



Preliminary Ecological Appraisal

Land off Rockingham Roundabout, Birdwell, Barnsley S74 0QA.
for:

Hartwood Estates

SHF.1122.002



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Land off Rockingham Roundabout

Project:	Preliminary Ecological Appraisal
For:	Hartwood Estates
Status:	Draft v.A
Date:	12 th September 2014
Author:	Kirsty Rogers – Consultant Ecologist
Reviewer:	Chris Formaggia – Director of Ecology

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We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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Executive Summary

- i. A Preliminary Ecological Appraisal was carried out for a proposed development of a site adjacent to Rockingham Roundabout, Barnsley.
- ii. The site consists of improved grassland with a high diversity of wildflowers, a number of mature trees and areas of scrub and tall ruderal vegetation. Overall the site is assessed as being of **low** ecological value.
- iii. A Phase 1 habitat survey was carried out to identify habitats and species present. An extended Phase 1 survey was conducted to assess the potential for protected species.
- iv. Potential for breeding birds was found in and around the site. Recommendations for ecological mitigation are made.

1.0 Introduction

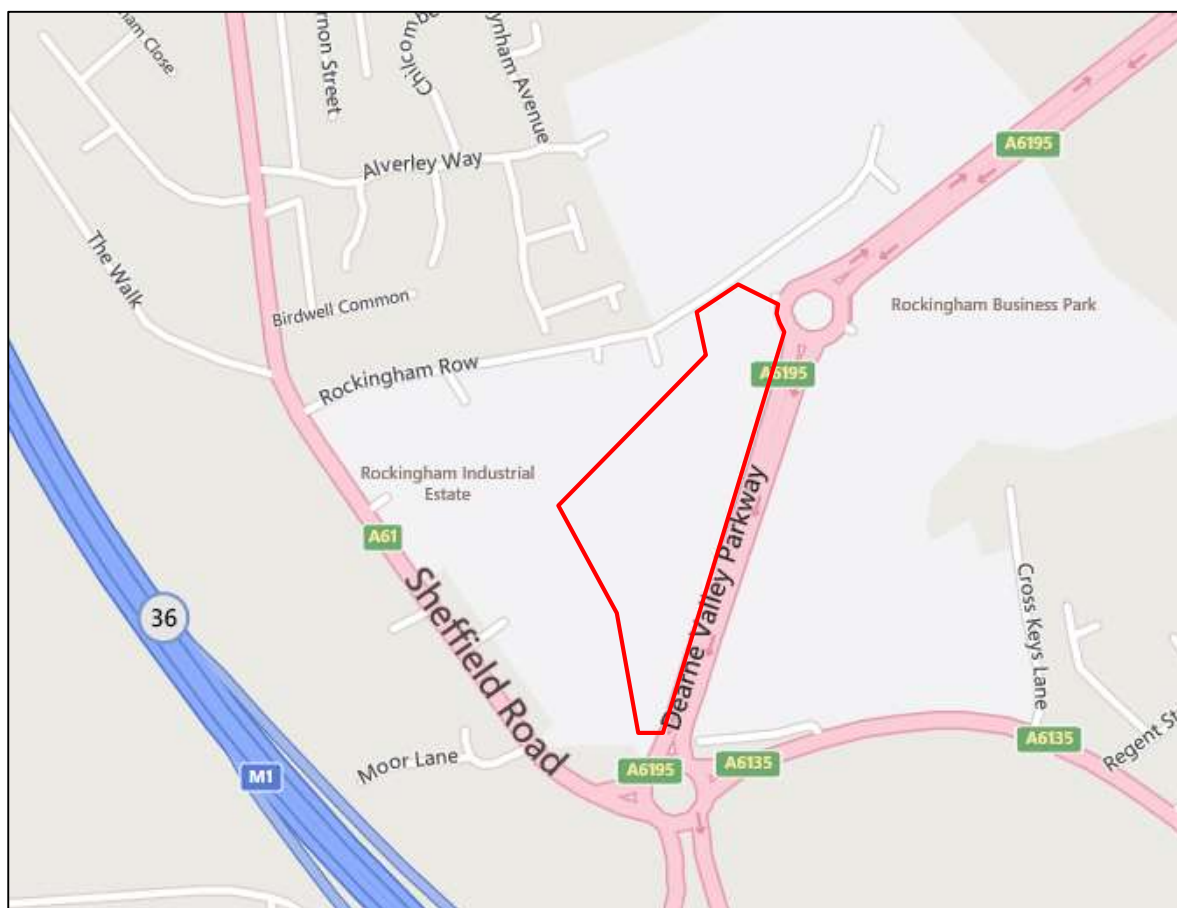
1.1. Commission

- 1.1.1. Enzygo Ltd was commissioned via Hartwood Estates, on behalf of the land owner, to conduct a preliminary ecological appraisal of a proposed development site upon the land adjacent to Rockingham Roundabout in Birdwell, Barnsley.
- 1.1.2. The purpose of the survey was to identify and map the habitats present in and around the proposed development site, and to assess their potential to support protected species including reviewing ecological records from MAGIC and other data sources and to provide an extended Phase 1 Habitat map with target notes and descriptions; and to provide recommendations for further work in relation to protected species.

1.2. Site Details

- 1.2.1. The site is centred on the National Grid Reference SE 34967 00561, within Barnsley Metropolitan County Council. The postcode is S70 5TW. The site is 3.1 hectares in size; the site's red-line boundary is shown in **Figure 1.1**.

Figure 1.1: View of the sites red-line boundary.



1.2.2. The site comprises primarily of unmanaged reclaimed colliery land, with a number of established ornamental species along the eastern edge of the site (bordering the A6195). The site is bordered by damaged fencing and mature trees on three sides, but is open at its most northern point to a larger expanse of land of similar habitat.

1.2.3. A detailed habitat description is given in *Section 3*.

Photograph 1: View of the site from the north western corner looking south east.



Photograph 2: View across the site and adjoining land facing north east.



- 1.2.4. At the time of survey, three horses were left fly-grazing on adjacent land, and there was evidence of horses and ponies previously grazing on the site.
- 1.2.5. The wider habitat in the locale comprises of industrial estates and residential properties, with agricultural land boarded by scrub and sparse areas of woodland beyond (see **Figure 1.2**). The M1 runs north to south approximately 180m from the site at its closest point.

Figure 1.2: Aerial photograph of the site showing the site (outlined in red) and the wider surrounding habitat.



- 1.2.6. A habitat map based upon the conventions of the JNCC Phase 1 Habitat Survey¹ is attached in *Appendix 1* of this report.
- 1.2.7. The site was assessed within the normal timing window (March to September in northern England) that would be considered optimal for the conduct of this type of evaluation.

¹Handbook for Phase I Habitat Survey – a Technique for Environmental Audit. (2003) JNCC. Peterborough. ISBN 0-86139-636-7

2.0 METHODOLOGY

2.1 Survey Details

- 2.1.1 The site was surveyed on 5th August 2014. The site was visited and the vegetation was mapped onto an Ordnance Survey Mastermap using standard colour codes for the ninety plus specified habitat types as defined in the JNCC guidelines. The surrounding land was similarly mapped but third-party land was only accessed where open and is assessed on the basis of what could be viewed from publically accessible areas.
- 2.1.2 Target notes were made for particular areas of interest and annotated.
- 2.1.3 An ecological walkover survey of the site was also conducted. The survey looks for direct and indirect evidenced (through sightings or field signs) of protected species and speculates on likely presence based upon habitat type and quality.

2.2 Enzygo Ltd Ecology Experience

- 2.2.1 This study and the site survey was conducted by Kirsty Rogers MZoo – Consultant Ecologist and managed by Chris Formaggia BSc (joint Hons) CBiol CEnv MBS MCIEEM.

2.3 Survey Objectives

- 2.3.1 On the basis of the brief provided by the client Enzygo Ltd has conducted an ecological study:
- To determine the baseline ecological value of the site.
 - To determine the baseline ecological constraints that might require further evaluation with respect to any site development.
 - Advice on further ecological evaluation that might be necessary.

2.4 Survey Area

- 2.4.1 The appraisal has considered the whole of the site and its immediate peripheries where visible/accessible.

3.0 RESULTS

3.1 Phase 1 Habitat Mapping

3.1.1 The completed Phase 1 Habitat map is presented in *Appendix 1*. Target notes are shown as numbered black circles and are described in further detail in section **3.3**.

3.1.2 The overall area of the site is 3.1 hectares, and contains 8 habitats inside the site boundary.

3.1.3 Improved Grassland

The primary habitat (approximately 85%) within the site is improved grassland (**B4**), which is established in clay soil with a high diversity of wildflowers found throughout (see below).

Photograph 3: View of grassland found across the site.



The following species were seen within the grassland during the survey; birdsfoot trefoil (*Lotus corniculatus*), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), common knapweed (*Centaurea nigra*), yellow-wort (*Blackstonia perfoliata*), common vetch (*Vicia sativa*), creeping thistle (*Cirsium arvense*), wild teasel (*Dipsacus fullonum*), common sorrel (*Rumex acetosa*), ribwort plantain (*Plantago lanceolata*), rosebay willow herb (*Chamerion angustifolium*), oxeye daisy (*Leucanthemum vulgare*), common centuary (*Centaureum erythraea*), nettle (*Urtica dioica*), creeping buttercup (*Ranunculus repens*), common dandelion (*Taraxacum officinale*), meadow vetchling (*Lathyrus pratensis*), pignut (*Conopodium majus*), common toadflax (*Linaria vulgaris*), broadleaved willow herb (*Epilobium montanum*), hoary ragwort (*Senecio erucifolius*), colts foot (*Tussilago farfara*), red bartsia (*Odontites vernus*), dog rose (*Rosa canina*), prickly lettuce (*Lactuca serriola*), common bent grass (*Agrostis capillaris*), wild oat grass (*Avena fatua*), cocks-foot grass (*Dactylis glomerata*), sheep's fescue (*Festuca ovina*), Yorkshire fog (*Holcus lanatus*) and flattened meadow-grass (*Poa compressa*).

3.1.4 Plantation Woodland

The second most prominent habitat on site is the 270m border of plantation woodland (**A1**) running along the parts of the southern and western boundary. This covers approximately 9% of the site, and is comprised of the following species; Italian alder (*Alnus cordata*), guelder rose (*Viburnum opulus*), hawthorn (*Crataegus monogyna*), goats willow (*Salix caprea*), silver birch (*Betula pendula*), pendunculate oak (*Quercus robur*), wild cherry (*Prunus avium*), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), hazel (*Corylus avellana*), blackthorn (*Prunus spinosa*), common broom (*Cytisus scoparius*) and cherry plum (*Prunus cerasifera*).

Photograph 4: View of mature tree border forming the western boundary, looking towards the south-western corner.



3.1.5 Scrub

The third habitat found on site is scrub (**A2**) which is found between stretched of woodland bordering the site. Scrub habitat on site is mainly comprised of young silver birch, goat willow and alder stands, particularly towards the southern end of the site.

Photograph 6: View of scrub found along the northern border of the site.



3.1.6. Tall Ruderal

The further habitat on site is a small patch of tall ruderal (**C3.1**) plants dominant in bramble (*Rubus fruticosus*) but with raspberry (*Rubus idaeus*) and rosebay willow herb plants present also.

3.2 Target Notes

3.2.1 Target Note 1: A dry ditch with wetland species (bulrush, *Typha minima*) found on the northernmost border of the site.

Photograph 5: View of the bulrush and vegetation filling dry ditch.



3.3 Desk Study

3.3.1 A 2km interrogation of the DEFRA Magic database reveals the following statutory nature designations (the complete map can be found in **Appendix 3**):

- Potter Holes Plantation is an area of woodland designated as a Local Nature Reserve (**LNR**) approximately 725m from the sites boundary at its nearest point.
- Worsborough Country Park is located on the 2km search buffer and is designated **LNR**.

3.3.2 A 2km search of the Barnsley Biological Records Centre revealed a further 6 Sites of Local Wildlife Sites (**LWS**) (the complete map can be found in **Appendix 4**), these are:

- Sowell Ponds, ~1776m from the site boundary.
- Rockley Woods, ~ 838m from the site boundary.
- Shortwood and Hay Green, ~953m from the site boundary.
- Barrow Colliery Site, ~2000m from the site boundary.
- Worsborough Reservoir, ~2000m from the site boundary.

- Skiers Spring Wood, ~1976m from the site boundary.

3.3.3 A 2km data search has been commissioned from Barnsley Biological Record Centre to establish existing biological records in the area. The full report is not suitable for entering on a public register and is provided under separate cover for officer verification purposes only. However the following de-sensitised summary of the findings is:

- A large number of records for **bats** within the data search area, see table below.

Table 3.3: Summary of bat records found within 2km of the proposed development area.

Common Name	Scientific Name	No. of Records	Most Recent	Comments
Bats (not identified)	Chiroptera sp.	8	2004	-
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	8	2008	-
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	1	2000	UK BAP Priority Species
Brown Long-eared Bat	<i>Plecotus auritus</i>	1	2009	UK BAP Priority Species.
Liesler's Bat	<i>Nyctalus leisleri</i>	3	1986	
Natterer's Bat	<i>Myotis nattereri</i>	8	2000	
Noctule Bat	<i>Nyctalus noctula</i>	6	2004	UK BAP Priority Species

- Within the 2km search buffer there are 4 recordings of **badgers** (*Meles meles*), the most recent record was taken in 2010. The closest record to the site is approximately 1,733m from the site boundary.
- There are a small number of **amphibian** species records from within the search area, these are as follows:

(Note: Amphibians may use land up to 500m from the around the pond for forage and seeking new ponds to breed.)

- Great Crested Newt (**GCN**): There are 44 recorded sightings of **GCN** with the 2km buffer area; the closest was taken 335m from the site boundary and most recent was taken in the spring of 2012.
- Smooth Newt (*Lissotriton vulgaris*): There are 27 records of smooth newts taken from within the 2km buffer area; the closest was at 277m from the site boundary. The most recent record was taken in 2012.

- Other amphibian recordings taken from within the 2km search area, are 19 common toad (*Bufo bufo*) and 22 common frog (*Rana temporaria*).
- iv. There are 2 records of **reptile** species taken from within the search area, these are:
- Grass snake (*Natrix natrix*): There is 1 recorded sighting of a grass snake within the 2km buffer area, this was taken in 2004, at ~731m from the site.
 - Adder (*Vipera berus*): There are 4 records of adders, the closest record to the site was taken in 2010 at ~1733m from the site boundary.
- v. There are 9 records of one Riparian species, **water vole** (*Arvicola terrestris*), within the 2km vicinity of the site. The most recent record was taken in 1994; the closest record was taken at 1660m from the site.

3.4 Protected Species Audit

The site was also assessed for its potential to contain protected species. The results are detailed below.

3.4.1 Bats

The site as a whole provides limited habitat which would be beneficial for roosting bats, there are no structures found within the boundaries and many of the trees are not mature enough to have the suitable cracks or crevices which may be sought by roosting animals.

A data search conducted by Barnsley Biodiversity Records Centre of the site and the surrounding 2km buffer area revealed a number of bat records within the area, however the habitat on site is considered to be of **low** ecological value to bats.

3.4.2 Badgers

There was no evidence of badger (*Meles meles*) setts on the site or within 30m of the boundaries. Further there were no secondary signs of badger activity within the site (signs such as, obvious scratching posts, signs of foraging, badger tracks and paths or dung and latrines). The boundaries and fences were checked for any signs of badger damage, tracks or hairs during the survey, a number of animal paths were noted entering the site but it was not possible to confirm these are the result of badger activity.

There are only 4 records of badgers found within the data search area and both are found at a reasonable distance from the site boundary.

3.4.3 Breeding Birds

During the survey a number of birds were noted within the site such as, European robin (*Erithacus rubecula*), common blackbird (*Turdus merula*) and wood pigeon (*Columba palumbus*), further a herring gull (*Larus argentatus*) and jackdaw (*Corvus monedula*) were seen flying overhead. No nests (in use or abandoned) were seen during the survey; however the areas of scrub and trees offer potential habitat for a number of breeding bird species.

3.4.4 Amphibians

There was no standing water on site at the time of survey. However the dry ditch area (**Target Note 1**, above) supports some wetland plant species suggesting it is likely to hold water at some points of the year. As the ditch was dry at the time of survey it is unlikely it is able to support many breeding amphibians due to its inability to retain water.

Great crested newt may occupy such a site and is protected by International Law (The Conservation of Natural Habitats, &c. Regulations 1994) and National Law (Schedule 5, Wildlife and Countryside Act 1981 and CROW Act 2000).

There are 44 records for **GCN** highlighted by the data search, the closest taken from within 500m of the site boundary (335m), but is divided from the site by the A6135 and the A6135 isolating the population. Other amphibian species recorded within the 2km buffer area are common frog, common toad and smooth newt.

At the time of the survey, no evidence of amphibians on site was observed.

3.4.5 **Reptiles**

The site contains some habitat that would be suitable for reptile species, however no evidence of the same was seen on site at the time of the survey.

Common reptile species enjoy limited protection under Schedule 5 of the Wildlife and Countryside Act 1981 and CROW Act 2000.

The data search revealed 6 records of grass snake within the site vicinity and 4 adder records. The site boasts a number of basking spots and mixture of short and tall vegetation, which could support some reptile species.

4.0 RECOMMEDATIONS

4.1. General

4.1.1. The habitats on site are mainly of **low** ecological value. There is a good mix of wildflowers found over the site, which are likely established from a good seed mix when the land was reclaimed. Surveys needed to assess the presence of protected species and habitats are outlined as follows.

4.2. Birds

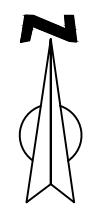
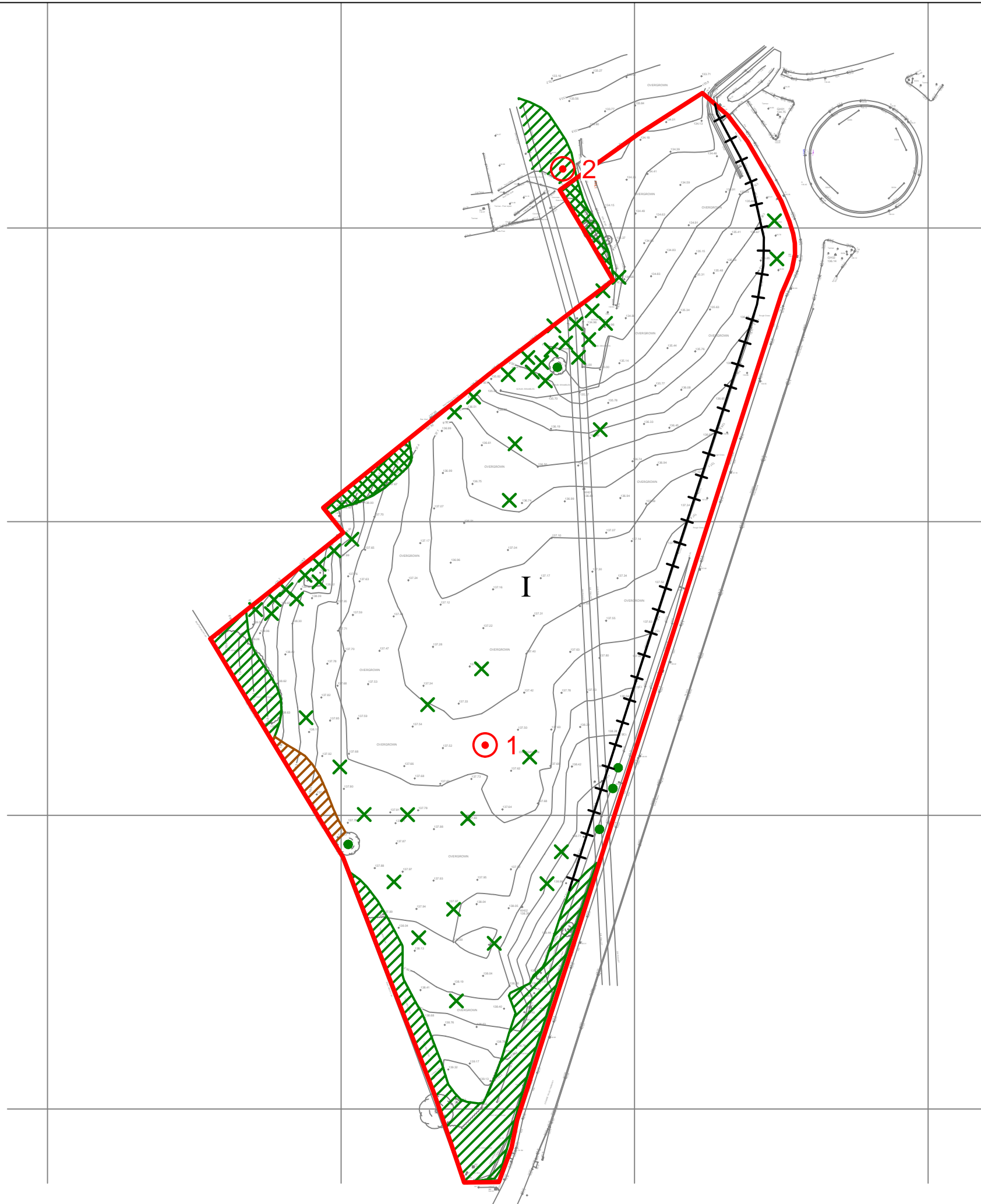
4.2.1 There is some potential for breeding birds particularly in the denser areas of scrub, tall ruderal vegetation and trees around the peripheries and within the site. If the scrub and vegetation were to be removed as part of the development works during the breeding season, an ecological clerk of works would be recommended to attend the site to inspect for any breeding birds and supervise the vegetation clearance works.

4.2.2 **The area would need to be inspected for breeding birds if the trees, ruderal vegetation and scrub were to be removed during the breeding season (March to August inclusive).**

5.0 CONCLUSIONS

- i. The proposed site is typical of a reclaimed colliery site. The site has **low** ecological value overall however boasts a wide range of wild flowers and some fruit trees along the peripheries. There are a number of designated sites within the area, however many are isolated from the site by a number of roads particularly the M1 motorway.
- ii. The risks of ecological damage indirect or direct are considered to be **low** either without modification or through the incorporation of reasonable mitigation measures.
- iii. It is recommended that:
 1. The boundary trees, scrub and ruderal vegetation offer the potential to support breeding birds. An inspection for breeding birds on site is required by a qualified ecologist prior to the removal of the vegetation, if the clearance works is to be conducted in the breeding season (March to August inclusive).

6.0 APPENDIX 1 –PHASE 1 HABITAT AND KEY



Key

	Site Boundary
A - Woodland and Scrub	
	Broad-leaved Woodland
	Scrub Dense/Continuous
	Parkland/Scattered Trees - Broad-leaved
	Scrub Scattered
B - Grassland and Marsh	
	Improved Grassland
C - Tall Herb and Fern	
	Tall Ruderal
J - Miscellaneous	
	Fence Line
	Target Note



STEP Business Centre, Wortley Rd, Sheffield, S36 2UH

CLIENT:		Hartwood Estates	
SCALE:	1:1,500@A3	PROJECT REF:	SHF.1122.002.D.001
DRAWN:	MG	CHECKED:	KR
DATE:		Sep 2014	
PROJECT:		Birdwell	
TITLE:		Phase 1 Habitat Map	
DRAWING NO:		1	

7.0 APPENDIX 2 – DIRECTOR’S CV

CURRICULUM VITAE

Name:	Christopher Formaggia
Position in Company:	Director of Ecology
Qualifications / Memberships:	BSc (Joint Hons) Zoology/ Environmental Studies Postgraduate Certificate in Management Royal Chartered Biologist CBiol Chartered Environmentalist CEnv Member of the Biological Society MBS Member of Institute of Ecology and Environmental Management MIEEM Associate Member of Emergency Planning Society BASIS qualified (Aquatics)
Date of Birth:	03 December 1966

Areas of Expertise:

Chris Formaggia has 22 years of professional experience in the fields of ecology, outdoor recreation and education and navigation within the regulatory, public and private sectors. He has particular expertise in the areas of wetland biology, biodiversity planning, environmental impact assessment, countryside recreation planning, species and habitat surveying, and habitat creation and restoration.

He has expertise of working on problems associated with invasive/alien species in marine, freshwater and terrestrial environments. As an invasion ecologist he has worked on aquatic and terrestrial plants, invasive vertebrates and was involved in the production of a marine biosecurity plan. His invasives experience is both ecological and practical and he has worked on a number of control programmes.

Chris's Recreation and Navigation experience includes the following:

- Management of Environment Agency recreation sites which ranged from small fisheries up to a International white water venue
- Production of recreation strategies
- Management of recreation conflict



- Public Enquiries
- Recreation demand studies/DDA analysis.
- Angling/Fisheries management
- Facility creation
- Conflict Resolution

Work History

Chris Formaggia is currently Director of Ecology with Enzygo Ltd.

He was formerly owner and Director of Formaggia Environmental Limited (and Formaggia Research Limited) and was responsible for all activities of the companies. Before setting up Formaggia Environmental Limited (and Formaggia Research Limited), Chris was Principal Ecological Consultant for RPS Planning, Transport and Environment Ltd. At RPS, Chris managed an ecology team split between offices in Chepstow and Milford Haven covering terrestrial, freshwater and marine ecology.

Prior to joining RPS Chris worked in local authority as Senior County Ecologist managing a local authority ecology unit. He was responsible for the provision of all of the council's internal and external ecological advice, its biodiversity planning, site management and an environmental education programme.

Chris has 13 years of experience with the National Rivers Authority/Environment Agency working at an area/regional and national level. He worked at Environment Agency Wales's Headquarters as Conservation, Recreation and Navigation (CRN) Officer for Wales and was responsible for all internal environmental assessment of Agency operations in Wales and for the development and implementation of all CRN policy. Prior to his headquarters' role Chris spent 8 years as an Area officer and was extensively involved in the assessment of consents and planning applications and major development schemes, aquatic survey work and species and habitat enhancement projects. He has substantial experience of working with protected species licences.

He sat on a number of government-level policy groups including the England and Wales River SSSI steering Group and the Wales Biodiversity Group. He was co-ordinator for a number of Species Plans within the UK Biodiversity Action Plan and represented the Agency on a further suite of habitat and species plans.

Major projects he was involved with included the "Wetlands for Wales" project which, at the time, was the largest successful HLF project to be initiated in Wales; the Review of the Dee Navigation and the internal re-structuring of the Environment Agency Wales EIA capability.

He was involved in two major Public Enquiries relating to the Usk Barrage and the Wye Navigation and a number of court procedures and planning enquiries.



Other Professional Interests

In recent years he has become increasingly interested in the ecological aspects of emergency planning, disaster relief, and conflict. He has attended a number of Home Office/Counter Terrorist courses and is an Associate Member of the Emergency Planning Society. He is a serving member of HM Reserve Forces and holds a number of higher level security clearances.

Experience Includes:

- River Habitat Surveyor and River Corridor Surveyor
- Management of ecology on major infrastructure projects
- Accredited electric fishing surveyor
- BASIS qualified and registered to sell and advice on crop protection.
- Holder of PA1 and PA6 amenity sprayer licences
- Substantial experience in advising on invasive species control especially Japanese knotweed, giant hogweed, Himalayan balsam, and aquatic invasives
- Expert experience on advising on wildlife crime matters especially in relation to the water environment
- Wetland creation/restoration and mitigation/compensation design
- Impacts of recreation/navigation on wildlife
- Woodland and coppice management.
- Appropriate Assessments and Conservation Regulations advice
- Waste facility development
- Environmental Supervision of major infrastructure projects
- Rebuttals, expert witness services and committee work.

Protected Species Licences:

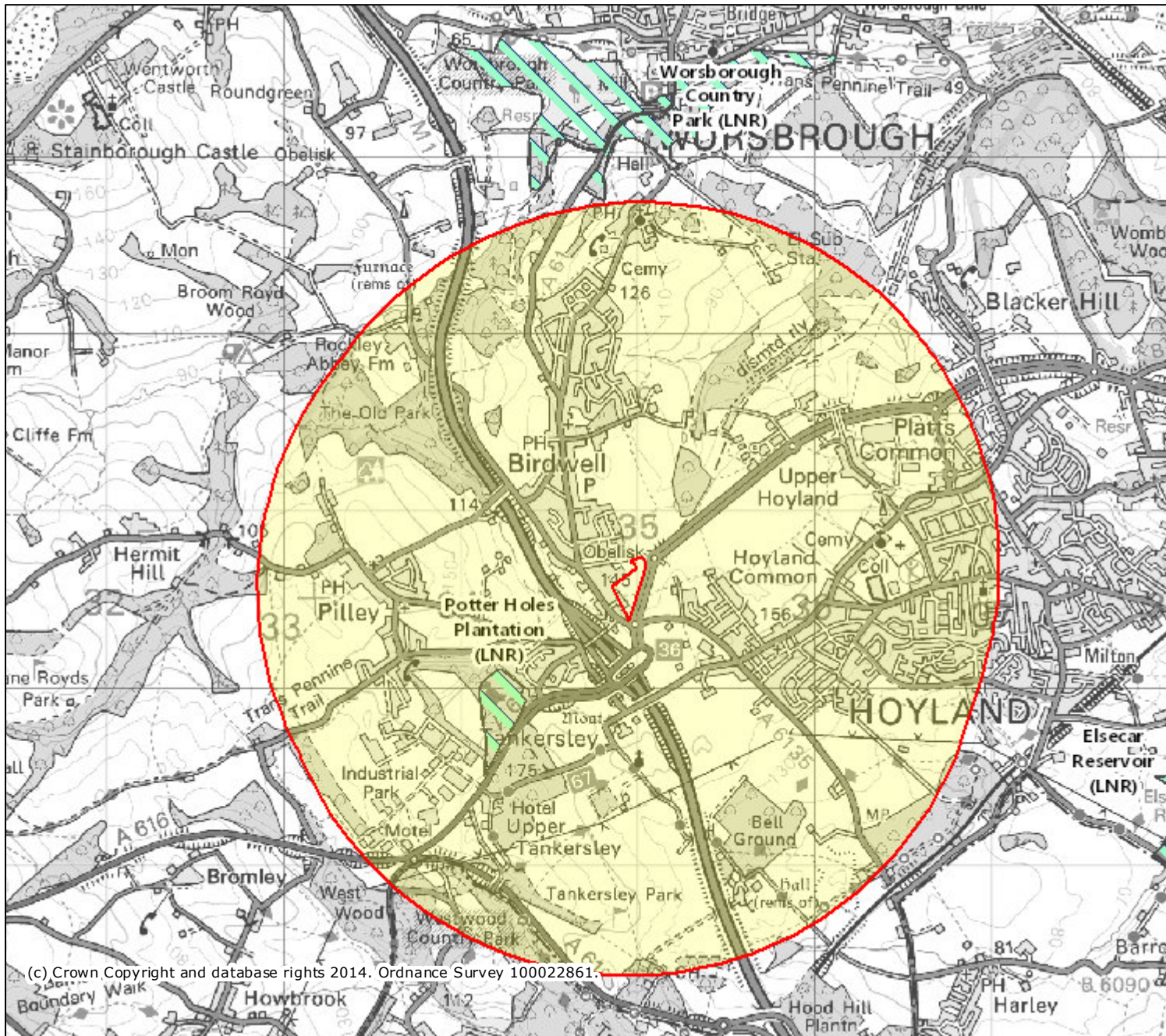
Currently holds licences for bats, great crested newts, otters, dormouse, badgers and barn owls for England and Wales.

Have previously held licences for water vole and crayfish.
















Has 20 years of practical experience with protected species working on enforcement, mitigation and enhancement at scales from local to international.

Experienced in obtaining Development Licenses from Natural England (formerly DEFRA) and Welsh Assembly Government. Services approximately 50-100 protected species applications per annum.

8.0 APPENDIX 3- DEFRA MAGIC MAP OF DESIGNATED SITES.



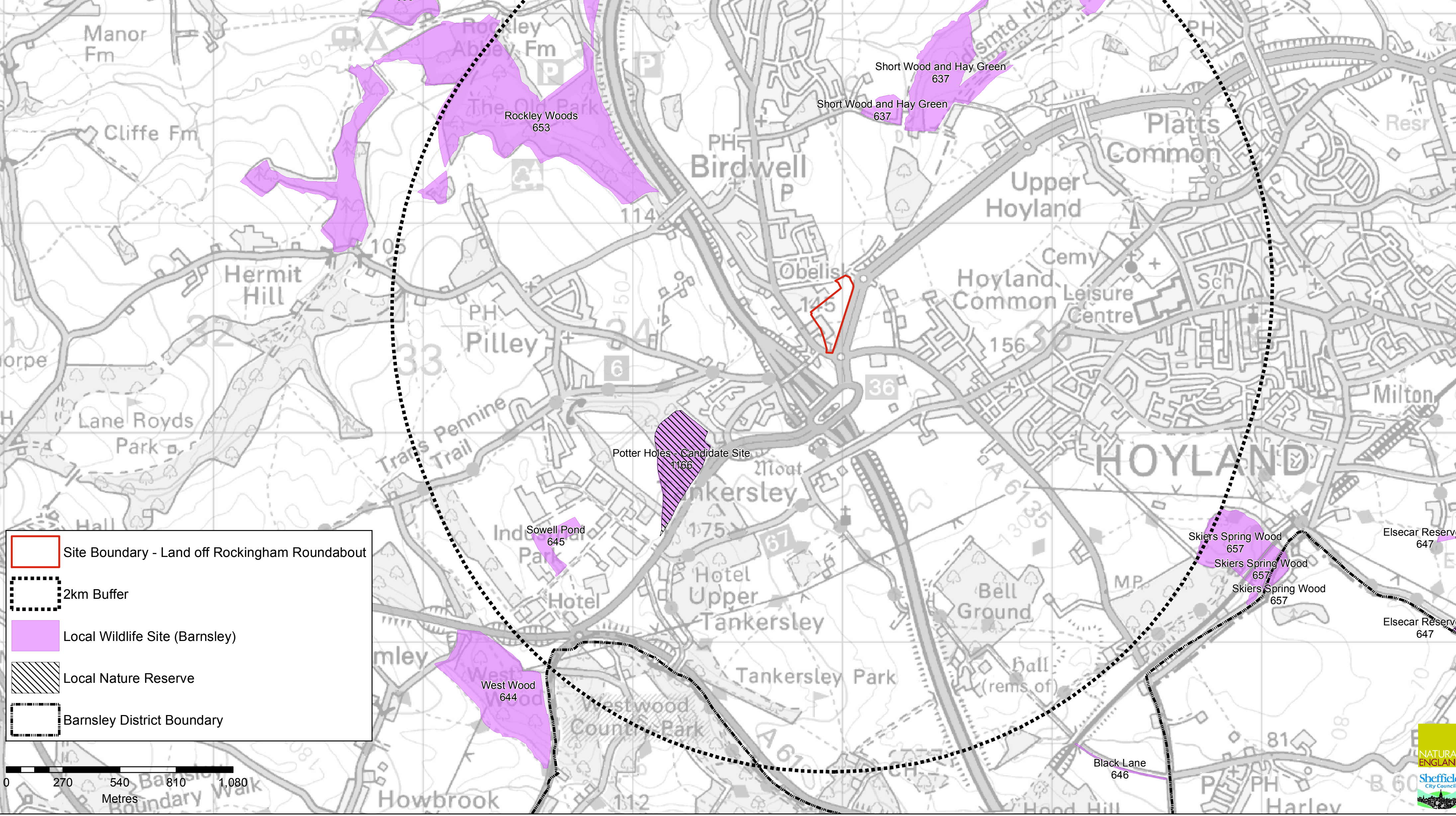
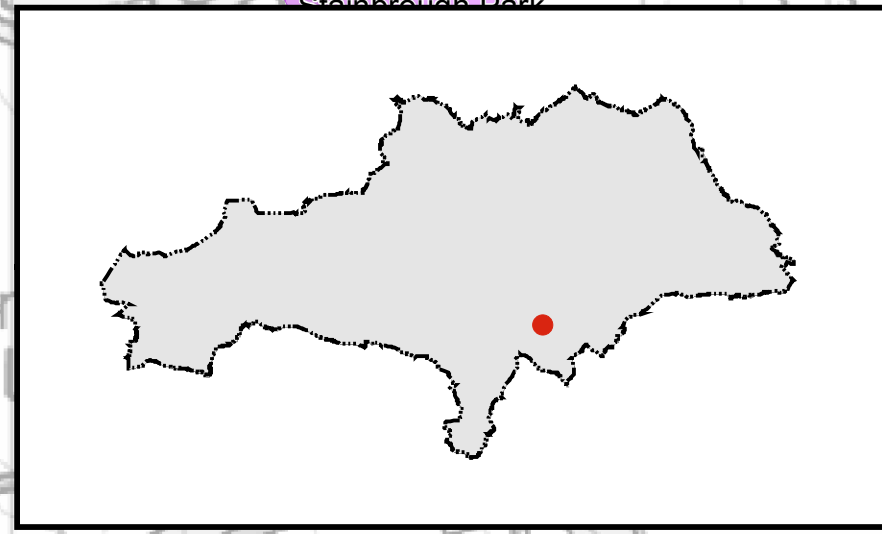
Legend


-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  National Parks (England)
- National Parks: Lake District and Yorkshire Dales Variation Orders 2012 - subject to confirmation (England)
-  Ramsar Sites (England)
-  Favourable Condition
-  Unfavourable Recovering
-  Unfavourable no change
-  Unfavourable Declining
-  Part Destroyed
-  Destroyed
-  Not Assessed
-  Sites of Special Scientific Interest (England)
-  Special Areas of Conservation (England)
-  Special Protection Areas (England)
-  Biosphere Reserves (England)

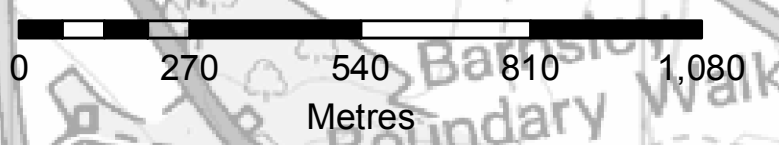
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 xmax = 440700
 ymax = 403600


Map produced by MAGIC on 14 August, 2014.
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9.0 APPENDIX 4- SWEBREC MAP OF DESIGNATED SITES.



-  Site Boundary - Land off Rockingham Roundabout
-  2km Buffer
-  Local Wildlife Site (Barnsley)
-  Local Nature Reserve
-  Barnsley District Boundary





Enzygo specialise in a wide range of technical services:

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Waste Technologies and Renewables
Waste Technologies
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Environmental Planning
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