The proposed facility will be constructed over approximately a 3-6 month period, and therefore any disturbance impacts during construction will be of short duration. In the spring, summer and autumn when bats are active, construction activities will be undertaken within daylight hours and therefore will largely avoid the time when bats are active (i.e. after sunset and before sunrise). As such, disturbance impacts during the construction phase

will be avoided. No overnight lighting or working within the construction site is proposed that could lead to disturbance during night-time hours when bats are active. Operational phase lighting will be restricted to emergency lighting that is only used periodically, and therefore potential lighting disturbance during the operational phase is anticipated to be non-significant.

As such, no significant residual impacts are anticipated upon the Old Mill Lane LWS.

6.3 Birds

The site provides some opportunities for nesting birds within the areas of scrub within the site.

If unmitigated, construction activities have the potential to cause injury or mortality of breeding birds, and damage or destruction of eggs or nests during construction. Vegetation removal should be undertaken outside of the main bird breeding season (March to August inclusive) if possible, however if this is not feasible a check for nesting birds will be undertaken by a suitably experienced ecologist immediately prior to vegetation removal. Should nesting birds be encountered, an exclusion zone around any active nests would be required to prevent damage of the nests and injury to the young birds until they had fledged.

There would also be a small-scale loss of potential breeding habitat for common and widespread species (i.e. loss of scrub); this loss is not considered to be significant beyond the site level.

The site is situated sufficiently far away from the River Dearne so as to avoid potential disturbance to kingfisher, should they nest within the banks of the River Dearne.

With the above mitigation measures in place, no significant impacts upon birds are anticipated.

6.4 Bats

Potential impacts upon bats using the adjacent habitat at Old Mill Lane LWS are covered in Section 6.2.

The brick wall on the eastern boundary has been assessed as having low potential for roosting bats. However, the scheme has been designed to retain this wall, and sufficient stand-off is given so as to retain its value as a Potential Roost Feature. Artificial lighting shall be avoided on the wall.

The lighting strategy described in Section 6.2 will also reduce potential disturbance of foraging and commuting bats using the site and surrounding areas.

There would also be a small-scale loss of potential foraging habitat in the form of scrub within the site, however this is not considered to be significant beyond the site level given the scale of the loss and abundance of higher quality habitat within the surrounding area, and the key potential foraging and commuting route for bats (i.e. the River Dearne wooded corridor to the north) will remain functional.

Therefore overall, residual impacts upon bats are anticipated to be non-significant.

6.5 Cumulative Effects

No potential cumulative effects have been identified upon any important ecological features when considered together with the proposed small-scale generator facility to the north of the site¹.

6.6 Proposed Biodiversity Enhancements

The following recommendations for biodiversity enhancements are over and above the mitigation set out in Sections 6.1 – 6.6.

In summary, the following enhancements are recommended:

- The erection of two bat boxes on poles or trees close to the site to provide roosting opportunities for bats. Suitable designs can be found from specialist suppliers such as nhbs⁶. Specifications should be suitable for a range of locally occurring species, e.g. Schwegler 1FF.
- The erection of two bird boxes on posts/fences along the margins of the site or on trees close to the site to provide nesting opportunities for birds. Specifications suitable for birds of conservation concern should be favoured, e.g. 1SP Schwegler Sparrow Terrace⁵.
- The planting of native trees of local provenance within the non-operational strip on the northern boundary of the site.

6.7 Summary of Effects

A summary of potential impacts, proposed mitigation, and residual effects for each important ecological feature is provided in Table 6-1. Table 6-1 also includes a summary of proposed biodiversity enhancements.

Table 6-1: Summary of Potential Impacts, Proposed Mitigation, Residual Effects and Proposed Biodiversity Enhancements

Ecological Feature	Value	Nature of Impact	Mitigation, Compensation and Enhancement	Anticipated Residual Impact
Dearne Valley Park LNR	Local	Damage or degradation of River Dearne during construction via dust generation and deposition or pollution.	Implementation of best practice pollution prevention and dust control measures.	Not significant.
Old Mill Lane LWS	Local	Degradation of habitat through pollution. Disturbance of foraging and	Implementation of best practice pollution prevention and dust control measures. Containment of construction	Not significant.

⁶ <http://www.nhbs.com/>

Ecological Feature	Value	Nature of Impact	Mitigation, Compensation and Enhancement	Anticipated Residual Impact
		commuting Daubenton's bats from light spill.	working hours to daylight hours during spring, summer and autumn.	
Breeding Birds	Local (if present)	Potential disturbance/mortality of nesting birds during construction. Minor loss of habitat.	Avoidance of vegetation clearance within the nesting season (March – August) if possible, or checks by suitably qualified ecologist before construction within bird nesting season. Provision of nest boxes. Planting of trees on northern margin of site.	Not significant, and no contravention of relevant legislation.
Bats	Local	Loss of roosts/roosting habitat in eastern boundary wall. Small-scale loss of foraging habitat.	Retention of eastern boundary wall. Containment of construction working hours to daylight hours during spring, summer and autumn. Provision of bat boxes. Planting of trees on northern boundary of site.	Not significant, and no contravention of relevant legislation.

7.0 Conclusion

SLR Consulting Limited was instructed by UK Energy Reserve to undertake an EcIA to provide technical input into a planning application in respect of a proposal to develop the site as a proposed battery facility.

An assessment of the significance of predicted ecological impacts that would result from the proposal has been undertaken following current guidance (CIEEM, 2016).

An Extended Phase 1 habitat survey was undertaken in May 2017 by an experienced terrestrial ecologist. A desk study of existing biological information from BBRC has been commissioned and a summary of this information is appended to this report.

The proposal would result in clearance of up to 0.24 ha of the site's existing vegetation and construction of the battery units and associated infrastructure.

Impacts upon designated sites, habitats, protected and notable species has been assessed and measures to avoid adverse effects have been proposed. Whilst no significant impacts are predicted, the implementation of best practice pollution prevention measures, the containment of construction working hours to daylight hours during spring, summer and autumn, and the avoidance of vegetation clearance during the bird breeding season, is recommended to reduce impacts to negligible levels. No impacts upon designated sites within proximity to the proposed development are predicted with the prescribed mitigation measures in place, either alone or in combination with other developments.

Overall, it is concluded that with the implementation of the proposed mitigation measures detailed within this report, the proposed development is unlikely to result in any significant negative impacts upon important ecological features as identified within this report, and no contravention of relevant wildlife legislation is anticipated. If the recommendations with respect to ecological enhancements are implemented, it is considered that the proposal provides an opportunity to support local biodiversity planning policies, including the Barnsley BAP.

8.0 References

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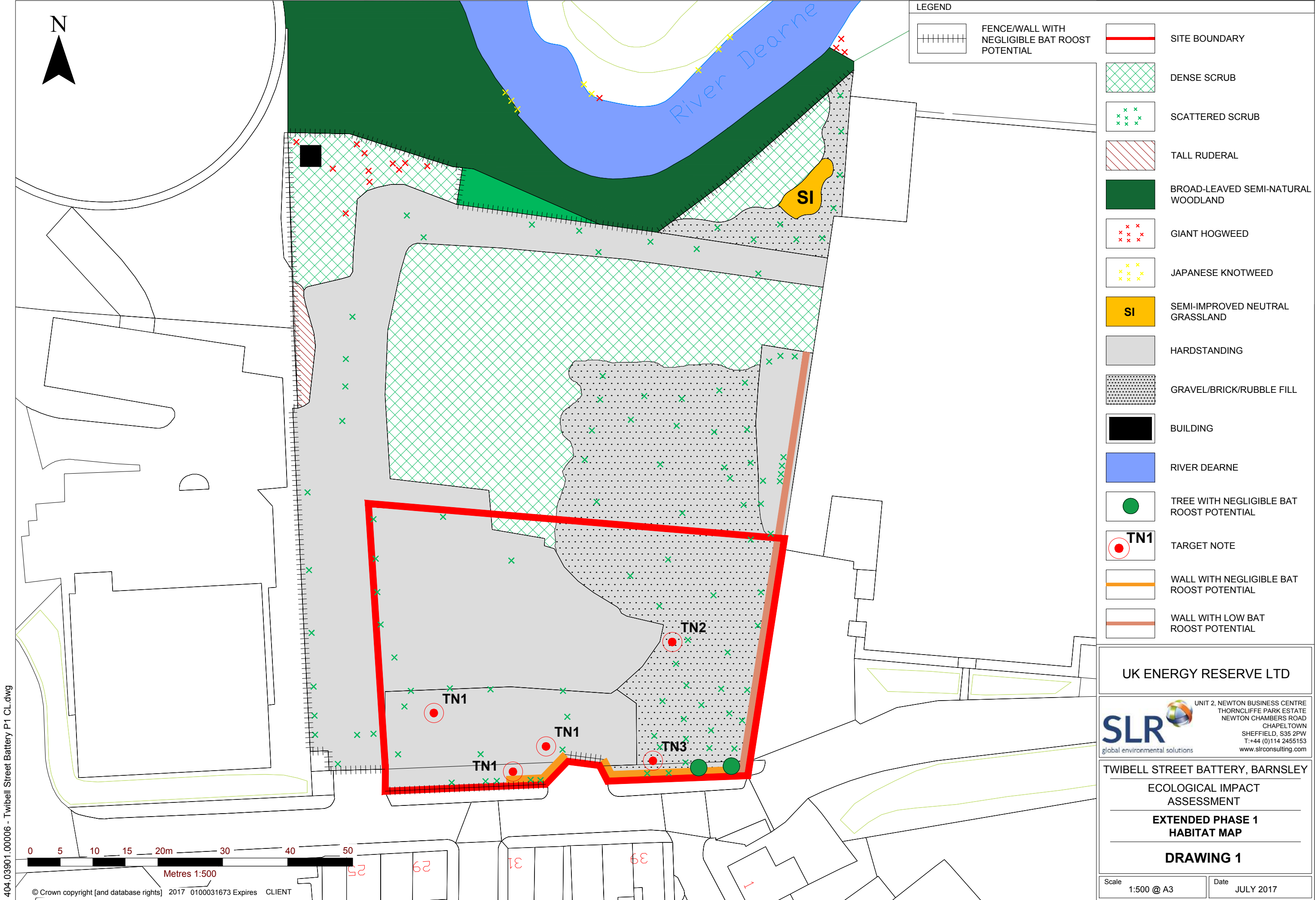
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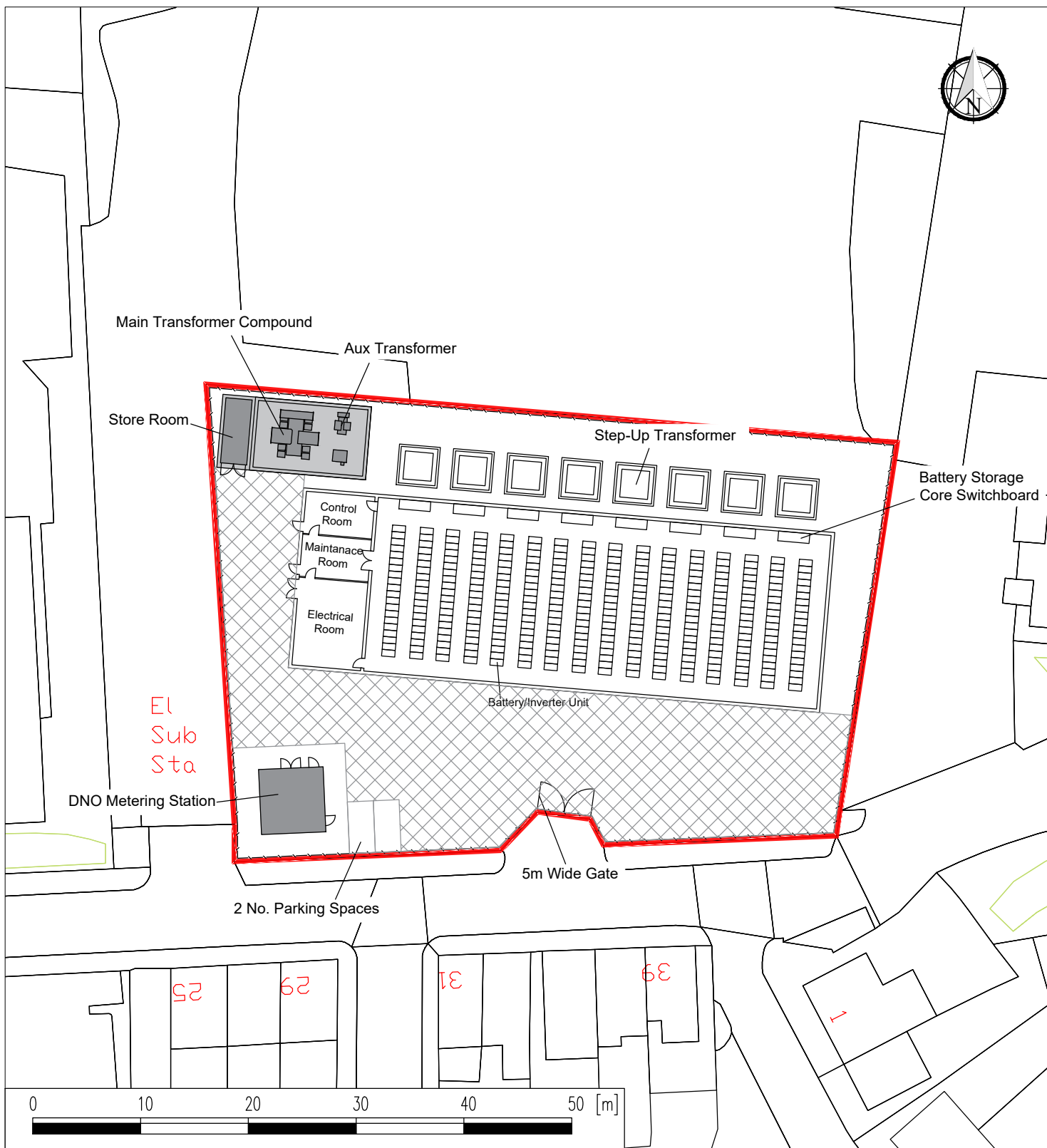
DRAWING 01

Phase 1 Habitat Plan



APPENDIX 01

Proposed Development Layout



APPENDIX 02

Target Notes Associated with Drawing 1

Target Note Reference (Refer to Drawing 1)	Description	Photograph
1	Piles of wooden sleepers/planks	
2	Small area with bramble, and sparse grass and herb cover. False oat-grass and ribwort plantain occurs, with occasional common ragwort, dandelion, selfheal, tufted vetch and red valerian.	

Target Note Reference (Refer to Drawing 1)	Description	Photograph
3	Fallen tree stump	

APPENDIX 03

Desk Study Data Provided by the BBRC

<i>Grid Ref</i>	<i>Location Name</i>	<i>TextDate</i>	<i>Group</i>	<i>Scientific Name</i>	<i>Common Name</i>	<i>Comments</i>
SE344080	Wilthorpe	13/04/2012	amphibian	Bufo bufo	Common Toad	
SE344079	Willowbank	10/06/2016	amphibian	Bufo bufo	Common Toad	Crossing path towards canal - photo
SE3442707981	Eastern part of Barnsley canal	16/05/2012	amphibian	Bufo bufo	Common Toad	Tadpole
SE356070	Cliffe Wood LWS	01/08/2003	amphibian	Bufo bufo	Common Toad	
SE362064	near ponds on old tip	25/11/2012	amphibian	Bufo bufo	Common Toad	1 female
SE343077	pond 1J	06/05/2012	amphibian	Bufo bufo	Common Toad	1 male
SE36130672	pond	09/08/2011	terrestrial mammal	Nyctalus noctula	Noctule	
SE361068	Dearne Valley Park Lake	20/06/1987	terrestrial mammal	Nyctalus noctula	Noctule	
SE3407	The Fleets	21/04/1990	terrestrial mammal	Nyctalus noctula	Noctule	
SE3407	The Fleets	12/06/1990	terrestrial mammal	Nyctalus noctula	Noctule	
SE3407	The Fleets	23/06/1990	terrestrial mammal	Nyctalus noctula	Noctule	
SE3407	The Fleets	10/04/1991	terrestrial mammal	Nyctalus noctula	Noctule	
SE3407	The Fleets	19/06/1992	terrestrial mammal	Nyctalus noctula	Noctule	
SE340068	Western Street, 36	11/06/1991	terrestrial mammal	Nyctalus noctula	Noctule	overhead
SE360068	Dearne Valley Park Lake	10/09/1987	terrestrial mammal	Nyctalus noctula	Noctule	
SE347079	Smithy Bridge The Fleets	17/01/2007	terrestrial mammal	Lutra lutra	Otter	prints in silt on island
SE3507	River Dearne	01/01/2011	terrestrial mammal	Lutra lutra	Otter	
SE35050724	River Dearne, Old Mill Lane	17/06/2012	terrestrial mammal	Lutra lutra	Otter	
SE34730792	EA ID: 362. Smithy Bridge, The Fleets	17/01/2007	terrestrial mammal	Lutra lutra	Otter	footprints in silt on island
SE363066	River Dearne at Hoyle Mill	30/10/2010	crustacean	Austropotamobius pallipes	White-clawed Freshwater Crayfish	
SE348079	River Dearne at Smithies Lane	30/10/2010	crustacean	Austropotamobius pallipes	White-clawed Freshwater Crayfish	
SE351072	River Dearne at A61	30/10/2010	crustacean	Austropotamobius pallipes	White-clawed Freshwater Crayfish	
SE3406	Barnsley	07/08/1975	bird	Anthus trivialis	Tree Pipit	Calling over the town centre.
SE3406	Barnsley suburbs outside SE 3406	14/05/2011	bird	Caprimulgus europaeus	Nightjar	1 Count
SE3407	Honeywell	23/02/2011	bird	Carduelis cabaret	Lesser Redpoll	3 visiting garden feeders
SE3606		01/01/1994	bird	Carduelis cabaret	Lesser Redpoll	
SE3606		01/01/1994	bird	Cuculus canorus	Cuckoo	
SE3606	Dearne Valley Park	20/05/2009	bird	Cuculus canorus	Cuckoo	1 male calling (BNSS field visit)
SE3439907998	Barnsley canal at Wilthorpe	16/05/2012	bird	Cuculus canorus	Cuckoo	Heard to NW
SE345082	Smithy Green	25/05/2013	bird	Cuculus canorus	Cuckoo	Singing males
SE342074	Carrington Avenue	04/06/2014	bird	Passer domesticus	House Sparrow	
SE341071	Cockerham Lane	04/06/2014	bird	Passer domesticus	House Sparrow	
SE3606		01/01/1994	bird	Passer domesticus	House Sparrow	
SE347070	Land off Leighton Close	13/06/2014	bird	Passer domesticus	House Sparrow	
SE344078	Smithies Lane	19/02/2013	bird	Passer domesticus	House Sparrow	In hawthorn hedge.
SE345078	Smithies Lane	19/02/2013	bird	Passer domesticus	House Sparrow	In hawthorn hedge.
SE366069	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE360078	Service Reservoir	01/01/1992	bird	Passer domesticus	House Sparrow	Regular visitor
SE358080	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE341067	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE338071	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE362078	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE362078	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE367070	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE355074	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE367074	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE344062	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE343070	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE353059	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE362074	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE352061	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE345076	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE344077	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE344075	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE343068	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE350068	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE360072	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE340065	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE341074	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE351081	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	

SE341072	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE348070	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE338071	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE341072	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE360072	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE363073	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE367070	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE363073	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE362074	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE362078	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE362078	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE344075	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE345076	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE341074	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE348070	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE353059	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE355074	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE367074	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE366069	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE358080	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE340065	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE343068	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE344077	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE350068	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE351081	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE352061	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE360071	Barnsley	27/01/2008	bird	Passer domesticus	House Sparrow	
SE357080	Barnsley	27/01/2008	bird	Passer domesticus	House Sparrow	
SE342065	Westgate	21/03/2012	bird	Passer domesticus	House Sparrow	
SE344062	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE341067	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE343070	Barnsley	25/01/2009	bird	Passer domesticus	House Sparrow	
SE347072	Canal Street	19/02/2013	bird	Passer domesticus	House Sparrow	
SE349070	Old Mill Lane	19/02/2013	bird	Passer domesticus	House Sparrow	In shrubbery at junction with Canal Way.
SE351061	Barnsley	27/01/2008	bird	Passer domesticus	House Sparrow	
SE341072	Barnsley	27/01/2008	bird	Passer domesticus	House Sparrow	
SE342069	Barnsley	27/01/2008	bird	Passer domesticus	House Sparrow	
SE361080	Barnsley	27/01/2008	bird	Passer domesticus	House Sparrow	
SE3606		01/01/1994	bird	Emberiza citrinella	Yellowhammer	
SE3508	West	23/01/2013	bird	Emberiza citrinella	Yellowhammer	snow covered
SE360078	Service Reservoir	01/01/1992	bird	Emberiza citrinella	Yellowhammer	Passage visitor
SE344080	Barnsley Canal at Wilthorpe	03/05/2012	bird	Emberiza schoeniclus	Reed Bunting	
SE345082	Smithy Green	25/05/2013	bird	Emberiza schoeniclus	Reed Bunting	Singing males
SE3508	West	23/01/2013	bird	Emberiza schoeniclus	Reed Bunting	snow covered
SE356062	Hoyle Mill	24/09/2001	terrestrial mammal	Pipistrellus pipistrellus 55kHz	55 Khz Pipistrelle	3
SE34950743	pond	20/08/2011	terrestrial mammal	Pipistrellus pipistrellus 55kHz	55 Khz Pipistrelle	
SE362069	Cliff Wd LWS	20/05/2012	terrestrial mammal	Erinaceus europaeus	Hedgehog	West European hedgehog - 20 No. released after convalescence
SE3507	Barnsley	25/04/2012	terrestrial mammal	Erinaceus europaeus	Hedgehog	Released from rehabilitation and care
SE363069	Rotherham Road A633	07/07/2013	terrestrial mammal	Erinaceus europaeus	Hedgehog	
SE35160833	Old Smithies Road	01/06/2016	insect - moth	Apamea remissa	Dusky Brocade	
SE3506		04/08/2003	insect - butterfly	Lasiommata megera	Wall	7 seen
SE3506		04/08/2003	insect - butterfly	Lasiommata megera	Wall	7 seen
SE3506		04/08/2003	insect - butterfly	Lasiommata megera	Wall	7 seen
SE3606		01/01/1994	conifer	Juniperus communis	Juniper	
SE365065	Dearne Valley Tip	09/06/2013	insect - moth	Tyria jacobaeae	Cinnabar	
SE35160833	Old Smithies Road	01/06/2016	insect - moth	Diarsia rubi	Small Square-spot	
SE35160833	Old Smithies Road	01/06/2016	insect - moth	Spilosoma luteum	Buff Ermine	
SE365065	Dearne Valley Old Tip	09/06/2013	insect - butterfly	Coenonympha pamphilus	Small Heath	
SE364062	Dearne Valley	09/06/2013	insect - butterfly	Coenonympha pamphilus	Small Heath	
SE344080	Smithies canal	22/05/2011	insect - butterfly	Coenonympha pamphilus	Small Heath	
SE365065	Dearne Valley Old Tip	09/06/2013	insect - butterfly	Erynnis tages	Dingy Skipper	

SE364062	Dearne Valley	09/06/2013	insect - butterfly	Erynnis tages	Dingy Skipper	
SE362066	Storrs Mill Lane	26/02/2015	bird	Alcedo atthis	Kingfisher	
SE359067	Storrs Mill Lane	26/02/2015	bird	Alcedo atthis	Kingfisher	
SE361066	River Dearne	12/12/2015	bird	Alcedo atthis	Kingfisher	1 bird on branch over river
SE364066	River Dearne	07/12/2015	bird	Alcedo atthis	Kingfisher	1 bird flying upstream
SE343080	River Dearne, Smithy Green	12/09/2009	bird	Alcedo atthis	Kingfisher	1 flying down-stream
SE355069	Barnsley Canal	09/12/2016	bird	Alcedo atthis	Kingfisher	On stretch near Peel Centre Retail Park.
SE348075		09/02/2013	bird	Alcedo atthis	Kingfisher	
SE3507	Old Mill Lane 54	01/01/2005	bird	Alcedo atthis	Kingfisher	breeding
SE349075		09/02/2013	bird	Alcedo atthis	Kingfisher	
SE360066	Dearne Valley Country Park	15/07/2016	bird	Alcedo atthis	Kingfisher	Birds observed in flight on river whilst surveying
SE3606		01/01/1994	bird	Alcedo atthis	Kingfisher	
SE366065	Dearne Valley Country Park	30/10/2016	bird	Alcedo atthis	Kingfisher	
SE354069	Twibell Street Canal	26/09/2016	bird	Alcedo atthis	Kingfisher	disturbed while perching in canal side
SE360067	Lake and surrounds	04/03/2013	bird	Alcedo atthis	Kingfisher	Perched in bush on island.
SE348074	Southern section of dam	18/02/2013	bird	Alcedo atthis	Kingfisher	
SE345065	Barnsley	04/12/2016	bird	Falco peregrinus	Peregrine	flying around town hall
SE363064	Woodland along northern edge of site	21/10/2016	bird	Turdus iliacus	Redwing	Several calling in edge of woodland.
SE3407		27/12/1990	bird	Turdus iliacus	Redwing	
SE3508	West	29/01/2013	bird	Turdus iliacus	Redwing	very mobile
SE360078	Service Reservoir	01/01/1992	bird	Turdus iliacus	Redwing	Winter visitor
SE348078	Car park off Smithies Lane	25/02/2016	bird	Turdus iliacus	Redwing	Approx 10 in trees near car park.
SE356059	Dearne Valley Park to Ardsley	18/04/2016	bird	Turdus pilaris	Fieldfare	Foraging in grassland.
SE360067	The lake	12/12/2015	bird	Bucephala clangula	Goldeneye	2 adult males on the water
SE3476208023	Barnsley canal at Wilthorpe	16/05/2012	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE3425508041	Barnsley canal at Wilthorpe	16/05/2012	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE3407	The Fleets	20/04/1992	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE3407	The Fleets	19/06/1992	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE349074	River Dearne, Fleets	24/07/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE351072	Old Mill Lane, A61 Culvert	24/06/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE3407	The Fleets	12/06/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE3407	The Fleets	23/06/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE35050724	River Dearne, Old Mill Lane	26/08/2013	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	roost
SE351072	Old Mill Lane, A61 Culvert	29/07/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	06/09/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	25/06/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE353072	River Dearne by Gasworks	25/07/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE3507	River Dearne, Burton Road	16/08/1999	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE3407	The Fleets	21/04/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE351072	Old Mill Lane, A61 Culvert	05/08/1991	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	09/06/1992	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE3407	The Fleets	10/04/1991	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE351072	Old Mill Lane, A61 Culvert	27/06/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	11/07/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	23/07/1990	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	06/06/1994	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	20/06/1994	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	26/05/1991	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	11/06/1991	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	08/07/1991	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	22/07/1991	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	10/06/1997	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	09/06/1999	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	13/07/1992	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	18/08/1992	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	01/06/1993	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	08/06/1993	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	08/06/2003	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE360068	Dearne Valley Park Lake	10/09/1987	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	
SE351072	Old Mill Lane, A61 Culvert	20/06/1995	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	04/06/1996	terrestrial mammal	Myotis daubentoni	Daubenton's Bat	exit count

SE351072	Old Mill Lane, A61 Culvert	18/06/1996	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	02/06/1997	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	23/04/2011	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	
SE351072	Old Mill Lane, A61 Culvert	20/05/2011	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	
SE351072	Old Mill Lane, A61 Culvert	25/06/1999	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	05/06/2000	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	14/06/2000	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	exit count
SE351072	Old Mill Lane, A61 Culvert	12/06/2002	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	exit count
SE35050724	River Dearne, Old Mill Lane	17/06/2012	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	
SE36130672	pond	09/08/2011	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	
SE361068	Dearne Valley Park Lake	20/06/1987	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	
SE35050724	Old Mill Lane	29/09/2010	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	
SE35050724	Old Mill Lane, A61 Culvert	23/04/2011	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	
SE35050724	Old Mill Lane, culvert	21/05/2011	terrestrial mammal	Myotis daubentonii	Daubenton's Bat	
SE361066		24/07/2013	amphibian	Rana temporaria	Common Frog	Froglet on edge of rough grass area
SE354069	Dearne Valley Country Park	18/07/2016	amphibian	Rana temporaria	Common Frog	2 x this year's froglets approx 15mm long in vegetation on Twibell Street canal
SE344080	Wilthorpe	13/04/2012	amphibian	Triturus vulgaris	Smooth Newt	juvenile under stone
SE36130672	pond	09/08/2011	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	
SE3407		19/06/1992	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	6
SE3407		12/06/1990	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	2
SE3407		20/04/1992	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	6
SE3407		21/04/1990	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	10
SE351072	A61 culvert	29/07/1990	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1 feeding
SE346068	Exchange County way	07/09/1992	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE353072	Twibell Street	21/08/1993	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	roost exit count 17
SE340068	36 Western Street	11/06/1991	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	maternity roost exit count 213
SE345065	Gardens	11/08/1992	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE353072	Twibell Street	13/07/1990	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	roost exit count 28
SE340068	41 Western Street	07/08/1989	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	maternity roost exit count 59
SE353072	Twibell Street	06/08/1994	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	roost exit count 46
SE345067	Exchange County Way	09/09/1998	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	2
SE353072	Twibell Street	31/07/1990	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	roost exit count 31
SE340067	Sackville Street	01/06/1992	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE344065	Regent Street	04/09/1989	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE353072	Twibell Street	30/07/1992	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	roost exit count 74
SE346063	Market Hill	10/08/1992	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE342066	Victoria Avenue	12/06/1991	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE3406	Victoria Road	13/06/1997	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE340068	36 Western Street	22/06/1991	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	maternity roost exit count 188
SE3406	Victoria Road	11/10/1994	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE356071	19 Treddis Close	08/12/2007	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	droppings
SE3407	St Barnabus Walk Honeywell	05/08/1993	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE356069	aqueduct Hoyle Mill	10/09/1987	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE358070	19 Tredis Close	11/07/1995	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	20 exit count from roost
SE360068	lake	10/09/1987	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	feeding
SE348080	Smithies Lane	20/04/1992	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	1
SE352063	Grove Street	01/09/2014	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	Maximum count. Roof space of former primary school being used as a transitional/day roo.
SE360067	fish pond W end	05/07/2013	bird	Anas clypeata	Shoveler	
SE3406	Barnsley	16/02/2010	bird	Anser brachyrhyncus	Pink-Footed Goose	west over Redbrook
SE344060	Morrisons	15/10/2011	bird	Anser brachyrhyncus	Pink-Footed Goose	north-west at 11.45 over Morrisons
SE3406	Barnsley	15/11/2008	bird	Anser brachyrhyncus	Pink-Footed Goose	east over Morrisons at 15.00
SE360078	Service Reservoir	01/01/1992	bird	Anthus pratensis	Meadow Pipit	Passage visitor
SE3606		01/01/1994	bird	Carduelis cannabina	Linnet	
SE344079	Barnsley to Barugh section	25/02/2016	bird	Carduelis cannabina	Common Linnet	Singing in scrub on southern bank of former canal.
SE360078	Service Reservoir	01/01/1992	bird	Carduelis cannabina	Common Linnet	Passage visitor
SE3606		01/01/1994	bird	Carduelis carduelis	Goldfinch	
SE3407		27/12/1990	bird	Carduelis carduelis	Goldfinch	
SE359069	Western sector	07/12/2015	bird	Carduelis carduelis	Goldfinch	c8 birds feeding on thistles
SE356070	Cliffe Wood LWS	01/08/2003	bird	Carduelis carduelis	Goldfinch	
SE342074	Carrington Avenue	04/06/2014	bird	Carduelis carduelis	Goldfinch	
SE348083	Disused railway near Reasbeck Terrace	19/02/2013	bird	Carduelis carduelis	Goldfinch	Singing.

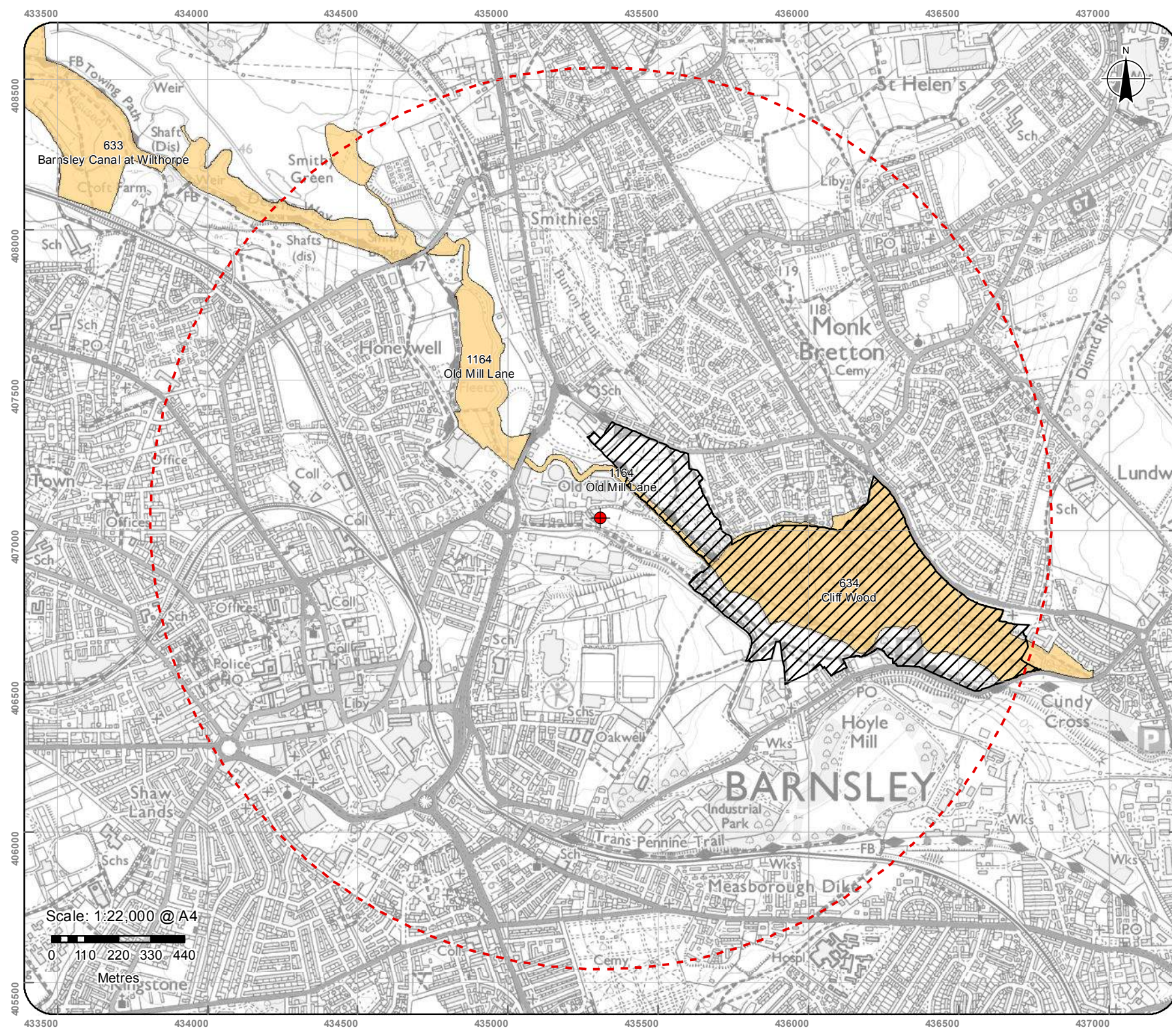
SE358075	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE367070	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE341067	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE344077	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE338071	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE341072	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE358075	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE363074	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE360072	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE352055	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE341072	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE341067	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE338071	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE350068	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE353059	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE362074	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE344077	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE350068	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE353059	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE362074	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE360072	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE363074	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE355074	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE367070	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE347072	Canal Street	19/02/2013	bird	Carduelis carduelis	Goldfinch	Singing.
SE353069	Car park off Earning View	21/02/2013	bird	Carduelis carduelis	Goldfinch	
SE3406	Barnsley	15/05/2009	bird	Carduelis carduelis	Goldfinch	Between: 11:30-12:30.
SE360078	Service Reservoir	01/01/1992	bird	Carduelis carduelis	European Goldfinch	Passage visitor
SE352055	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE355074	Barnsley	25/01/2009	bird	Carduelis carduelis	European Goldfinch	
SE350064		23/06/2015	bird	Falco tinnunculus	Kestrel	
SE350064		22/06/2015	bird	Falco tinnunculus	Kestrel	
SE364063	Barnsley Main Colliery site, Oaks Lane	26/09/2015	bird	Falco tinnunculus	Kestrel	
SE3407	The Fleets	12/09/2009	bird	Falco tinnunculus	Kestrel	1 perched on telegraph pole
SE3507	A635 road, roadside	16/01/2012	bird	Falco tinnunculus	Kestrel	
SE36440639	Pithead and surrounds	06/09/2016	bird	Falco tinnunculus	Kestrel	Perched on pithead.
SE348077	Northern section of dam	25/02/2016	bird	Falco tinnunculus	Common Kestrel	Male perched in tree on west bank of dam.
SE360078	Service Reservoir	01/01/1992	bird	Falco tinnunculus	Common Kestrel	Regular visitor
SE3507	Old Mill	30/03/2007	bird	Hirundo rustica	Swallow	
SE3606	Dearne Valley Park	20/05/2009	bird	Hirundo rustica	Barn Swallow	c10 birds
SE365065	River Dearne	15/06/1995	bird	Motacilla cinerea	Grey Wagtail	
SE365065	River Dearne	15/06/1995	bird	Motacilla cinerea	Grey Wagtail	
SE362067	Dearne Valley Country Park	28/10/2016	bird	Motacilla cinerea	Grey Wagtail	
SE362067	Dearne Valley Country Park	15/07/2016	bird	Motacilla cinerea	Grey Wagtail	Feeding in pool and ripples
SE361066	Storrs Mill Lane	26/02/2015	bird	Motacilla cinerea	Grey Wagtail	
SE364063	Scrub at south-eastern end of site	04/10/2016	bird	Regulus regulus	Goldcrest	Calling in scrub.
SE364064	Woodland along northern edge of site	21/10/2016	bird	Regulus regulus	Goldcrest	Calling in woodland along northern edge of site.
SE355074	Barnsley	25/01/2009	bird	Regulus regulus	Goldcrest	
SE341072	Barnsley	25/01/2009	bird	Regulus regulus	Goldcrest	
SE341072	Barnsley	25/01/2009	bird	Regulus regulus	Goldcrest	
SE355074	Barnsley	25/01/2009	bird	Regulus regulus	Goldcrest	
SE346079	Barnsley to Barugh section	25/02/2016	bird	Regulus regulus	Goldcrest	Foraging in hawthorns near car park off Smithies Lane.
SE355074	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE338071	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE367074	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE344077	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE345076	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE362074	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE348070	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE360078	Service Reservoir	01/01/1992	bird	Sturnus vulgaris	Common Starling	Regular visitor
SE342074	Carrington Avenue	04/06/2014	bird	Sturnus vulgaris	Common Starling	

SE363074	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE360072	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE341072	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE362078	Barnsley	25/01/2009	bird	Sturnus vulgaris	Common Starling	
SE338071	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE344077	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE355074	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE348070	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE3508	West	29/01/2013	bird	Sturnus vulgaris	Starling	very mobile
SE3508	West	23/01/2013	bird	Sturnus vulgaris	Starling	snow covered
SE360072	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE362078	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE362074	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE367074	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE341064	Sackville St	04/03/2012	bird	Sturnus vulgaris	Starling	starling 5 No.
SE341072	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE338069	Barnsley	27/01/2008	bird	Sturnus vulgaris	Starling	
SE341072	Barnsley	27/01/2008	bird	Sturnus vulgaris	Starling	
SE339073	Barnsley	27/01/2008	bird	Sturnus vulgaris	Starling	
SE342069	Barnsley	27/01/2008	bird	Sturnus vulgaris	Starling	
SE345076	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE363074	Barnsley	25/01/2009	bird	Sturnus vulgaris	Starling	
SE341065	Sackville St	22/03/2012	bird	Sturnus vulgaris	Starling	
SE346066	Eldon St	22/03/2012	bird	Sturnus vulgaris	Starling	
SE361080	Barnsley	27/01/2008	bird	Sturnus vulgaris	Starling	
SE351061	Barnsley	27/01/2008	bird	Sturnus vulgaris	Starling	
SE344063	Barnsley	07/11/2012	bird	Sturnus vulgaris	Starling	
SE3406	Town centre	06/08/2013	bird	Sturnus vulgaris	Starling	flying around
SE350064		23/06/2015	bird	Sturnus vulgaris	Starling	
SE346066	Eldon Street	22/03/2012	bird	Sturnus vulgaris	Starling	
SE341064	Town centre - Sackville Street	04/03/2012	bird	Sturnus vulgaris	Starling	
SE341065	Sackville Street	22/03/2012	bird	Sturnus vulgaris	Starling	
SE341071	Cockerham Lane	04/06/2014	bird	Turdus merula	Blackbird	
SE361066	Storrs Mill Lane	26/02/2015	bird	Turdus merula	Blackbird	
SE350064		23/06/2015	bird	Turdus merula	Blackbird	
SE367074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE366069	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE362074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE352055	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE340065	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE362078	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE362078	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE338073	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE366069	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE367070	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE359077	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE344062	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE367074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE341074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE347074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE345076	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE353059	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE359074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE344075	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE338071	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE362074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE362074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE358080	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE348070	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE355074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE352081	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	

SE352061	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE343060	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE350068	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE343068	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE343070	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE344077	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE363074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE341067	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE364070	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE341072	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE351081	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE355074	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE360072	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE363074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE367070	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE360078	Service Reservoir	01/01/1992	bird	Turdus merula	Common Blackbird	Resident. Breeding.
SE363064	Woodland along northern edge of site	04/04/2017	bird	Turdus merula	Common Blackbird	Carrying nest material.
SE360072	Barnsley	25/01/2009	bird	Turdus merula	Common Blackbird	
SE344075	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE359077	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE345076	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE362074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE362078	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE362078	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE355074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE353059	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE338071	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE358080	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE352055	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE352061	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE341074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE341072	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE347074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE352081	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE348070	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE355074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE343070	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE343060	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE343068	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE338073	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE344077	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE359074	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE347070	Land off Leighton Close	13/06/2014	bird	Turdus merula	Blackbird	
SE362066	Eastern sector	12/12/2015	bird	Turdus merula	Blackbird	3 birds
SE364063	Barnsley Main Colliery site, Oaks Lane	26/09/2015	bird	Turdus merula	Blackbird	
SE344062	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE341067	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE340065	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE357080	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE360071	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE338069	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE364064	Woodland along northern edge of site	04/10/2016	bird	Turdus merula	Blackbird	Calling in edge of woodland.
SE364064	Woodland along northern edge of site	21/10/2016	bird	Turdus merula	Blackbird	Making alarm calls in edge of woodland.
SE363064	Car park and surrounds	25/10/2016	bird	Turdus merula	Blackbird	In block of trees and shrubs between car park and pithead.
SE364070	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE364070	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE353059	Dearne Valley Park to Ardsley	14/06/2016	bird	Turdus merula	Blackbird	
SE361080	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE342069	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE351061	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE3606		01/01/1994	bird	Turdus merula	Blackbird	

SE350068	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE351081	Barnsley	25/01/2009	bird	Turdus merula	Blackbird	
SE339073	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE341072	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE341074	Barnsley	27/01/2008	bird	Turdus merula	Blackbird	
SE3606		01/01/1994	bird	Turdus philomelos	Song Thrush	
SE360060	Woodland along western flank of hill	25/10/2016	bird	Turdus philomelos	Song Thrush	Sunbathing on edge of woodland.
SE342074	Carrington Avenue	04/06/2014	bird	Turdus philomelos	Song Thrush	
SE3507	Old Mill Lane 54	01/01/2005	bird	Turdus philomelos	Song Thrush	breeding
SE349077	Western bank of dam	19/02/2013	bird	Turdus philomelos	Song Thrush	Singing.
SE348075	Eastern bank of dam	19/02/2013	bird	Turdus philomelos	Song Thrush	Singing.
SE348078	Car park off Smithies Lane	25/02/2016	bird	Turdus philomelos	Song Thrush	Singing in trees near car park.
SE3606	Dearne Valley Park	20/05/2009	bird	Turdus philomelos	Song Thrush	1 bird
SE346078	Smithies Lane	26/02/2013	bird	Turdus philomelos	Song Thrush	Singing in hedgerow to south of road.
SE343070	Barnsley	25/01/2009	bird	Turdus philomelos	Song Thrush	
SE343070	Barnsley	25/01/2009	bird	Turdus philomelos	Song Thrush	
SE357059	Trans Pennine Trail	04/04/2017	bird	Turdus philomelos	Song Thrush	Singing in woodland along Trans Pennine Trail (near Mount Osborne Business Park).
SE364063	Scrub near Oaks Lane	04/04/2017	bird	Turdus philomelos	Song Thrush	
SE360078	Service Reservoir	01/01/1992	bird	Turdus philomelos	Song Thrush	Resident. Breeding.
SE365066	Wood near Spring Pond	15/06/1995	bird	Turdus viscivorus	Mistle Thrush	
SE365066	Wood near Spring Pond	15/06/1995	bird	Turdus viscivorus	Mistle Thrush	
SE3606		01/01/1994	bird	Turdus viscivorus	Mistle Thrush	
SE341066	Grounds of Fairfield House	21/03/2012	bird	Turdus viscivorus	Mistle Thrush	Singing.
SE344079	Barnsley to Barugh section	25/02/2016	bird	Turdus viscivorus	Mistle Thrush	In scrub on southern bank of former canal.
SE360078	Service Reservoir	01/01/1992	bird	Turdus viscivorus	Mistle Thrush	Resident
SE3606		01/01/1994	bird	Phylloscopus trochilus	Willow Warbler	
SE3606		01/01/1994	bird	Picus viridis	Green Woodpecker	
SE364062	Scrub near Oaks Lane	04/10/2016	bird	Picus viridis	Green Woodpecker	In scrub on north-eastern edge of hill.
SE364064	Pithead and surrounds	30/09/2016	bird	Picus viridis	Green Woodpecker	In flight near pithead buildings.
SE358069	Cliffe Wood LWS	01/08/2003	bird	Picus viridis	Green Woodpecker	
SE3508	West	23/01/2013	bird	Picus viridis	Green Woodpecker	snow covered
SE3508	West	24/01/2013	bird	Picus viridis	Green Woodpecker	snow covered
SE364064	Woodland along northern edge of site	21/10/2016	bird	Prunella modularis	Dunnock	Two calling in edge of woodland.
SE363064	Car park and surrounds	30/09/2016	bird	Prunella modularis	Dunnock	Calling in shrubs near car park.
SE362066	Eastern sector	12/12/2015	bird	Prunella modularis	Dunnock	1 bird in hedgerow bushes
SE364063	Barnsley Main Colliery site, Oaks Lane	26/09/2015	bird	Prunella modularis	Dunnock	
SE3606		01/01/1994	bird	Prunella modularis	Dunnock	
SE353069	Car park off Earning View	21/02/2013	bird	Prunella modularis	Dunnock	Singing.
SE345076	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE359077	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE352081	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE355074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE340065	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE341067	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE353059	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE344077	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE341074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE341072	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE347074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE338071	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE360072	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE363074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE341067	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE341072	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE341074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE364070	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE340065	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE362078	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE338071	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE367070	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE359077	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	

SE347074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE353059	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE352081	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE345076	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE358080	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE344077	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE362074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE362078	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE362074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE355074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE350068	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE350068	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE364070	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE360078	Service Reservoir	01/01/1992	bird	Prunella modularis	Hedge Accentor	Resident
SE347065	Railway station	04/04/2017	bird	Prunella modularis	Hedge Accentor	Singing on Platform 1.
SE367070	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE358080	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE363074	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE360072	Barnsley	25/01/2009	bird	Prunella modularis	Hedge Accentor	
SE3606		01/01/1994	bird	Pyrrhula pyrrhula	Bullfinch	
SE362066	Eastern sector	12/12/2015	bird	Pyrrhula pyrrhula	Bullfinch	3 birds in hedgerow trees
SE362064	Scrub at north-western end of site	30/09/2016	bird	Pyrrhula pyrrhula	Bullfinch	Calling in scrubby woodland at north-western end of site.
SE363066	River Dearne	09/12/2016	bird	Pyrrhula pyrrhula	Bullfinch	Calling in scrub on river bank.
SE364064	Woodland along northern edge of site	21/10/2016	bird	Pyrrhula pyrrhula	Bullfinch	Several calling in edge of woodland.
SE363064	Woodland along northern edge of site	25/10/2016	bird	Pyrrhula pyrrhula	Bullfinch	Male in edge of woodland.
SE347078	Car park off Smithies Lane	25/02/2016	bird	Pyrrhula pyrrhula	Common Bullfinch	In scrub near car park.
SE362064	Woodland at northern edge of hill	25/10/2016	bird	Pyrrhula pyrrhula	Bullfinch	Calling in densely planted trees.
SE362067	Cliffe Woods	16/12/2016	bird	Pyrrhula pyrrhula	Bullfinch	by call
SE3507	Old Mill Lane 54	01/01/2005	bird	Pyrrhula pyrrhula	Bullfinch	breeding
SE349075		09/02/2013	bird	Pyrrhula pyrrhula	Bullfinch	
SE36100675	Hoyle Mill Country Park	09/02/2013	bird	Pyrrhula pyrrhula	Bullfinch	
SE3508	West	29/01/2013	bird	Pyrrhula pyrrhula	Bullfinch	
SE348074	Southern section of dam	26/02/2013	bird	Rallus aquaticus	Water Rail	Foraging around fishing platform on west bank.
SE344079		13/03/2011	bird	Cygnus olor	Mute Swan	
SE3407		14/05/1989	bird	Cygnus olor	Mute Swan	
SE3407		27/12/1990	bird	Cygnus olor	Mute Swan	
SE3407		27/12/1990	bird	Aythya ferina	Pochard	
SE344080	Barnsley Canal at Wilthorpe	03/05/2012	bird	Parus montanus	Willow Tit	
SE3507	Old Mill Lane 54	01/01/2005	bird	Parus montanus	Willow Tit	breeding
SE3606		01/01/1994	bird	Poecile montanus	Willow Tit	
SE362081	Land at Garden House Farm, Monk Bretton	29/09/2010	terrestrial mammal	Meles meles	Badger	Tracks through the site
SE360077	Monk Bretton Reservoir	29/09/2010	terrestrial mammal	Meles meles	Badger	Signs of activity
SE3506	Barnsley MDC	08/08/2005	terrestrial mammal	Chiroptera	Bats	roost probably Pipistrelle
SE341070	Huddersfield Road Railway Bridge	14/06/1991	terrestrial mammal	Chiroptera	Bats	
SE342068	Western Street	17/01/1998	terrestrial mammal	Chiroptera	Bats	
SE3406	Barnsley Tech College	12/09/1978	terrestrial mammal	Chiroptera	Bats	
SE3406	Hopwood Street	23/07/1987	terrestrial mammal	Chiroptera	Bats	
SE3406	Regent Street South Gardens	22/06/1989	terrestrial mammal	Chiroptera	Bats	
SE3407	Treecrest Rise, Hallbank	30/09/1990	terrestrial mammal	Chiroptera	Bats	
SE339071	Kensington Road, 18	06/07/1992	terrestrial mammal	Chiroptera	Bats	
SE3406	Central Offices/ Market	27/08/1987	terrestrial mammal	Chiroptera	Bats	
SE351072	Old Mill Lane, A61 Culvert	01/06/1994	terrestrial mammal	Chiroptera	Bats	
SE344068	Exchange County Way	01/09/2000	terrestrial mammal	Pipistrellus pipistrellus 45kHz	45 Khz Pipistrelle	2 trapped in building
SE3406	80 Sackville Street	15/08/2014	terrestrial mammal	Pipistrellus pipistrellus	Common Pipistrelle	roost (known for years)
SE353072	Roy Hall Cash and Carry	01/01/1990	terrestrial mammal	Pipistrellus	Pipistrelle Bat species	Roost in roof cavity between plasterboard and felt, bats entering under fascia board. High
SE359068	nature pond, Dearne Valley Park	28/06/2001	terrestrial mammal	Arvicola terrestris	Water Vole	2 seen
SE359068	nature pond	28/06/2001	terrestrial mammal	Arvicola terrestris	Water Vole	2 seen
SE359068	nature pond, Dearne Valley Park	28/06/2001	terrestrial mammal	Arvicola terrestris	Water Vole	2 seen

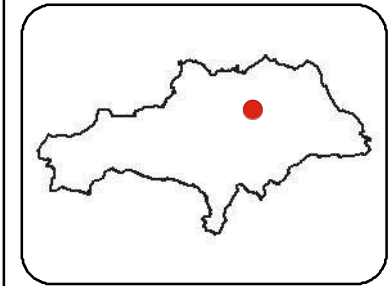


Barnsley Biological Records Centre

Statutory and Non Statutory
Local Wildlife Sites
Within the Search Area

Land off
Tibwell Street

- Location
- 1.5km Radius
- Local Wildlife Sites
- LNR Natural England
- Sheffield City Boundary



Map Created - 09 May 2017



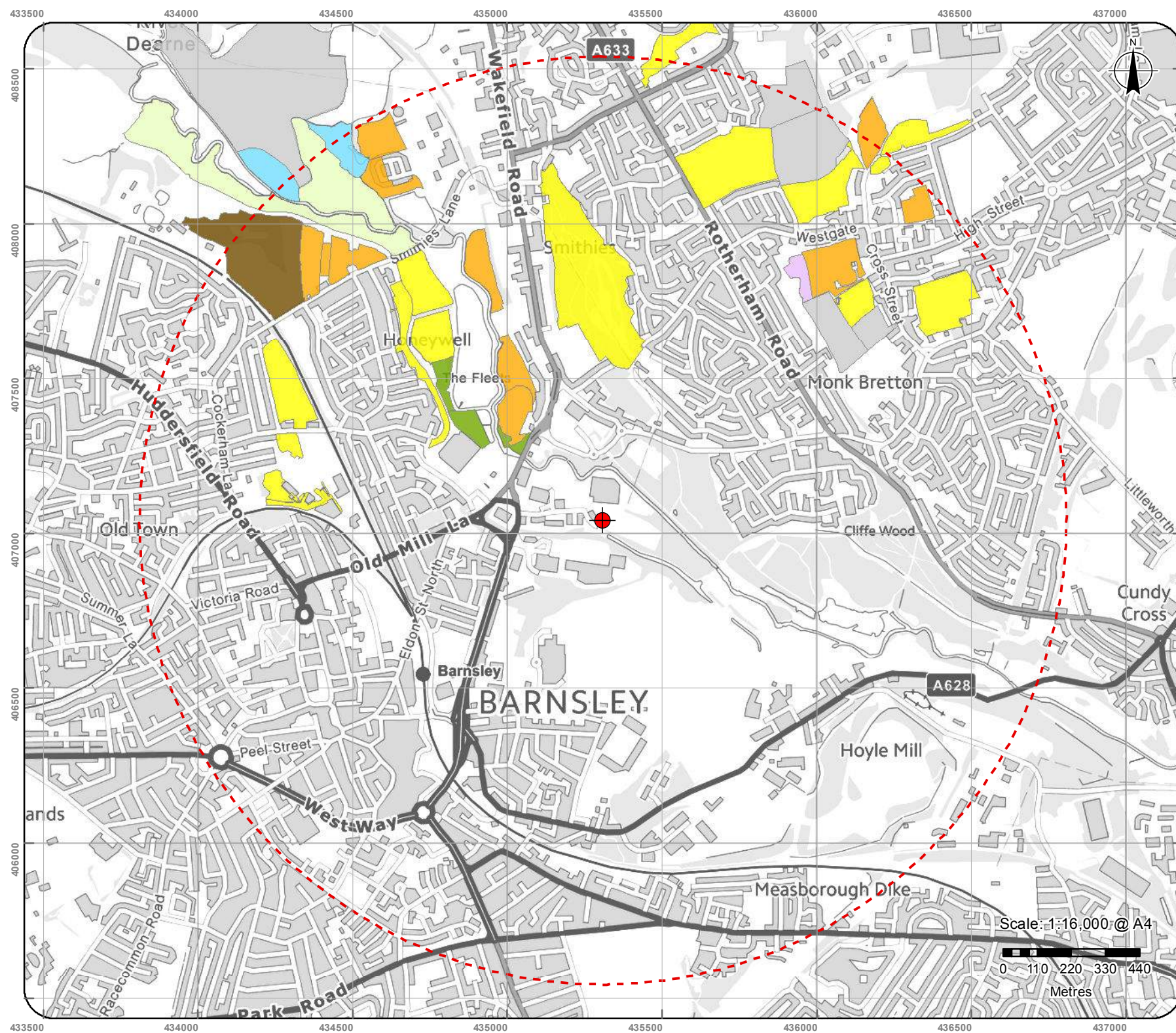
BARNSELY
Metropolitan Borough Council

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Scale: 1:22,000 @ A4

0 110 220 330 440

Metres

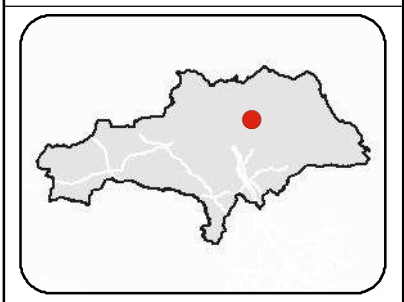


Barnsley Biological Records Centre

Areas of Interest from the National Habitat Inventories.

Land off Tibwell Street

- Location
- 1.5km Radius
- Habitat**
 - Amenity grassland
 - Arable
 - Improved grassland
 - Marsh / Marshy grassland
 - Semi-improved neutral grassland
 - Semi-natural broadleaved woodland
 - Unimproved acid grassland
 - Unimproved neutral grassland
 - Barnsley District Boundary



Map Created - 09 May 2017

**BARNLEY**
Metropolitan Borough Council

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54. Old Mill Lane Culvert Bat Roost

LWS Assessment and Phase 1 Survey

Prepared by
TEP

for

Barnsley Metropolitan Borough Council

January 2011
(Edited December 2011)

Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

T: 01925 844004
F: 01925 844002
E: tep@tep.uk.com
W: www.tep.uk.com



Site Name:	Old Mill Lane Culvert Bat Roost
Site Area:	10.27ha
Survey Date:	September 2010
Nearest Settlement:	Honeywell, Smithies
Grid Reference at Centre:	SE34979, 07486
Surveyor(s)	LAC, VG, RH (2010) Eric Bennett, Bat Consultancy (Mar 2004) Pete Middleton, Environmental Consultancy (2011)

Site Description:

This site is located on the River Dearne, where it flows in a south-easterly direction just to the north-east of Barnsley Town Centre. The valley is crossed by the A61, heading from the town centre. The river contains a series of culverts associated with the road, the river and former mill races. The main culvert is approximately 2m wide by 1.5m and is estimated to be 90m long. It runs parallel to Old Mill Road to the former mill site and contains five side tunnels along its length which pass beneath Old Mill Road. Since 1990 this culvert has been known to support an important maternity roost for Daubenton's bat (*Myotis daubentonii*). The colony emerges from the grilled culvert entrance to feed along the river course and over the large waterbody at The Fleets (TN4), lying within the site boundary to the north-west of the A61.

The course of the Dearne is tree-lined, both upstream and downstream of the A61 bridge, with broader woodlands and plantations outside the site boundaries downstream. Downstream, the site is confined to a narrow strip along the river course where the banks have a lot of sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*) in the stretch as far east as the gasworks. Beyond that, to the south-east, the banks are lower with silver birch (*Betula pendula*) and goat willow (*Salix caprea*) dominated scrub/woodland with taller alders (*Alnus glutinosa*) along the river edge.

Upstream of the A61 the landscape of the floodplain opens out into recreation grounds and bodies of standing water. There is still a fringe of mixed deciduous tree growth along the heavily modified river banks to the north-west of the A61 bridge. Giant hogweed (*Heracleum mantegazzianum*) was noted both upstream and downstream of Old Mill Lane.

South of The Fleets there is a large area of plantation within the site (TN7), north-east of the superstore. There is also broadleaved woodland preset on the opposite bank of the Dearne (TN8). Former lagoons (TN6) that survive as tree-lined bodies of standing water are also present south of The Fleets. The Fleets is a large open waterbody with generally sparsely vegetated banks and little marginal vegetation present. The margins which are vegetated contain mainly reed sweet-grass (*Glyceria maxima*) and great willowherb (*Epilobium hirsutum*). As well as being used as a foraging resource for local bats, these waters are also fished by local anglers. There is a neutral grassland dominated bank with scattered trees and scrub (TN3, TN5) located between the large waterbody and the river. To the north scattered growth continues along the river course and there is some goat willow scrub (TN1, TN2). North-west of Smithies Lane the valley opens out into a much more rural landscape, beyond the site boundaries.

Important Species:

Daubenton's bat is a European protected species (receiving full protection in the UK under the Conservation of Habitats and Species Regulations 2010) and also receives some protection under the wildlife and Countryside Act 1981 as amended. All bats are considered as Local Biodiversity Action Plan Priority species. The Daubenton's colony which occupies the culvert near the bridge of the A61 is a maternity colony. Counts in September 2010, near the end of the maternity season, confirmed 67 bats exiting via the grilled culvert entrance. Significant proportions of the colony turned immediately to pass under the bridge, foraging along the river corridor to The Fleets. Smaller numbers also headed downstream. Common pipistrelle (*Pipistrellus pipistrellus*) were also abundant and foraging upstream and downstream of the culvert.

Giant hogweed is a Schedule 9 listed invasive species and poses a risk to public health and safety. Japanese knotweed and Himalayan balsam, also Schedule 9 species, occur throughout the site along the river banks and under the tree cover

The corridor supports breeding kingfisher (*Alcedo atthis*) a schedule 1 species, UKBAP breeding willow tit (*Poecile montanus*), bullfinch (*Pyrrhula pyrrhula*) and song thrush (*Turdus philomelos*).

Additionally, otter (*Lutra lutra*) has been recorded in 2011 on the River Dearne.

Target Note:	TN1	
Habitat:	Scattered scrub and trees	
Species List:		
Scientific Name	Common Name	Frequency
<i>Crataegus monogyna</i>	Hawthorn	D
<i>Acer pseudoplatanus</i>	Sycamore	F
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Salix caprea</i>	Goat Willow	F
<i>Salix fragilis</i>	Crack Willow	F
<i>Sambucus nigra</i>	Elder	F
<i>Urtica dioica</i>	Nettle	F
<i>Alliaria petiolata</i>	Garlic Mustard	O
<i>Angelica sylvestris</i>	Wild Angelica	O
<i>Artemisia vulgaris</i>	Mugwort	O
<i>Betula pendula</i>	Silver Birch	O
<i>Corylus avellana</i>	Hazel	O
<i>Dryopteris filix-mas</i>	Male-fern	O
<i>Elymus caninus</i>	Bearded Couch	O
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Geum urbanum</i>	Wood Avens	O
<i>Rosa canina</i> agg.	Dog Rose	O
<i>Rubus idaeus</i>	Raspberry	O
<i>Stachys sylvatica</i>	Hedge Woundwort	O
<i>Symphytum x uplandicum</i>	Russian Comfrey	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Aegopodium podagraria</i>	Ground-elder	R
<i>Circaea lutetiana</i>	Enchanter's Nightshade	R
<i>Fraxinus excelsior</i>	Ash	R
<i>Malva moschata</i>	Musk Mallow	R
<i>Phyllitis scolopendrium</i>	Hart's-tongue	R
<i>Silene dioica</i>	Red Campion	R
<i>Stellaria holostea</i>	Greater Stitchwort	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN2	
Habitat:	Neutral grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Agrostis stolonifera</i>	Creeping Bent	F
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Plantago lanceolata</i>	Ribwort Plantain	F
<i>Trifolium pratense</i>	Red Clover	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Anthriscus sylvestris</i>	Cow Parsley	O
<i>Arctium minus</i>	Lesser Burdock	O
<i>Centaurea nigra</i>	Knapweed	O
<i>Elytrigia repens</i>	Common Couch	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Lolium perenne</i>	Ryegrass	O
<i>Odontites verna</i>	Red Bartsia	O
<i>Plantago major</i>	Greater Plantain	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Taraxacum</i> sp.	Dandelion species	O
<i>Taraxacum</i> sp.	Dandelion	O
<i>Medicago lupulina</i>	Black Medick	R
<i>Senecio jacobaea</i>	Ragwort	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN3	
Habitat:	Broadleaved woodland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Acer pseudoplatanus</i>	Sycamore	A
<i>Fallopia japonica</i>	Japanese Knotweed	A
<i>Fraxinus excelsior</i>	Ash	A
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Chamerion angustifolium</i>	Rosebay Willowherb	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Urtica dioica</i>	Nettle	F
<i>Alnus glutinosa</i>	Alder	O
<i>Artemisia vulgaris</i>	Mugwort	O
<i>Betula pendula</i>	Silver Birch	O
<i>Centaurea nigra</i>	Knapweed	O
<i>Corylus avellana</i>	Hazel	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Dryopteris filix-mas</i>	Male-fern	O
<i>Elymus caninus</i>	Bearded Couch	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Heracleum mantegazzianum</i>	Giant Hogweed	O
<i>Leucanthemum vulgare</i>	Oxeye daisy	O
<i>Rosa canina</i> agg.	Dog Rose	O
<i>Salix caprea</i>	Goat Willow	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Sambucus nigra</i>	Elder	O
<i>Symphytum x uplandicum</i>	Russian Comfrey	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Cornus sanguinea</i>	Dogwood	R

<i>Hypericum perforatum</i>	Perforate St John's-wort	R
<i>Linaria vulgaris</i>	Common Toadflax	R
<i>Quercus petraea</i>	Sessile Oak	R
<i>Scrophularia auriculata</i>	Water Betony	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN4	
Habitat:	Open water, swamp	
Species List:		
Scientific Name	Common Name	Frequency
<i>Glyceria maxima</i>	Reed Sweet-grass	D
<i>Epilobium hirsutum</i>	Great Willowherb	F
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Stachys palustris</i>	Marsh Woundwort	O
<i>Typha latifolia</i>	Greater Reedmace	O
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN5		
Habitat:	Scattered scrub, scattered trees		
Species List:			
Scientific Name	Common Name	Frequency	
<i>Crataegus monogyna</i>	Hawthorn	D	
<i>Salix fragilis</i>	Crack Willow	D	
<i>Rubus fruticosus</i> agg.	Bramble	F	
<i>Urtica dioica</i>	Nettle	F	
<i>Alnus glutinosa</i>	Alder	O	
<i>Corylus avellana</i>	Hazel	O	
<i>Salix caprea</i>	Goat Willow	O	
<i>Sambucus nigra</i>	Elder	O	
<i>Acer platanoides</i>	Norway Maple	R	
<i>Calystegia silvatica</i>	Large Bindweed	R	
<i>Geum urbanum</i>	Wood Avens	R	

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN6	
Habitat:	Open water, scattered trees	
Species List:		
Scientific Name	Common Name	Frequency
<i>Alnus glutinosa</i>	Alder	D
<i>Geum urbanum</i>	Wood Avens	F
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Moss</i> sp.	Moss species	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Salix fragilis</i>	Crack Willow	F
<i>Typha latifolia</i>	Greater Reedmace	F
<i>Agrostis stolonifera</i>	Creeping Bent	O
<i>Alliaria petiolata</i>	Garlic Mustard	O
<i>Betula pendula</i>	Silver Birch	O
<i>Calystegia silvatica</i>	Large Bindweed	O
<i>Corylus avellana</i>	Hazel	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Juncus articulatus</i>	Jointed Rush	O
<i>Lycopus europaeus</i>	Gypsywort	O

<i>Salix caprea</i>	Goat Willow	O
<i>Sambucus nigra</i>	Elder	O
<i>Carex</i> sp.	Sedge species	R
<i>Cornus sanguinea</i>	Dogwood	R
<i>Plantago major</i>	Greater Plantain	R
<i>Pteridium aquilinum</i>	Bracken	R
<i>Scrophularia auriculata</i>	Water Betony	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN7	
Habitat:	Broadleaved plantation	
Species List:		
Scientific Name	Common Name	Frequency
<i>Acer campestre</i>	Field Maple	F
<i>Betula pendula</i>	Silver Birch	F
<i>Cornus sanguinea</i>	Dogwood	F
<i>Corylus avellana</i>	Hazel	F
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN8	
Habitat:	Semi-natural broadleaved woodland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Acer pseudoplatanus</i>	Sycamore	D
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Fagus sylvatica</i>	Beech	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Sambucus nigra</i>	Elder	O
<i>Heracleum mantegazzianum</i>	Giant Hogweed	R
<i>Solidago virgaurea</i>	Goldenrod	R
D = Dominant. A = Abundant. F = Frequent. O = Occasional. R = Rare		

Management Issues:

Perhaps the greatest priority is to ensure that any management of the road surface, riverbanks and traffic flows does not deleteriously affect the important bat roost areas below the ground surface. It is essential to the integrity of the bat roost that suitable flyways are maintained and protected to preserve foraging and dispersal routes for the bats from the roost to the main feeding areas along the River Dearne and over The Fleets and other local waterbodies.

Invasive species occur throughout the site. Of primary concern is the presence of giant hogweed, where it occurs in locations that could be accessed by members of the public, as this species presents a risk to public health and safety.

Diversity:

This site does not hold any significant botanical diversity and the aquatic habitats are generally man-made or heavily modified. However the bat roost is of national ecological value and is the primary reason for the recommended designation of this site.

Naturalness:

The banks of the River Dearne are highly modified throughout the length of this narrow linear site. Beyond the edges of the river course there are a series of embankments and artificially created waterbodies. However, the bat roost occupies totally artificial habitat, showing how some species adapt well to unnatural structures within their habitats. Most of the plant species present here are locally native and no doubt help to support a range of native invertebrates, birds and mammals.

Rare or Exceptional Features:

An important feature is the old culvert complex and access points supporting the Daubenton's bat roost. This maternity colony is considered to be the most important for this species in the Borough and is thought to be of national importance due to its size. Previous counts have regularly recorded over 250 breeding females. The peak count was recorded in 1990 identified 412 bats and included juveniles.

Counts in 2010 may appear to be considerably lower than these earlier records, but it must be appreciated that the 2010 count was made late in the maternity season, when the colony is likely to be dispersing. The 2010 count, though likely to under record the colony size, is still above the average colony size for this species, normally counted at around 20-50 individuals.

The course of the River Dearne throughout the length of the site is also a feature of value.

Fragility:

The maternity roost is highly vulnerable to disturbance at inappropriate times of year during the course of any road management activity, redevelopment at the former mill or any changes to the river corridor. Even minor works to the road or other surfaces over the culvert could lead to significant disturbance. Any modification to the road surface above the roost chamber, which is situated very close below the surface, could potentially kill or injure a large number of bats in a very short space of time.

Development activities, including road improvements, can however be appropriately mitigated under licence. Of significant concern though is the loss of riverside trees and scrub on the other side of Old Mill Lane. Any fragmentation of the tree lined corridors that connect the maternity roost with the important feeding areas upstream could be disastrous, potentially resulting in roost failure. The stretch of river connecting the roost site to the closest primary foraging habitat at The Fleets contains a large weir. The majority of bats have been recorded leaving the channel of the river just on the other side of Old Mill Road to fly and forage in the tree/scrub area along river bank in order to bypass the weir. These riverside habitats are therefore crucial to the maintenance of the roost.

The maternity colony is vulnerable to disturbance at the roost entrance at inappropriate times. The entrance is grilled, but the grill was unlocked at the time of the 2010 roost count.

Another threat to the integrity of the roost is fluctuating water levels. Flooding of the culvert could result in complete loss of the colony.

The river itself is vulnerable to contamination incidents along its length upstream

that could spread downstream and affect this site with possibly damaging pollutants.

Typicalness:

The modified water course is fairly typical for the Barnsley area, reflecting the need to protect the nearby town centre from flooding incidents.

The use of the culvert by Daubenton's bats is not unusual for this species, but the large colony size is very uncommon. Only two or three Daubenton's roosts approaching the size supported at this site have been recorded in Britain. The roost is of high ecological value.

The range of plant species present is generally typical for urban riparian habitats.

Recorded History & Cultural Associations:

There is a long history of exploitation of the river and its banks along this stretch of the Dearne. The name Old Mill Lane relates to former milling activities here. The mill and mill race are shown on the 1779 Enclosure Map, but presumably date from long before that time.

The high slope of Burton Bank, just to the east, is the site for a Quaker burial ground established in the 1650s, indicating the length of time this section of the valley has been locally important.

The disused Barnsley Canal formerly ran parallel to the River Dearne, just to the south and west of the site. There is much social and industrial history locally that could be usefully researched to add value to the interpretation of this site.

Connectivity within the Landscape:

The River Dearne forms an integral part of this site, with strong links along the valley to other sites of wildlife value, both upstream and downstream. Beyond the flat valley bottom here the surrounds are mainly urban/industrial and built-up, being so close to the centre of Barnsley.

The bankside trees and scrub along the river are vital for the future viability of the Daubenton's bat roost.

Value for appreciation of Nature and Learning:

The Dearne Way runs along the valley, just to the west and south of the site, between the river and the course or the disused canal. There are also public footpaths along the northern bank of the river downstream of Old Mill Lane. The site is well connected by roads and pavements with Barnsley centre, just to the south-west.

The proximity of this site to Barnsley makes it very accessible for a number of local schools however bat roosts do not lend themselves to large scale visits/disturbance.

Recommendations:

The historic records of the Daubenton's maternity colony could potential quality the site for notification as a Site of Special Scientific Interest (it having been, in the height of the maternity season, an exceptionally large roost with a long history of use at this site). Further monitoring over the maternity season (potentially over more than one season) is essential in order to verify the current size of the roost.

The size of the Daubenton's maternity colony is certainly sufficient to warrant designation of this site as a Local Wildlife Site under the species selection criteria. The site boundaries should include all bankside habitats leading up to Smithies Lane and down to the adjacent Cliff Wood LWS downstream.

The future of the maternity colony is dependant upon the avoidance of disturbing or damaging activities that could affect the integrity of the culvert and of the roost chamber. Protection protocols should be established and advertised to ensure that awareness of the roost and roost chamber is raised prior to and during any road works or development activities. The potential requirement for a licence should be identified for any such works.

A management plan should ideally be formulated to encapsulate monitoring and maintenance objectives, such as inspecting the condition of the roost entrance and completing any necessary remedial works and undertaking river corridor habitat improvements that will strengthen corridors (particularly where structural habitats are missing) and alleviate flood risk.

Adjacent sites should also be monitored to establish their importance for foraging and identify other roost sites. The culvert should also be monitored seasonally to establish accurate patterns of use, particularly whether any hibernation occurs in Daubenton's bats or any other bat species.

Action:

Adopt as Local Wildlife Site

Monitor maternity colony through the maternity season to determine whether the site qualifies for notification as a SSSI

Establish whether the site is use for hibernation roosting by Daubenton's bats or any other species of bat

Establish protection and management protocols for the long-term security of the roost



25. Barnsley Canal at Wilthorpe

LWS Assessment and Phase 1 Survey

Prepared by
TEP

for

Barnsley Metropolitan Borough Council

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Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

T: 01925 844004
F: 01925 844002
E: tep@tep.uk.com
W: www.tep.uk.com



Site Name:	Barnsley Canal at Wilthorpe
Site Area:	33.36ha
Survey Date:	September 2010
Nearest Settlement:	Wilthorpe
Grid Reference at Centre:	SE33651, 08340
Surveyor(s)	VG, LAC, PG

Site Description:

The Barnsley Canal at Wilthorpe LWS Site includes a stretch of the disused Barnsley Canal and adjacent pastoral farmland. The River Dearne is to the north of the site and an active railway line lies to the south, with a mix of arable and pastoral farmland comprising the majority of the wider area. An old section of the river, which was cut off following channel straightening upstream, forms part of the northern site boundary.

The majority of the disused canal is now swamp with reed sweet-grass (*Glyceria maxima*) dominant. At the eastern end of the canal, Himalayan balsam (*Impatiens glandulifera*) and greater reedmace (*Typha latifolia*) are abundant. Greater reedmace and reed sweet-grass are abundant throughout the site in areas of standing water and swamp. Three areas of standing water remain in the section of the canal. An area of standing water at the eastern end of the canal section is dominated by least duckweed (*Lemna minuta*). Rigid hornwort (*Ceratophyllum demersum*) is abundant and Himalayan balsam (*Impatiens glandulifera*) is rare. In an area of standing water in the centre, there is a patch of floating pennywort (*Hydrocotyle ranunculoides*). Great willowherb (*Epilobium hirsutum*) is abundant in the most westerly area of standing water.

The majority of the land surrounding the canal consists of semi-improved neutral grassland, with a variety of habitats found within the grassland. The largest parcel of land is in the west of the site, south of the canal. At the western end of this area lies unimproved neutral grassland, where red fescue (*Festuca rubra*) is abundant. To the east of this a willow carr dominated by grey willow (*Salix cinerea*) and a pond. Branched burr-reed (*Sparganium erectum*) and a pond weed species (*Potamogeton* sp.) are frequent within the pond. An area of swamp surrounded by semi-natural broadleaved woodland lies in the centre of the parcel of land, where sessile oak (*Quercus petraea*) and silver birch (*Betula pendula*) are dominant. To the west of the woodland lies an area of semi-improved acid grassland dominated by mat-grass (*Nardus stricta*). Within the parcel of land there are areas of dense scrub where hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and goat willow (*Salix caprea*) are dominant. There are also areas of tall ruderal that are dominated by creeping thistle (*Cirsium arvense*). A species-poor defunct hedge is present in the south east of the area. The hedge contains English (*Quercus robur*) and sessile oaks, field maple (*Acer campestre*), European ash (*Fraxinus excelsior*) and European beech (*Fagus sylvatica*). South of the hedge lies an area of marshy grassland.

To the north of the canal lies a second parcel of land where there are two areas of swamp with some standing water. Reed sweet-grass and greater reedmace are dominant. There is also marshy grassland present within this parcel of land, where hard rush (*Juncus inflexus*) is abundant.

Along the eastern section of the canal runs a species-poor intact hedge along the northern bank, where there are occasional crab apple (*Malus sylvestris*). Adjacent to the canal and the former towpath there is a strip of modified neutral grassland dominated by false-oat grass (*Arrhenatherum elatius*).

To the north of the hedge lies a third parcel of land where there are areas of dense scrub. Within the scrub there is a scattering of broadleaved trees which include wych elm (*Ulmus glabra*), crack willow (*Salix fragilis*) and white willow (*Salix alba*). Bluebell (*Hyacinthoides non-scripta*) and Japanese knotweed are occasional in this area, and Himalayan balsam is frequent. To the west of the dense scrub lies a small area of unimproved acid grassland and marshy grassland, dominated by tufted hair-grass (*Deschampsia cespitosa*). To the north lies the old course of the River Dearne, which consists of standing water and swamp. In the standing water Nuttall's pondweed (*Elodea nuttallii*) is frequent and water starwort species (*Callitriche* sp.) occurs occasionally. Buttonweed (*Cotula coronopifolia*) is abundant on the banks. Greater reed-mace is the dominant species in the swamp areas and lesser water-parsnip (*Berula erecta*) occurs occasionally.

In the southeast corner of the site there is an area of tall ruderal, where Himalayan balsam is present along the river channel. At Smithy's Bridge there is a species-poor hedge and trees, which contains Japanese knotweed (*Fallopia japonica*). The hedge connects the river corridor to a large area of swamp to the north.

Important Species:

Ancient woodland indicator species remote sedge (*Carex remota*) (TN 11), bluebell (*Hyacinthoides non-scripta*), wood speedwell (*Veronica montana*) (TN 3) and sessile oak (*Quercus petraea*) (TN 11) were found on site.

UKBAP species: reed bunting (*Emberiza schoeniclus*), grasshopper warbler (*Locustella naevia*), willow tit (*Poecile montanus*), dunnoek (*Prunella modularis*), bullfinch (*Pyrrhula pyrrhula*) and song thrush (*Turdus philomelos*) all breed on the site and water rail (*Rallus aquaticus*), a Bird of Conservation Concern (Amber List species) also breeds and winters on site.

The section of canal with standing water and the cut off section of the River Dearne offer potential habitat for great crested newts (*Triturus cristatus*) and water vole (*Arvicola aquaticus*). It is likely that UKBAP priority species common toad (*Bufo bufo*) is present in these areas.

Target Note:	TN 1	
Habitat:	Species-poor hedge	
Species List:		
Scientific Name	Common Name	Frequency
<i>Crataegus monogyna</i>	Hawthorn	D
<i>Rubus fruticosus</i> agg.	Bramble	A
<i>Hedera helix</i>	Ivy	O
<i>Lonicera periclymenum</i>	Honeysuckle	O
<i>Malus sylvestris</i>	Crab-apple	O
<i>Rosa canina</i> agg.	Dog Rose	O
<i>Sambucus nigra</i>	Elder	O
<i>Silene vulgaris</i>	Bladder Campion	O
<i>Torilis japonica</i>	Upright Hedge-parsley	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 2	
Habitat:	Swamp	
Species List:		
Scientific Name	Common Name	Frequency
<i>Glyceria maxima</i>	Reed Sweet-grass	D
<i>Impatiens glandulifera</i>	Himalayan Balsam	A
<i>Typha latifolia</i>	Greater Reedmace	A
<i>Epilobium hirsutum</i>	Great Willowherb	F
<i>Juncus effusus</i>	Soft Rush	F
<i>Lycopus europaeus</i>	Gypsywort	F
<i>Mentha aquatica</i>	Water Mint	F
<i>Berula erecta</i>	Lesser Water-parsnip	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Equisetum arvense</i>	Field Horsetail	O
<i>Juncus inflexus</i>	Hard Rush	O
<i>Persicaria amphibia</i>	Amphibious Bistort	O
<i>Phalaris arundinacea</i>	Reed Canary-grass	O
<i>Ranunculus acris</i>	Meadow Buttercup	O
<i>Rubus fruticosus</i> agg.	Bramble	O
<i>Salix caprea</i>	Goat Willow	O
<i>Salix cinerea</i>	Grey Willow	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Solanum dulcamara</i>	Bittersweet	O
<i>Stachys palustris</i>	Marsh Woundwort	O
<i>Caltha palustris</i>	Marsh-marigold	R
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	R
<i>Equisetum sylvaticum</i>	Wood Horsetail	R
<i>Filipendula ulmaria</i>	Meadowsweet	R
<i>Rumex sanguineus</i>	Wood Dock	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 3	
Habitat:	Dense scrub and scattered broadleaved trees	
Species List:		
Scientific Name	Common Name	Frequency
<i>Crataegus monogyna</i>	Hawthorn	D
<i>Betula pendula</i>	Silver Birch	A
<i>Rubus fruticosus</i> agg.	Bramble	A
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Salix fragilis</i>	Crack Willow	F
<i>Sambucus nigra</i>	Elder	F
<i>Crepis capillaris</i>	Smooth Hawk's-beard	R
<i>Dryopteris dilatata</i>	Broad Buckler-fern	R
<i>Fallopia japonica</i>	Japanese Knotweed	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Hedera helix</i>	Ivy	O
<i>Hyacinthoides non-scripta</i>	Bluebell	O
<i>Quercus robur</i>	English Oak	O
<i>Salix alba</i>	White Willow	O
<i>Salix cinerea</i>	Grey Willow	O
<i>Ulmus glabra</i>	Wych Elm	O
<i>Veronica montana</i>	Wood Speedwell	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 4	
Habitat:	Unimproved acid grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Festuca rubra</i>	Red Fescue	D
<i>Agrostis capillaris</i>	Common Bent	F
<i>Galium saxatile</i>	Heath Bedstraw	F
<i>Juncus effusus</i>	Soft Rush	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Potentilla erecta</i>	Tormentil	O
<i>Rumex acetosa</i>	Common Sorrel	O
<i>Succisa pratensis</i>	Devil's-bit Scabious	O
<i>Luzula multiflora</i>	Heath Woodrush	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 5	
Habitat:	Unimproved neutral grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Holcus lanatus</i>	Yorkshire-fog	D
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Centaurea nigra</i>	Knapweed	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Chamerion angustifolium</i>	Rosebay Willowherb	O
<i>Juncus conglomeratus</i>	Compact Rush	O
<i>Poa pratensis</i>	Smooth Meadow-grass	O
<i>Stellaria graminea</i>	Lesser Stitchwort	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Rumex acetosa</i>	Common Sorrel	O
<i>Senecio jacobaea</i>	Ragwort	O
<i>Ranunculus acris</i>	Meadow Buttercup	O
<i>Plantago major</i>	Greater Plantain	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Cerastium fontanum</i>	Common Mouse-ear	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Odontites verna</i>	Red Bartsia	R
<i>Tanacetum vulgare</i>	Tansy	R
<i>Cirsium palustre</i>	Marsh Thistle	R
<i>Crepis capillaris</i>	Smooth Hawk's-beard	R
<i>Veronica chamaedrys</i>	Germander Speedwell	R
<i>Carex ovalis</i>	Oval Sedge	R
<i>Cruciata laevipes</i>	Crosswort	R
<i>Pimpinella major</i>	Greater Burnet-saxifrage	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 6	
Habitat:	Unimproved acid grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Nardus stricta</i>	Mat-grass	D
<i>Agrostis capillaris</i>	Common Bent	A
<i>Festuca ovina</i>	Sheep's Fescue	F
<i>Calluna vulgaris</i>	Heather	O
<i>Rumex acetosella</i>	Sheep's Sorrel	O
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN7	
Habitat:	Modified neutral grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Arrhenatherum elatius</i>	False Oat-grass	D
<i>Agrostis stolonifera</i>	Creeping Bent	F
<i>Cirsium arvense</i>	Creeping Thistle	F
<i>Lolium perenne</i>	Ryegrass	F
<i>Plantago lanceolata</i>	Ribwort Plantain	F
<i>Poa annua</i>	Annual Meadow-grass	F
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Trifolium pratense</i>	Red Clover	F
<i>Urtica dioica</i>	Nettle	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Anthriscus sylvestris</i>	Cow Parsley	O
<i>Arctium minus</i>	Lesser Burdock	O
<i>Aster sp.</i>	Michaelmas-daisy species	O
<i>Cerastium fontanum</i>	Common Mouse-ear	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Equisetum arvense</i>	Field Horsetail	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Hieracium sp.</i>	Hawkweed species	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Lathyrus pratensis</i>	Meadow Vetchling	O
<i>Linaria vulgaris</i>	Common Toadflax	O
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	O
<i>Odontites verna</i>	Red Bartsia	O
<i>Plantago major</i>	Greater Plantain	O
<i>Pteridium aquilinum</i>	Bracken	O
<i>Ranunculus acris</i>	Meadow Buttercup	O
<i>Rosa canina agg.</i>	Dog Rose	O
<i>Rubus fruticosus agg.</i>	Bramble	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Taraxacum sp.</i>	Dandelion species	O
<i>Trifolium repens</i>	White Clover	O
<i>Berberis sp.</i>	Garden Berberis	R
<i>Lupinus x regalis</i>	Lupin	R
<i>Polygonum aviculare</i>	Knotgrass	R
<i>Rumex acetosella</i>	Sheep's Sorrel	R
<i>Rumex sanguineus</i>	Wood Dock	R
<i>Stellaria graminea</i>	Lesser Stitchwort	R
<i>Torilis japonica</i>	Upright Hedge-parsley	R
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Target Note:	TN 8	
Habitat:	Marshy grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Alisma plantago-aquaticis</i>	Water-plantain	F
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Veronica beccabunga</i>	Brooklime	O
<i>Iris pseudacorus</i>	Yellow Flag Iris	O
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Ranunculus sp.</i>	Water-crowfoot species	O
<i>Juncus articulatus</i>	Jointed Rush	R
<i>Pulicaria dysenterica</i>	Fleabane	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 9	
Habitat:	Standing water	
Species List:		
Scientific Name	Common Name	Frequency
<i>Epilobium hirsutum</i>	Great Willowherb	A
<i>Glyceria maxima</i>	Reed Sweet-grass	A
<i>Alisma plantago-aquaticis</i>	Water-plantain	F
<i>Apium nodiflorum</i>	Fool's Watercress	F
<i>Lycopus europaeus</i>	Gypsywort	F
<i>Callitriche sp.</i>	Water Starwort species	O
<i>Juncus articulatus</i>	Jointed Rush	O
<i>Juncus effusus</i>	Soft Rush	O
<i>Lemna trisulca</i>	Ivy-leaved Duckweed	O
<i>Potamogeton sp.</i>	Pondweed species	O
<i>Ranunculus sceleratus</i>	Celery-leaved Buttercup	O
<i>Typha latifolia</i>	Greater Reedmace	O
<i>Bidens tripartita</i>	Trifid Bur-marigold	R
<i>Ranunculus sp.</i>	Water-crowfoot species	R
<i>Scutellaria galericulata</i>	Skullcap	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 10	
Habitat:	Semi-improved neutral grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Agrostis capillaris</i>	Common Bent	F
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Trifolium repens</i>	White Clover	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Centaurea nigra</i>	Knapweed	O
<i>Cynosurus cristatus</i>	Crested Dog's-tail	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Lolium perenne</i>	Ryegrass	O
<i>Plantago major</i>	Greater Plantain	O
<i>Poa annua</i>	Annual Meadow-grass	O
<i>Poa pratensis</i>	Smooth Meadow-grass	O
<i>Ranunculus acris</i>	Meadow Buttercup	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Rumex acetosa</i>	Common Sorrel	O
<i>Senecio jacobaea</i>	Ragwort	O
<i>Silene vulgaris</i>	Bladder Campion	O

<i>Succisa pratensis</i>	Devil's-bit Scabious	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Taraxacum</i> sp.	Dandelion species	O
<i>Trifolium pratense</i>	Red Clover	O
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	R
<i>Bromus hordeaceus</i>	Soft Brome	R
<i>Campanula rotundifolia</i>	Harebell	R
<i>Centranthus ruber</i>	Red Valerian	R
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	R
<i>Festuca ovina</i>	Sheep's Fescue	R
<i>Holcus lanatus</i>	Yorkshire-fog	R
<i>Holcus mollis</i>	Creeping Soft-grass	R
<i>Knautia arvensis</i>	Field Scabious	R
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	R
<i>Nardus stricta</i>	Mat-grass	R
<i>Odontites verna</i>	Red Bartsia	R
<i>Phleum pratense</i>	Timothy	R
<i>Potentilla reptans</i>	Creeping Cinquefoil	R
<i>Rumex acetosella</i>	Sheep's Sorrel	R
<i>Sambucus nigra</i>	Elder	R
<i>Stellaria graminea</i>	Lesser Stitchwort	R
<i>Veronica chamaedrys</i>	Germander Speedwell	R
<i>Vicia cracca</i>	Tufted Vetch	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN 11	
Habitat:	Semi-natural broad-leaved woodland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Betula pendula</i>	Silver Birch	D
<i>Quercus petraea</i>	Sessile Oak	D
<i>Crataegus monogyna</i>	Hawthorn	A
<i>Holcus mollis</i>	Creeping Soft-grass	A
<i>Agrostis capillaris</i>	Common Bent	F
<i>Corylus avellana</i>	Hazel	F
<i>Rosa canina</i> agg.	Dog Rose	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Carex remota</i>	Remote Sedge	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Deschampsia flexuosa</i>	Wavy Hair-grass	O
<i>Geum urbanum</i>	Wood Avens	O
<i>Hedera helix</i>	Ivy	O
<i>Urtica dioica</i>	Nettle	O
<i>Acer campestre</i>	Field Maple	R
<i>Stachys sylvatica</i>	Hedge Woundwort	R
<i>Torilis japonica</i>	Upright Hedge-parsley	R

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Target Note:	TN 12	
Habitat:	Species-poor hedge and trees	
Species List:		
Scientific Name	Common Name	Frequency
<i>Typha latifolia</i>	Greater Reedmace	D
<i>Crataegus monogyna</i>	Hawthorn	A
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Sambucus nigra</i>	Elder	F
<i>Ulmus glabra</i>	Wych Elm	F
<i>Urtica dioica</i>	Nettle	F
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Calystegia silvatica</i>	Large Bindweed	O
<i>Hedera helix</i>	Ivy	O
<i>Phalaris arundinacea</i>	Reed Canary-grass	O
<i>Prunus spinosa</i>	Blackthorn	O
<i>Pteridium aquilinum</i>	Bracken	O
<i>Rosa canina</i> agg.	Dog Rose	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Alnus glutinosa</i>	Alder	R
<i>Fallopia japonica</i>	Japanese Knotweed	R
<i>Fraxinus excelsior</i>	Ash	R

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Target Note:	TN 13	
Habitat:	Swamp	
Species List:		
Scientific Name	Common Name	Frequency
<i>Typha latifolia</i>	Greater Reedmace	D
<i>Angelica sylvestris</i>	Wild Angelica	O
<i>Berula erecta</i>	Lesser Water-parsnip	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Filipendula ulmaria</i>	Meadowsweet	O
<i>Juncus articulatus</i>	Jointed Rush	O
<i>Lotus pedunculatus</i>	Marsh Bird's-foot Trefoil	O
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Phalaris arundinacea</i>	Reed Canary-grass	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Scrophularia auriculata</i>	Water Betony	O
<i>Sparganium erectum</i>	Branched Bur-reed	O
<i>Alisma plantago-aquaticum</i>	Water-plantain	R
<i>Epilobium montanum</i>	Broad-leaved Willowherb	R
<i>Epilobium palustre</i>	Marsh Willowherb	R
<i>Galium palustre</i>	Marsh Bedstraw	R
<i>Juncus bufonius</i>	Toad Rush	R
<i>Rumex hydraphyllum</i>	Water Dock	R
<i>Salix cinerea</i> ssp. <i>cinerea</i>	Grey Willow	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 14	
Habitat:	Species-rich modified neutral grassland with some acidic areas	
Species List:		
Scientific Name	Common Name	Frequency
<i>Agrostis stolonifera</i>	Creeping Bent	F
<i>Festuca rubra</i>	Red Fescue	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	F
<i>Trifolium pratense</i>	Red Clover	F
<i>Trifolium repens</i>	White Clover	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Agrostis capillaris</i>	Common Bent	O
<i>Arrhenatherum elatius</i>	False Oat-grass	O
<i>Centaureum erythraea</i>	Common Centaury	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Knautia arvensis</i>	Field Scabious	O
<i>Lathyrus pratensis</i>	Meadow Vetchling	O
<i>Odontites verna</i>	Red Bartsia	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Plantago major</i>	Greater Plantain	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Anthriscus sylvestris</i>	Cow Parsley	R
<i>Carex otrubae</i>	False Fox-sedge	R
<i>Carex ovalis</i>	Oval Sedge	R
<i>Cerastium fontanum</i>	Common Mouse-ear	R
<i>Cirsium arvense</i>	Creeping Thistle	R
<i>Crataegus monogyna</i>	Hawthorn	R
<i>Cytisus scoparius</i>	Broom	R
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	R
<i>Festuca ovina</i>	Sheep's Fescue	R
<i>Hieracium sp.</i>	Hawkweed species	R
<i>Juncus conglomeratus</i>	Compact Rush	R
<i>Juncus effusus</i>	Soft Rush	R
<i>Juncus inflexus</i>	Hard Rush	R
<i>Linaria vulgaris</i>	Common Toadflax	R
<i>Potentilla anserina</i>	Silverweed	R
<i>Potentilla erecta</i>	Tormentil	R
<i>Ranunculus acris</i>	Meadow Buttercup	R
<i>Rosa canina agg.</i>	Dog Rose	R
<i>Rumex acetosa</i>	Common Sorrel	R
<i>Stellaria graminea</i>	Lesser Stitchwort	R
<i>Trifolium dubium</i>	Lesser Trefoil	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 15	
Habitat:	Swamp/standing water	
Species List:		
Scientific Name	Common Name	Frequency
<i>Typha latifolia</i>	Greater Reedmace	D
<i>Bidens tripartita</i>	Trifid Bur-marigold	F
<i>Callitriche</i> sp.	Water Starwort species	F
<i>Elodea nutallii</i>	Nuttall's Pondweed	F
<i>Glyceria maxima</i>	Reed Sweet-grass	F
<i>Agrostis stolonifera</i>	Creeping Bent	O
<i>Angelica sylvestris</i>	Wild Angelica	O
<i>Berula erecta</i>	Lesser Water-parsnip	O
<i>Calystegia</i> sp.	Bindweed species	O
<i>Chenopodium rubrum</i>	Red Goosefoot	O
<i>Impatiens glandulifera</i>	Himalayan Balsam	O
<i>Mentha aquatica</i>	Water Mint	O
<i>Persicaria amphibia</i>	Amphibious Bistort	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Alisma plantago-aquaticum</i>	Water-plantain	R
<i>Artemisia vulgaris</i>	Mugwort	R
<i>Epilobium hirsutum</i>	Great Willowherb	R
<i>Juncus bufonius</i>	Toad Rush	R
<i>Lycopus europaeus</i>	Gypsywort	R
<i>Myosotis scorpioides</i>	Water Forget-me-not	R
<i>Ranunculus sceleratus</i>	Celery-leaved Buttercup	R
<i>Scrophularia auriculata</i>	Water Betony	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 16		
Habitat:	Marshy grassland		
Species List:			
Scientific Name	Common Name	Frequency	
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	D	
<i>Holcus lanatus</i>	Yorkshire-fog	F	
<i>Typha latifolia</i>	Greater Reedmace	F	
<i>Juncus effusus</i>	Soft Rush	O	
<i>Plantago lanceolata</i>	Ribwort Plantain	O	
<i>Ranunculus repens</i>	Creeping Buttercup	O	
<i>Salix caprea</i>	Goat Willow	R	
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare			

Target Note:	TN 17	
Habitat:	Unimproved neutral grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Festuca rubra</i>	Red Fescue	A
<i>Achillea millefolium</i>	Yarrow	F
<i>Agrostis stolonifera</i>	Creeping Bent	F
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	F
<i>Centaurea nigra</i>	Knapweed	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Hypochaeris radicata</i>	Common Cat's-ear	F
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	F
<i>Pulicaria dysenterica</i>	Fleabane	F
<i>Vicia cracca</i>	Tufted Vetch	F
<i>Achillea ptarmica</i>	Sneezewort	O
<i>Carex hirta</i>	Hairy Sedge	O
<i>Carex nigra</i>	Common Sedge	O
<i>Carex otrubae</i>	False Fox-sedge	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Cynosurus cristatus</i>	Crested Dog's-tail	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Equisetum arvense</i>	Field Horsetail	O
<i>Juncus inflexus</i>	Hard Rush	O
<i>Knautia arvensis</i>	Field Scabious	O
<i>Lathyrus pratensis</i>	Meadow Vetchling	O
<i>Lolium perenne</i>	Ryegrass	O
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Salix caprea</i>	Goat Willow	O
<i>Trifolium pratense</i>	Red Clover	O
<i>Trifolium repens</i>	White Clover	O
<i>Agrostis capillaris</i>	Common Bent	R
<i>Carex panicea</i>	Carnation Sedge	R
<i>Gnaphalium uliginosum</i>	Marsh Cudweed	R
<i>Juncus conglomeratus</i>	Compact Rush	R
<i>Plantago major</i>	Greater Plantain	R
<i>Potentilla erecta</i>	Tormentil	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 18	
Habitat:	Standing water	
Species List:		
Scientific Name	Common Name	Frequency
<i>Potamogeton sp.</i>	Pondweed species	F
<i>Sparganium erectum</i>	Branched Bur-reed	F
<i>Typha latifolia</i>	Greater Reedmace	F
<i>Berula erecta</i>	Lesser Water-parsnip	O
<i>Glyceria maxima</i>	Reed Sweet-grass	O
<i>Juncus effusus</i>	Soft Rush	O
<i>Juncus inflexus</i>	Hard Rush	O
<i>Salix cinerea</i> ssp. <i>cinerea</i>	Grey Willow	O
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 19	
Habitat:	Semi-improved neutral grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Agrostis stolonifera</i>	Creeping Bent	A
<i>Plantago major</i>	Greater Plantain	A
<i>Poa annua</i>	Annual Meadow-grass	A
<i>Trifolium repens</i>	White Clover	A
<i>Cirsium arvense</i>	Creeping Thistle	F
<i>Polygonum aviculare</i>	Knotgrass	F
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Gnaphalium uliginosum</i>	Marsh Cudweed	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Impatiens glandulifera</i>	Himalayan Balsam	O
<i>Lolium perenne</i>	Ryegrass	O
<i>Matricaria discoidea</i>	Pineapple-weed	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Potentilla anserina</i>	Silverweed	O
<i>Ranunculus acris</i>	Meadow Buttercup	O
<i>Rumex crispus</i>	Curled Dock	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Trifolium pratense</i>	Red Clover	O
<i>Arctium minus</i>	Lesser Burdock	R
<i>Artemisia vulgaris</i>	Mugwort	R
<i>Centaurea nigra</i>	Knapweed	R
<i>Chenopodium rubrum</i>	Red Goosefoot	R
<i>Cirsium palustre</i>	Marsh Thistle	R
<i>Sonchus asper</i>	Prickly Sow-thistle	R
<i>Trifolium medium</i>	Zigzag Clover	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 20	
Habitat:	Swamp	
Species List:		
Scientific Name	Common Name	Frequency
<i>Glyceria maxima</i>	Reed Sweet-grass	D
<i>Berula erecta</i>	Lesser Water-parsnip	O
<i>Juncus effusus</i>	Soft Rush	O
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Mentha aquatica</i>	Water Mint	O
<i>Typha latifolia</i>	Greater Reedmace	O
<i>Epilobium palustre</i>	Marsh Willowherb	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 21	
Habitat:	Semi-improved grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Festuca rubra</i>	Red Fescue	A
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	F
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Plantago lanceolata</i>	Ribwort Plantain	F
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Trifolium repens</i>	White Clover	F
<i>Achillea ptarmica</i>	Sneezewort	O
<i>Agrostis capillaris</i>	Common Bent	O
<i>Centaurea nigra</i>	Knapweed	O
<i>Cerastium fontanum</i>	Common Mouse-ear	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Cirsium palustre</i>	Marsh Thistle	O
<i>Equisetum arvense</i>	Field Horsetail	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Lathyrus pratensis</i>	Meadow Vetchling	O
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	O
<i>Potentilla reptans</i>	Creeping Cinquefoil	O
<i>Pulicaria dysenterica</i>	Fleabane	O
<i>Ranunculus acris</i>	Meadow Buttercup	O
<i>Rumex acetosa</i>	Common Sorrel	O
<i>Torilis japonica</i>	Upright Hedge-parsley	O
<i>Trifolium pratense</i>	Red Clover	O
<i>Vicia cracca</i>	Tufted Vetch	O
<i>Angelica sylvestris</i>	Wild Angelica	R
<i>Potentilla anserina</i>	Silverweed	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 22	
Habitat:	Marshy grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Epilobium hirsutum</i>	Great Willowherb	A
<i>Juncus inflexus</i>	Hard Rush	A
<i>Agrostis stolonifera</i>	Creeping Bent	F
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	F
<i>Lycopus europaeus</i>	Gypsywort	F
<i>Achillea ptarmica</i>	Sneezewort	O
<i>Alisma plantago-aquaticum</i>	Water-plantain	O
<i>Berula erecta</i>	Lesser Water-parsnip	O
<i>Cirsium palustre</i>	Marsh Thistle	O
<i>Filipendula ulmaria</i>	Meadowsweet	O
<i>Juncus conglomeratus</i>	Compact Rush	O
<i>Lotus pedunculatus</i>	Marsh Bird's-foot Trefoil	O
<i>Senecio erucifolius</i>	Hoary Ragwort	O
<i>Hypericum tetrapterum</i>	Square-stalked St John's-wort	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 23	
Habitat:	Standing water	
Species List:		
Scientific Name	Common Name	Frequency
<i>ratophyllum demersum</i>	Rigid Hornwort	A
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Lemna minuta</i>	Least Duckweed	F
<i>Typha latifolia</i>	Greater Reedmace	F
<i>Berula erecta</i>	Lesser Water-parsnip	O
<i>Callitriche</i> sp.	Water Starwort species	O
<i>Carex otrubae</i>	False Fox-sedge	O
<i>Elodea nutallii</i>	Nuttall's Pondweed	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Glyceria fluitans</i>	Floating Sweet-grass	O
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Mentha aquatica</i>	Water Mint	O
<i>Quercus robur</i>	English Oak	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Sparganium erectum</i>	Branched Bur-reed	O
<i>Urtica dioica</i>	Nettle	O
<i>Angelica sylvestris</i>	Wild Angelica	R
<i>Artemisia vulgaris</i>	Mugwort	R
<i>Azolla filiculoides</i>	Water-fern	R
<i>Betula pendula</i>	Silver Birch	R
<i>Chamerion angustifolium</i>	Rosebay Willowherb	R
<i>Heracleum sphondylium</i>	Hogweed	R
<i>Impatiens glandulifera</i>	Himalayan Balsam	R
<i>Iris pseudacorus</i>	Yellow Flag Iris	R
<i>Stachys palustris</i>	Marsh Woundwort	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 24	
Habitat:	Standing water	
Species List:		
Scientific Name	Common Name	Frequency
<i>Typha latifolia</i>	Greater Reedmace	A
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Elodea nutallii</i>	Nuttall's Pondweed	F
<i>Alisma plantago-aquaticum</i>	Water-plantain	O
<i>Angelica sylvestris</i>	Wild Angelica	O
<i>Callitriche</i> sp.	Water Starwort species	O
<i>Callitriche stagnalis</i>	Common Water Starwort	O
<i>Cotula coronopifolia</i>	Buttonweed	O
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Glyceria maxima</i>	Reed Sweet-grass	O
<i>Ranunculus sceleratus</i>	Celery-leaved Buttercup	O
<i>Salix cinerea</i>	Grey Willow	O
<i>Berula erecta</i>	Lesser Water-parsnip	R
<i>Eleocharis palustris</i>	Common Spike-rush	R
<i>Prunus spinosa</i>	Blackthorn	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN 25	
Habitat:	Standing water	
Species List:		
Scientific Name	Common Name	Frequency
<i>Glyceria maxima</i>	Reed Sweet-grass	A
<i>Typha latifolia</i>	Greater Reedmace	A
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Fraxinus excelsior</i>	Ash	O
<i>Hydrocotyle ranunculoides</i>	Floating Pennywort	O
<i>Rubus fruticosus</i> agg.	Bramble	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Fallopia japonica</i>	Japanese Knotweed	R
<i>Filipendula ulmaria</i>	Meadowsweet	R
<i>Sambucus nigra</i>	Elder	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN 26	
Habitat:	Semi-improved neutral grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Lolium perenne</i>	Ryegrass	F
<i>Plantago lanceolata</i>	Ribwort Plantain	F
<i>Plantago major</i>	Greater Plantain	F
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Centaurea nigra</i>	Knapweed	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Phleum pratense</i>	Timothy	O
<i>Potentilla anserina</i>	Silverweed	O
<i>Ranunculus acris</i>	Meadow Buttercup	O
<i>Rumex crispus</i>	Curled Dock	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Senecio jacobaea</i>	Ragwort	O
<i>Trifolium pratense</i>	Red Clover	O
<i>Bellis perennis</i>	Daisy	R
<i>Dysenterica pulicaria</i>	Fleabane	R
<i>Lathyrus pratensis</i>	Meadow Vetchling	R
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	R
<i>Odontites verna</i>	Red Bartsia	R
<i>Potentilla reptans</i>	Creeping Cinquefoil	R
<i>Prunella vulgaris</i>	Selfheal	R
<i>Trifolium repens</i>	White Clover	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN 27	
Habitat:	Dense scrub (grey willow carr)	
Species List:		
Scientific Name	Common Name	Frequency
<i>Salix cinerea</i>	Grey Willow	D
<i>Bare ground</i>	Bare ground	A
<i>Glyceria fluitans</i>	Floating Sweet-grass	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Management Issues:

There is a public footpath along the old towpath of the canal and a network of public footpaths along some of the field boundaries of the land to the south of the site which is used frequently by various people. There are also desire lines within the site, through much of the pastoral farmland north of the canal, where there are no public footpaths.

Invasive non-native species Japanese knotweed, Himalayan balsam, Nuttall's pondweed and floating pennywort are present on site. Floating pennywort is in the central section of the canal where it is the locally dominant aquatic species. Nuttall's pondweed is present in a section of the old route of the River Dearne. There are small stands of Japanese knotweed along the canal towpath in the eastern end of the site; there is another stand in the far east of the site adjacent to the fishing lake which borders the site. Himalayan balsam is abundant amongst the swamp in the eastern stretch of the canal; there are also some small stands on the River Dearne in the east of the site.

Scrub removal in the fields south of the canal would protect the grassland habitats present.

Diversity:

This site has a broad diversity of habitats for its size, and rich species diversity. There are some well established wetland/swamp areas with a good mix of aquatic and marginal species. The area to the north of the River Dearne and the old course of the River Dearne are of the most ecological interest. These areas also offer habitat for a range of invertebrate, amphibian and bird species.

The pastoral fields and grasslands to both the north and south of the canal have high species diversity. Between 20 and 35 species were noted per field, with a mix of both acid and neutral species present.

The scrub and broadleaved woodland habitats present provide habitat for nesting birds.

Naturalness:

The meandering old course of the River Dearne, although no longer forming an active part of the river since its channelization upstream, still displays many natural processes and the fairly large area of swamp and standing water that remains has a very natural appearance. The large area of swamp north of the river offers a natural habitat that has not been drained for farming like much of the surrounding land. There are smaller areas of ponds and swamp/marshy areas found throughout the site which display this naturalness but to a slightly lesser degree.

Another area displaying natural processes and appearance is a small area of established broadleaved woodland south of the canal in the western end of the site. Running through this woodland is a small gently meandering stream that has formed some swamp areas either side.

Rare or Exceptional Features:

A section of the disused Barnsley Canal runs the length of the site.

Fragility:

The two main areas of standing water/swamp on site, the old course of the River Dearne and the disused canal are both vulnerable to drying out as there is little supply of fresh water into these habitats. Natural build up of organic matter will occur and the swamp habitat will encroach into the standing water and over time succession of these areas into scrub will follow. Management of these habitats will be required to retain their current mix of swamp and standing water.

Typicalness:

Horse grazed pastoral fields are a fairly typical use of land in the Barnsley area. However the mix of more-acid areas and wet areas within the fields on site and the diversity of the species present is less typical of the area.

There is an area of grey willow (*Salix cinerea*) carr in the west of the site, just to the south of the canal. This is a relatively uncommon habitat in the borough.

The swamp habitat that occurs in the disused canal and the within the old course of the river is not a scarce habitat within the Borough and there are a number of wetland/swamp sites that have a similar mix of species to those that are on this site. However the way in which these habitats have come about at this site is fairly unusual.

Recorded History & Cultural Associations:

Barnsley Canal was closed in 1953 following many problems with mining subsidence. The section of the canal within the site has since been left largely unmanaged. Only a few sections of open water remain and a build up of silt and organic matter has occurred so that much of the canal has now been populated by aquatic and marginal plants.

The surrounding pastoral fields appear established and are likely to have been grazed (low intensity grazing) for many years.

Connectivity within the Landscape:

The neighbouring land is largely agricultural and pastoral farmland. The River Dearne and the disused Barnsley Canal provide good connectivity to the wider environment, linking the site to other natural areas along the Dearne Valley.

Value for appreciation of Nature and Learning:

There is a public footpath along the old towing path of the canal. There is also a network of public footpaths in the south of the site. The east of the site is adjacent to the residential area of Honeywell.

A small car park off Smithies Lane, near the east of the site, makes the site accessible to people who do not live locally and is big enough for a mini-bus. There is a height restriction though, which will restrict vehicular access.

Recommendations:

This site has a number of different habitats, both terrestrial and aquatic which are valuable and have a recreational value for the local communities.

The scrub in the southern section should be managed to prevent encroachment and the hedge-line on the southern boundary should be re-laid and the gaps filled in.

The waterbodies will most likely require some amount of management to maintain their function and to avoid siltation and succession. The site has the potential to be significant part of Barnsley's amphibian interest and, following survey, would most likely satisfy the site selection criteria on this basis alone. The presence of UKBAP bird species is also significant.

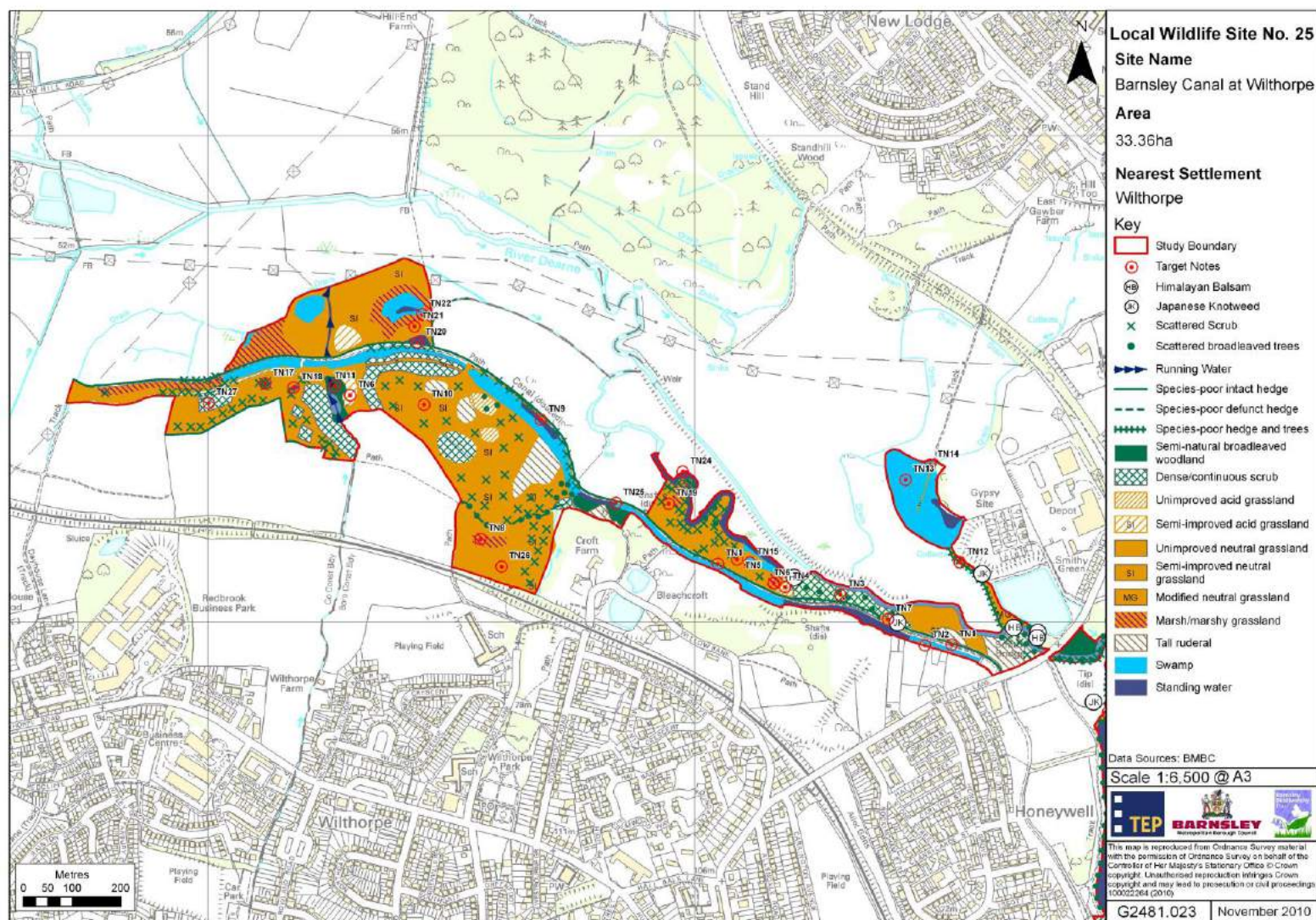
The site is also an important natural corridor through the landscape, for wildlife and people.

Action:

Retain as a Local Wildlife Site

Conduct an amphibian survey

Work with landowners/managers to manage the site for enhanced biodiversity





26. Cliff Wood

LWS Assessment and Phase 1 Survey

Prepared by
TEP

for

Barnsley Metropolitan Borough Council

January 2011
(Edited December 2011)

Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

T: 01925 844004
F: 01925 844002
E: tep@tep.uk.com
W: www.tep.uk.com



Site Name:	Cliff Wood
Site Area:	32.27ha
Survey Date:	August 2010
Nearest Settlement:	Cundy Cross, Monk Bretton
Grid Reference at Centre:	SE36220, 06805
Surveyor(s)	VG, LAC

Site Description:

Cliff Wood is located within Dearne Valley Park. It lies to the north of the River Dearne between Old Mill Lane, in the west, and Cundy Cross, to the east. The River Dearne flows in a generally easterly direction forming the southern boundary of Cliff Wood in places (TN8, TN11). Dearne Valley Park was established in 1980 and was designated as a Local Nature Reserve in 1996. This designation includes Cliff Wood, as it lies within the park. The site lies on a south-facing valley slope, ranging between approximately 35 and 75 metres above sea level.

Cliff Wood is underlain by coal measures sandstones, sedimentary rocks dating from the Carboniferous period, with outcrops in various spots throughout the site. The majority of the broadleaved woodland is dominated by oak and birch, with smaller amounts of other native species such as ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), hazel (*Corylus avellana*) and field maple (*Acer campestre*). Many of the specimens are stunted and multi-stemmed, both as a result of the thin acidic soils but also partly due to local collection of wood for fuel during various miners' strikes. The habitats are a mixture of semi-natural oak/birch woodland (TN2), diverse mixed plantations of native species (TN4, TN6) developed in the 1980's and an area of wet willow-dominated woodland.

There are also areas of open neutral grassland (TN1, TN3) and scrub, bodies of standing water with associated swamp habitat (TN5) and areas of parkland along the base of River Dearne valley.

The whole broad area is well-served by footpaths and provides a wild open space in close proximity to a large urban population.

Important Species:

Sessile oak (*Quercus petraea*), wood speedwell (*Veronica montana*), bluebell (*Hyacinthoides non-scripta*), broadleaved helleborine (*Epipactis helleborine*), yellow archangel (*Lamiastrum galeobdolon*), small-leaved lime (*Tilia cordata*) and wood horsetail (*Equisetum sylvaticum*) are all present on the site. These species are considered as ancient woodland indicator species within South Yorkshire.

The Schedule 9 invasive alien species Japanese knotweed (*Fallopia japonica*) is present on the site, in addition to giant hogweed (*Heracleum mantegazzianum*) and Himalayan balsam (*Impatiens glandulifera*).

The site contains UKBAP breeding birds such as: willow tit (*Poecile montanus*), dunnock (*Prunella modularis*), bullfinch (*Pyrrhula pyrrhula*) and song thrush (*Turdus philomelos*).

Target Note:	TN1	
Habitat:	Semi-improved neutral grassland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Arrhenatherum elatius</i>	False Oat-grass	D
<i>Calystegia silvatica</i>	Large Bindweed	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Urtica dioica</i>	Nettle	O
<i>Arctium minus</i>	Lesser Burdock	R
<i>Artemisia absinthium</i>	Wormwood	R
<i>Centaurea nigra</i>	Knapweed	R
<i>Lamium album</i>	White Dead-nettle	R
<i>Linaria vulgaris</i>	Common Toadflax	R
<i>Rubus fruticosus</i> agg.	Bramble	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN2	
Habitat:	Semi-natural broadleaved woodland	
Species List:		
Scientific Name	Common Name	Frequency
<i>Betula pendula</i>	Silver Birch	A
<i>Holcus mollis</i>	Creeping Soft-grass	A
<i>Quercus petraea</i>	Sessile Oak	A
<i>Pteridium aquilinum</i>	Bracken	F
<i>Arrhenatherum elatius</i>	False Oat-grass	O
<i>Corylus avellana</i>	Hazel	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Deschampsia flexuosa</i>	Wavy Hair-grass	O
<i>Elymus caninus</i>	Bearded Couch	O
<i>Hedera helix</i>	Ivy	O
<i>Hyacinthoides non-scripta</i>	Bluebell	O
<i>Moss sp.</i>	Moss species	O
<i>Quercus robur</i>	English Oak	O
<i>Rubus fruticosus</i> agg.	Bramble	O
<i>Teucrium scorodonium</i>	Woodsage	O
<i>Veronica montana</i>	Wood Speedwell	O
<i>Acer campestre</i>	Field Maple	R
<i>Acer pseudoplatanus</i>	Sycamore	R
<i>Aesculus hippocastanum</i>	Horse-chestnut	R
<i>Alliaria petiolata</i>	Garlic Mustard	R
<i>Alnus incana</i>	Grey Alder	R
<i>Arum maculatum</i>	Lords-and-Ladies	R
<i>Crepis capillaris</i>	Smooth Hawk's-beard	R
<i>Dryopteris dilatata</i>	Broad Buckler-fern	R
<i>Dryopteris filix-mas</i>	Male-fern	R
<i>Epipactis helleborine</i>	Broad-leaved Helleborine	R
<i>Fraxinus excelsior</i>	Ash	R
<i>Geranium robertianum</i>	Herb-Robert	R
<i>Geum urbanum</i>	Wood Avens	R
<i>Hypericum pulchrum</i>	Slender St John's-wort	R
<i>Ilex aquifolium</i>	Holly	R
<i>Lamiastrum galeobdolon</i>	Yellow Archangel	R
<i>Lonicera periclymenum</i>	Honeysuckle	R
<i>Populus alba</i>	White Poplar	R
<i>Populus candicans</i>	Balsam Poplar	R

<i>Rosa canina</i> agg.	Dog Rose	R
<i>Salix alba</i>	White Willow	R
<i>Sambucus nigra</i>	Elder	R
<i>Sorbus aucuparia</i>	Rowan	R
<i>Stachys sylvatica</i>	Hedge Woundwort	R
<i>Tilia cordata</i>	Small-leaved Lime	R
<i>Viburnum opulus</i>	Guelder-rose	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN3	
Habitat:	Modified neutral grassland, scattered scrub	
Species List:		
Scientific Name	Common Name	Frequency
<i>Arrhenatherum elatius</i>	False Oat-grass	D
<i>Cirsium arvense</i>	Creeping Thistle	F
<i>Centaurea nigra</i>	Knapweed	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Equisetum arvense</i>	Field Horsetail	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Holcus lanatus</i>	Yorkshire-fog	O
<i>Lolium perenne</i>	Ryegrass	O
<i>Poa annua</i>	Annual Meadow-grass	O
<i>Poa trivialis</i>	Rough Meadow-grass	O
<i>Pteridium aquilinum</i>	Bracken	O
<i>Rubus fruticosus</i> agg.	Bramble	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Taraxacum</i> sp.	Dandelion	O
<i>Trifolium pratense</i>	Red Clover	O
<i>Trifolium repens</i>	White Clover	O
<i>Crepis capillaris</i>	Smooth Hawk's-beard	R
<i>Cytisus scoparius</i>	Broom	R
<i>Hypericum perforatum</i>	Perforate St John's-wort	R
<i>Hypochaeris radicata</i>	Common Cat's-ear	R
<i>Odontites verna</i>	Red Bartsia	R
<i>Plantago lanceolata</i>	Ribwort Plantain	R
<i>Plantago major</i>	Greater Plantain	R
<i>Rumex obtusifolius</i>	Broad-leaved Dock	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN4	
Habitat:	Broadleaved plantation	
Species List:		
Scientific Name	Common Name	Frequency
<i>Agrostis stolonifera</i>	Creeping Bent	A
<i>Agrostis capillaris</i>	Common Bent	F
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Fallopia japonica</i>	Japanese Knotweed	F
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Quercus robur</i>	English Oak	F
<i>Salix alba</i>	White Willow	F
<i>Artemisia vulgaris</i>	Mugwort	O
<i>Calystegia</i> sp.	Bindweed species	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Elymus caninus</i>	Bearded Couch	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Geum urbanum</i>	Wood Avens	O
<i>Plantago major</i>	Greater Plantain	O
<i>Prunus avium</i>	Wild Cherry	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Rubus fruticosus</i> agg.	Bramble	O

<i>Scrophularia nodosa</i>	Common Figwort	O
<i>Symphytum x uplandicum</i>	Russian Comfrey	O
<i>Urtica dioica</i>	Nettle	O
<i>Acer sp.</i>	Maple species	R
<i>Alnus glutinosa</i>	Alder	R
<i>Arctium minus</i>	Lesser Burdock	R
<i>Centaurea nigra</i>	Knapweed	R
<i>Cirsium vulgare</i>	Spear Thistle	R
<i>Crataegus monogyna</i>	Hawthorn	R
<i>Epilobium montanum</i>	Broad-leaved Willowherb	R
<i>Equisetum sylvaticum</i>	Wood Horsetail	R
<i>Lamium album</i>	White Dead-nettle	R
<i>Lathyrus pratensis</i>	Meadow Vetchling	R
<i>Malus domestica</i>	Apple	R
<i>Phleum pratense</i>	Timothy	R
<i>Plantago lanceolata</i>	Ribwort Plantain	R
<i>Potentilla reptans</i>	Creeping Cinquefoil	R
<i>Rumex conglomeratus</i>	Clustered Dock	R
<i>Silene dioica</i>	Red Campion	R
<i>Solidago virgaurea</i>	Goldenrod	R
<i>Sorbus aucuparia</i>	Rowan	R
<i>Stachys sylvatica</i>	Hedge Woundwort	R
<i>Tanacetum vulgare</i>	Tansy	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN5	
Habitat:	Swamp, scattered scrub	
Species List:		
Scientific Name	Common Name	Frequency
<i>Typha latifolia</i>	Greater Reedmace	D
<i>Berula erecta</i>	Lesser Water-parsnip	F
<i>Epilobium hirsutum</i>	Great Willowherb	F
<i>Fallopia japonica</i>	Japanese Knotweed	F
<i>Iris pseudacorus</i>	Yellow Flag Iris	F
<i>Juncus inflexus</i>	Hard Rush	F
<i>Mentha aquatica</i>	Water Mint	F
<i>Agrostis stolonifera</i>	Creeping Bent	O
<i>Carex otrubae</i>	False Fox-sedge	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O
<i>Fagus sylvatica</i>	Beech	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Juncus effusus</i>	Soft Rush	O
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Quercus robur</i>	English Oak	O
<i>Rosa canina</i> agg.	Dog Rose	O
<i>Salix alba</i>	White Willow	O
<i>Salix caprea</i>	Goat Willow	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Phleum pratense</i>	Timothy	R
<i>Scrophularia auriculata</i>	Water Betony	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN6	
Habitat:	Broadleaved plantation	
Species List:		
Scientific Name	Common Name	Frequency
<i>Crataegus monogyna</i>	Hawthorn	D
<i>Prunus spinosa</i>	Blackthorn	A
<i>Acer campestre</i>	Field Maple	O
<i>Corylus avellana</i>	Hazel	O
<i>Betula pendula</i>	Silver Birch	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN7		
Habitat:	Broadleaved plantation		
Species List:			
Scientific Name	Common Name	Frequency	
<i>Tilia sp.</i>	Lime species	A	
<i>Acer pseudoplatanus</i>	Sycamore	O	
<i>Aesculus hippocastanum</i>	Horse-chestnut	O	
<i>Alnus incana</i>	Grey Alder	O	
<i>Fagus sylvatica</i>	Beech	O	
<i>Populus alba</i>	White Poplar	O	
D = Dominant. A = Abundant. F = Frequent. O = Occasional. R = Rare			

Target Note:	TN8	
Habitat:	Scattered trees, scattered scrub, running water	
Species List:		
Scientific Name	Common Name	Frequency
<i>Alnus glutinosa</i>	Alder	A
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Salix caprea</i>	Goat Willow	F
<i>Acer pseudoplatanus</i>	Sycamore	F
<i>Betula pendula</i>	Silver Birch	O
<i>Hyacinthoides non-scripta</i>	Bluebell	O
<i>Prunus avium</i>	Wild Cherry	O
<i>Quercus petraea</i>	Sessile Oak	O
<i>Quercus robur</i>	English Oak	O
<i>Salix cinerea</i>	Grey Willow	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Salix viminalis</i>	Osier	O
<i>Sambucus nigra</i>	Elder	O
<i>Sorbus aucuparia</i>	Rowan	O
<i>Viburnum opulus</i>	Guelder-rose	O
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Target Note:	TN11	
Habitat:	Scattered trees, scattered scrub, running water	
Species List:		
Scientific Name	Common Name	Frequency
<i>Acer pseudoplatanus</i>	Sycamore	A
<i>Acer platanoides</i>	Norway Maple	F
<i>Alnus glutinosa</i>	Alder	F
<i>Prunus avium</i>	Wild Cherry	F
<i>Alnus incana</i>	Grey Alder	O
<i>Prunus sp.</i>	Cherry species	O
<i>Quercus robur</i>	English Oak	O
<i>Quercus rubra</i>	Red Oak	O
<i>Salix caprea</i>	Goat Willow	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Salix viminalis</i>	Osier	O
<i>Sambucus nigra</i>	Elder	O
<i>Sorbus aucuparia</i>	Rowan	O
<i>Acer sp.</i>	Maple species	R
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare		

Management Issues:

Under the past 'Fuelling a Revolution' programme, a plan for woodland restoration and access improvement was completed which restored woodland habitats and maximised educational and recreational potential. Areas of closed tree canopy are being opened up by selective felling, allowing light to reach the woodland floor to encourage growth of woodland wildflowers and young trees, particularly of native species typical of ancient semi-natural broad-leaved woodlands.

Barnsley Council is also maintaining and improving the footpath network and wheelchair access, as part of a plan to raise awareness of the history and natural history, recreational potential, interpretation and management of the site.

Invasive species are present in the site including Japanese knotweed, giant hogweed and Himalayan balsam.

Diversity:

The old established woodlands on this acidic slope hold a wide range of locally native species. Newer plantations have added a wider range of native trees and shrubs to the site. Both species and structural diversity are enhanced by the mix of open grassy areas, developing scrub, stands of tall ruderal herbs, swampy areas and both still and running water habitats.

Parts of the woodlands appear to have considerable age as well as a complex history of past use, all adding to the levels of diversity within the site.

Naturalness:

The sloping woodlands are generally quite natural in character. Most of the plantation areas are in the flatter valley bottom. Human intervention is much more evident here, with waterbodies created and the river course managed as well as areas maintained as grassland.

The river banks in particular support a range of non-native species, including the invasive alien Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) and Himalayan balsam (*Impatiens glandulifera*).

Rare or Exceptional Features:

The range of semi-natural broadleaved woodlands and the species that they support form a major asset of this site. The topography and location of this site also makes it ideal for gaining an overview of the Dearne Valley and the nearby centre of Barnsley beyond. The rock outcrops allow a view of the underlying geology.

Fragility:

Woodland has survived on this site for many centuries and is a robust habitat in this location. Management plans should help prevent typical species being lost through the canopy becoming too dense and shading.

In the event of economic down turn, it is quite possible that the woodland may once again be called on to provide domestic fuel for local people, although the proportion of houses with open fires is now much reduced.

The proximity of large residential areas also enhances the possibility of fly-tipping and other damage, but good management locally appears to control much of this.

The river course is always open to potential contamination from activities along its banks

Typicalness:

The semi-natural woodlands on the site's slopes appear to be typical of local acidic conditions, mainly being a mix of W16 oak species-birch species-wavy hairgrass (*Deschampsia flexuosa*) community and W10 oak (*Quercus robur*) – bracken (*Pteridium aquilinum*) - bramble (*Rubus fruticosus*) community.

The range of habitats here, both semi-natural and man-made, are typical for developed parts of the Dearne valley.

Recorded History & Cultural Associations:

The history of Cliff Wood can be linked back to the Cluniac and Benedictine monks who inhabited Monk Bretton priory, just over 1km downstream from this site, from the 12th century up to the dissolution.

Timber from the wood has long been used in local coal mining and iron ore production. Numerous collieries developed along this stretch of the River Dearne and they were associated with large numbers of railway lines running from all points of the compass, curving and crossing one another to reach each colliery. One of the largest collieries locally was the Barnsley Oaks Colliery, whose disused site can be seen just south of the River Dearne.

The collieries have left their impact on the landscape in the form of linear earthworks that have often become the route for new footpaths throughout the area. In the case of this site, this is also true for the course of the Dearne and Barnsley Canal; the route of the in-filled canal forms a grassy glade now used as a footpath curving through the site's woodlands.

Connectivity within the Landscape:

Dense residential development dominates the whole of the long northern boundary of the site, with the southern edge being bounded by the course of the River Dearne. There are close links to the urban and suburban habitats to the north of the site and the Dearne Valley provides links to wider areas east and west of the site, with the valley comprising a major wildlife corridor.

There are also many links within the site, up and down the slopes and along the valley bottom, interlinking the range of habitat types present here. South of the river, there are wide swathes of post-industrial land forming developing areas of open space.

Value for appreciation of Nature and Learning:

This site is very close to centres of population and is very accessible with various options for parking and good internal access. One major path (accessible to people in wheelchairs) leads north from the Pontefract Road car park across the River Dearne and past the lakes of Dearne Valley Park to the southern edge of Cliff Wood. For access to the northern part of the site, there is parking in various side streets off Rotherham Road.

A network of paths gives good access to the great majority of the site. Access in the southern, flatter half of the site is generally straightforward but some paths towards the northern edge of the site can be steep in places. The flat, wide, grassy route of the old canal route provides easy access from west to east through the centre of the site.

Educational use of the site is facilitated by a range of available information packs covering a wide range of subject areas and Key Stages. The Dearne Way follows the river course from east to west, linking into a local network of public footpaths, giving good pedestrian access into and throughout the site.

Recommendations:

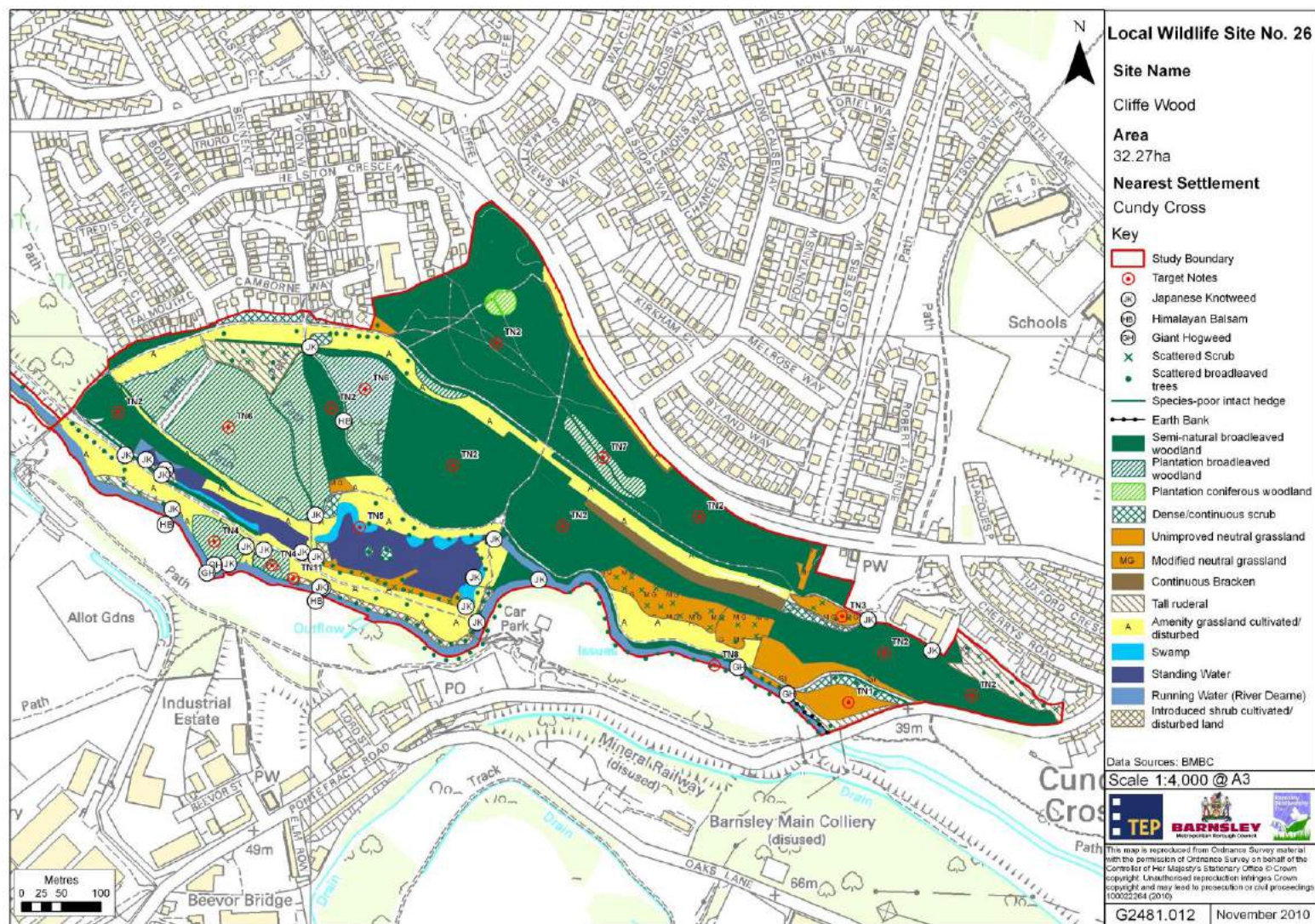
This site contains a number of ancient woodland indicator species and has been subject to improved management and a programme of interpretation.

Its size and wealth of flora and historical interest indicate that this site is an important part of the Borough's biodiversity resource and should be considered as such.

Action:

Retain as a Local Wildlife Site

Seek to control the invasive/alien species that are on the site



APPENDIX 04

Results of Habitat Suitability Index (HSI) Assessment of Pond for Great Crested Newt

Pond number/reference	P1			
OS Grid reference	SE 35564 07052 - 250m east of site			
Habitat Suitability Index				
SI1. Map location	A/B/C	<table border="1"><tr><td>A</td></tr></table>	A	SI value 1.00
A				
SI2. Surface area	rectangle/ellipse/irregular	<table border="1"><tr><td>ellipse</td></tr></table>	ellipse	
ellipse				
	length (m)	<table border="1"><tr><td>40</td></tr></table>	40	
40				
	width (m)	<table border="1"><tr><td>20</td></tr></table>	20	
20				
	OR estimate (m ²) if irregular	<table border="1"><tr><td></td></tr></table>		
	<i>area (m²) =</i>	<table border="1"><tr><td>800</td></tr></table>	800	0.98
800				
SI3. Dessication rate	never/rarely/sometimes/frequently	<table border="1"><tr><td>sometimes</td></tr></table>	sometimes	0.50
sometimes				
SI4. Water quality	good/moderate/poor/bad	<table border="1"><tr><td>moderate</td></tr></table>	moderate	0.67
moderate				
SI5. Shade	% of margin shaded 1m from bank	<table border="1"><tr><td>100</td></tr></table>	100	0.20
100				
SI6. Waterfowl	absent/major/minor	<table border="1"><tr><td>absent</td></tr></table>	absent	1.00
absent				
SI7. Fish population	absent/possible/minor/major	<table border="1"><tr><td>possible</td></tr></table>	possible	0.67
possible				
SI8. Pond density	number of ponds within 1km	<table border="1"><tr><td>4</td></tr></table>	4	1.00
4				
SI9. Terrestrial habitat	good/moderate/poor/isolated	<table border="1"><tr><td>good</td></tr></table>	good	1.00
good				
SI10. Macrophyte cover	%	<table border="1"><tr><td>1</td></tr></table>	1	0.32
1				
		HSI =	0.65	
		provisional		
		HSI =	0.62	
<i>Use provisional HSI value if above 0.75</i>				
		Date undertaken	18.5.17	

Pond number/reference	P2			
OS Grid reference	SE 34944 07324 - 330m north-west of site			
Habitat Suitability Index				
SI1. Map location	A/B/C	A	SI value	
SI2. Surface area	rectangle/ellipse/irregular	ellipse	1.00	
	length (m)	50		
	width (m)	30		
	OR estimate (m ²) if irregular			
	area (m ²) =	1500	0.87	
SI3. Dessication rate	never/rarely/sometimes/frequently	rarely	1.00	
SI4. Water quality	good/moderate/poor/bad	moderate	0.67	
SI5. Shade	% of margin shaded 1m from bank	99	0.22	
SI6. Waterfowl	absent/major/minor	minor	0.67	
SI7. Fish population	absent/possible/minor/major	possible	0.67	
SI8. Pond density	number of ponds within 1km	4	1.00	
SI9. Terrestrial habitat	good/moderate/poor/isolated	good	1.00	
SI10. Macrophyte cover	%	5	0.36	
		HSI =	0.68	
		provisional		
		HSI =	0.65	
<i>Use provisional HSI value if above 0.75</i>				
		Date undertaken	18.5.17	

Pond number/reference	P3		
OS Grid reference	SE 34933 07372 - 360m north-west of site		
Habitat Suitability Index			
SI1. Map location	A/B/C	A	SI value 1.00
SI2. Surface area	rectangle/ellipse/irregular	ellipse	
	length (m)	50	
	width (m)	40	
	OR estimate (m ²) if irregular		
	area (m ²) =	2000	0.79
SI3. Dessication rate	never/rarely/sometimes/frequently	rarely	1.00
SI4. Water quality	good/moderate/poor/bad	moderate	0.67
SI5. Shade	% of margin shaded 1m from bank	99	0.22
SI6. Waterfowl	absent/major/minor	minor	0.67
SI7. Fish population	absent/possible/minor/major	possible	0.67
SI8. Pond density	number of ponds within 1km	4	1.00
SI9. Terrestrial habitat	good/moderate/poor/isolated	good	1.00
SI10. Macrophyte cover	%	15	0.46
		HSI =	0.69
		provisional	
		HSI =	0.66
<i>Use provisional HSI value if above 0.75</i>			
		Date undertaken	18.5.17

Pond number/reference	P4		
OS Grid reference	SE 34885 07527 - 390m north-west of site		
Habitat Suitability Index			
SI1. Map location	A/B/C	A	SI value 1.00
SI2. Surface area	rectangle/ellipse/irregular	ellipse	
	length (m)	385	
	width (m)	115	
	OR estimate (m ²) if irregular		
	area (m ²) =	44275	0.01
SI3. Dessication rate	never/rarely/sometimes/frequently	never	0.90
SI4. Water quality	good/moderate/poor/bad	moderate	0.67
SI5. Shade	% of margin shaded 1m from bank	50	1.00
SI6. Waterfowl	absent/major/minor	minor	0.67
SI7. Fish population	absent/possible/minor/major	major	0.01
SI8. Pond density	number of ponds within 1km	4	1.00
SI9. Terrestrial habitat	good/moderate/poor/isolated	good	1.00
SI10. Macrophyte cover	%	3	0.34
		HSI =	0.33
		provisional	
		HSI =	0.29
<i>Use provisional HSI value if above 0.75</i>			
		Date undertaken	18.5.17

EUROPEAN OFFICES

United Kingdom

AYLESBURY

T: +44 (0)1844 337380

BELFAST

T: +44 (0)28 9073 2493

BRADFORD-ON-AVON

T: +44 (0)1225 309400

BRISTOL

T: +44 (0)117 906 4280

CAMBRIDGE

T: + 44 (0)1223 813805

CARDIFF

T: +44 (0)29 2049 1010

CHELMSFORD

T: +44 (0)1245 392170

EDINBURGH

T: +44 (0)131 335 6830

EXETER

T: + 44 (0)1392 490152

GLASGOW

T: +44 (0)141 353 5037

GUILDFORD

T: +44 (0)1483 889800

LEEDS

T: +44 (0)113 258 0650

LONDON

T: +44 (0)203 691 5810

MAIDSTONE

T: +44 (0)1622 609242

MANCHESTER

T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE

T: +44 (0)191 261 1966

NOTTINGHAM

T: +44 (0)115 964 7280

SHEFFIELD

T: +44 (0)114 2455153

SHREWSBURY

T: +44 (0)1743 23 9250

STAFFORD

T: +44 (0)1785 241755

STIRLING

T: +44 (0)1786 239900

WORCESTER

T: +44 (0)1905 751310

Ireland

DUBLIN

T: + 353 (0)1 296 4667

France

GRENOBLE

T: +33 (0)4 76 70 93 41