

**Ecological Appraisal
Former Goldthorpe Colliery,
Barnsley**

Report reference: R-1705-01
October 2013

Report Title:	Ecological Appraisal Goldthorpe Colliery, Barnsley
Report Reference:	R-1705-01
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Date	28.10.13



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Summary Statement

The site's development need not impact on protected or otherwise important species, habitats or designated sites.

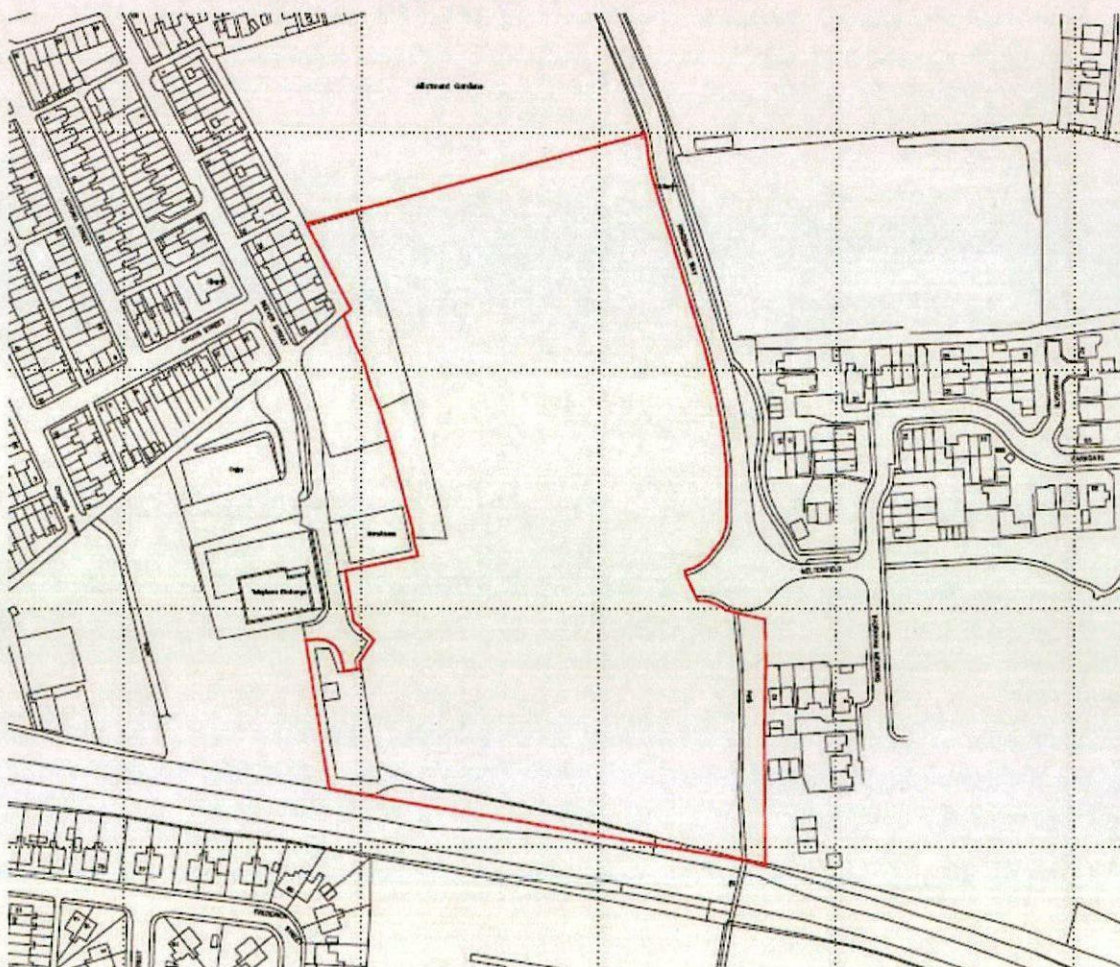
Precautions are recommended in relation to avoiding potential impacts on reptiles, nesting birds and the management of invasive species.

General recommendations are made in regards to the enhancement of the site for wildlife as part of the new development.

Introduction

1. Brooks Ecological Ltd was commissioned by ID Planning to carry out an Ecological Appraisal of land off Kingsmark way, Goldthorpe, Barnsley, South Yorkshire (SE 045 399).
2. The application site is reclaimed land which forms part of a former colliery site located to the south east of the village of Goldthorpe. The colliery closed in 1994 and since this time the secondary vegetation has become well established on the site.

Figure 1 Survey site boundary



Site Proposals

3. The assessed proposals shown in figure 2 are for a residential development with minor distributor roads and open space to the south east.

Figure 2 Indicative site proposals taken from Enjoy Design – sketch proposals October 2013



Site context

4. Aerial photographs published on commonly used websites were studied to place the site in its wider context and to look for ecological features that would not be evident on the ground during the walkover survey. This approach can be very useful in determining if a site is potentially a key part of a wider wildlife corridor or an important node of habitat in an otherwise ecologically poor landscape. It can also identify potentially important faunal habitat (in particular ponds) which could have a bearing on the ecology of the application site. Ponds may sometimes not be apparent on aerial photographs so we also refer to close detailed maps that identify all ponds issues and drains. We use Promap Street + scale maps for this purpose.
5. The site is bordered by residential development to the north and west, a new housing development currently under construction to the east and a disused railway line to the south. Directly north of the site is a small area of allotments.
6. The wider area consists of a network of small towns and villages set within a mainly arable landscape. A large area of woodland is located c.750m east of the site.

Wildlife corridors

7. A disused railway line runs along the southern boundary of the site. This is a large wooded corridor that runs east to west, unbroken from Goldthorpe to the west and Harlington to the east. Arable fields run adjacent to much of the line and present little value for wildlife or connectivity.
8. The line is partially connected to Bella Wood - ancient re-planted woodland located c.750m east of site, with a c.350m section of reclaimed land between the two areas. Further east along the line is additional re-planted woodland.

Water bodies

9. There are no water bodies within 500m of the application site. The closest water bodies are two ponds c.545m south and a large pond c.580m north west of the site. These ponds are poorly connected to the site with major roads and housing to the north plus a main road and large arable field to the south. All these features acting as barrier to movement, especially for amphibians.
10. A search of the MAGIC website was undertaken. The MAGIC site is a Geographical Information System that contains all statutory (e.g. Sites of Special Scientific Interest [SSSI's]) as well as many non-statutory listed habitats (e.g. ancient woodlands and grassland inventory sites). It is a valuable tool when considering the relationship of a potential development site with nearby important habitats. In addition information from the local record holders has been requested on locally designated sites.

Statutory Designations

11. There are no statutory designated sites within 2km of the application site. Denaby Ings SSSI is located c.4km south east of the application site. This is a small area of wetland, with no hydrological or other meaningful links to the application site.

Non-Statutory Designations

12. The only non statutory designated site within 2km is Bolton on Dearne Wetland – a LWS (Local Wildlife Site) c.1.5km south west of site.
13. This LWS is not connected by important wildlife corridors or easily accessible from the application site.

Other Listed Sites

14. Bella wood - ancient re-planted woodland is located c.750m east of site.
15. Bella wood is partly connected to the site via the disused railway, although there are no anticipated impacts from the current proposals on this area being sufficiently far from the site to attract regular pedestrian or recreational usage.

Extended Phase 1 Habitat Survey

Method

16. The survey was carried out on the 17th October 2013 and followed Phase 1 habitat survey methodology (JNCC, 1993). This involves walking the site, mapping and describing different habitats (for example: woodland, grassland, scrub). The survey method was "Extended" in that evidence of fauna and faunal habitat was also recorded (for example droppings, tracks or specialist habitat such as ponds for breeding amphibians). This modified approach to the Phase 1 survey is in accordance with the approach recommended by the Guidelines for Baseline Ecological Assessment (IEA, 1995) and Guidelines for Preliminary Ecological Appraisal (CIEEM 2012).

Results

17. The following habitats, arranged in order of area can be described within the application site and on its boundaries:
 - Rough neutral grassland;
 - Scrub;
 - Trees;
 - Hardstanding
 - Short ephemeral / colonising vegetation

Rough neutral grassland

18. Rough neutral grassland makes up the majority of the site and is dominated by common bent (*Agrostis capillaris*) with abundant cocksfoot (*Dactylis glomerata*) and occasional common couch (*Elytrigia repens*), false oat grass (*Arrhenatherum elatius*), yorkshire fog (*Holcus lanatus*), wavy hair grass (*Deschampsia flexuosa*) and perennial rye grass (*Lolium perenne*). Red fescue (*Festuca rubra* agg.) is locally dominant, generally to the south in areas close to the disused railway.
19. The grassland contains a range of forbs which grade into other habitats such as scrub and compacted gravel, but are generally found throughout the grassland. This includes locally dominant areas of black knapweed (*Centaurea nigra*) and willowherb (*Epilobium* spp.) and frequent creeping thistle (*Cirsium arvense*), ribwort plantain (*Plantago lanceolata*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*) and prickly sowthistle (*Sonchus asper*). Occasional forbs include cow parsley (*Anthriscus sylvestris*), greater plantain (*Plantago major*), autumn hawkbit (*Leontodon autumnalis*), smooth hawk's beard (*Crepis capillaris*), ragwort (*Senecio jacobaea*), tufted vetch (*Vicia cracca*), birdsfoot trefoil (*Lotus corniculatus*),

mugwort (*Artemisia vulgaris*), hogweed (*Heracleum sphondylium*), coltsfoot (*Tussilago farfara*), field horsetail (*Equisetum arvense*), michaelmas daisy (*Aster amellus*) and spear thistle (*Cirsium vulgare*), plus small amounts of blue fleabane (*Erigeron acer*), ribbed melilot (*Melilotus officinalis*), yarrow (*Achillea millefolium*) and tansy (*Tanacetum vulgare*) are found throughout.



Figure 3

General view across the site from the south west.

Scrub

20. Generally along the edges of the site but also is small patches throughout the centre and along a large bund to the south of the site are areas of scrub. This is dominated by bramble (*Rubus fruticosus* agg.) with occasional buddleia (*Buddleja davidii*), elder (*Sambucus nigra*), dogrose (*Rosa canina*) and field rose (*Rosa arvensis*). The scrub generally contains few forbs with occasional willowherb, cow parsley (*Anthriscus sylvestris*), black knapweed (*Centaurea nigra*), nettle (*Urtica dioica*), field bindweed (*Convolvulus arvensis*) and bracken (*Pteridium aquilinum*).



Figure 4

Area of scrub close to the north west corner of the site.

21. A large stand of Japanese knotweed (*Fallopia japonica*) is located on the western boundary.

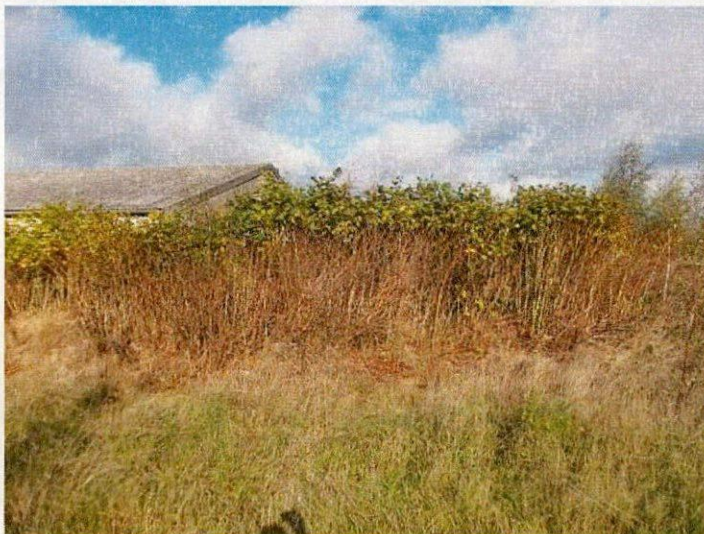


Figure 5

Stand of Japanese knotweed located on the western boundary.

Trees

22. As part of the restoration of the site, a range of trees have been planted, currently these are immature or early mature examples. These include downy birch (*Betula pubescens*), silver birch (*Betula pendula*), buddleia, goat willow (*Salix caprea*), crack willow (*Salix fragilis*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), Italian alder (*Alnus cordata*) and pride of India (*Koeleruteria paniculata*).



Figure 6

General view of regeneration tree planting across the site.

23. Along the eastern boundary of the site is a small band of trees which are of slightly older than the bulk of trees on site but are not mature. This include silver birch, wych elm (*Ulmus glabra*), elder, ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), alder (*Alnus glutinosa*), turkey oak (*Quercus cerris*), rowan (*Sorbus aucuparia*), hornbeam (*Carpinus betulus*) and hawthorn. The surrounding rough grassland grades into this habitat.

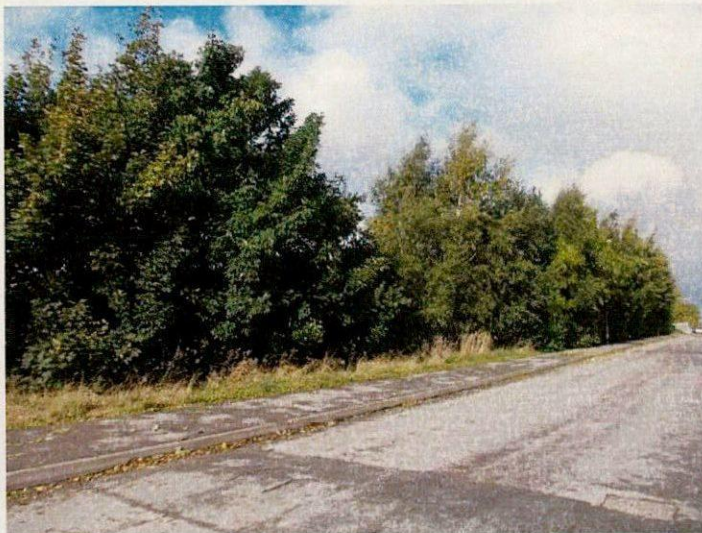


Figure 7

Band of semi mature trees along the eastern boundary. Taken from Kingsmark Way.

Hard-standing

24. To the south west of the site is a small area of tarmac. This surface supports little vegetation though in places the tarmac has cracked and a range of forbs have colonised. These include docks (*Rumex* spp.), common toadflax (*Linaria vulgaris*),

petty spurge (*Euphorbia peplus*), teasel (*Dipsacus fullonum*), willowherb, dandelion, ragwort and colts foot (*Tussilago farfara*). Grasses including annual meadow grass (*Poa annua*), common bent and creeping bent (*Agrostis stolonifera*) are also found occasionally in these areas.



Figure 8

Area of hardstanding in the south west corner of the site

Short ephemeral / colonising vegetation

25. To the edges of the tarmac are small areas of compacted gravel. This surface is dominated in places by creeping buttercup (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*) and dandelion (*Taraxacum* agg.). Similarly occasional forbs including black knapweed, autumn hawkbit, broad leaved dock, willowherb, white clover, scented mayweed (*Matricaria recutita*), greater plantain (*Plantago major*), groundsel (*Senecio vulgaris*), prickly lettuce (*Lactuca serriola*), ragwort, mugwort (*Artemisia vulgaris*) and creeping thistle are found throughout.
26. Occasional grasses including cocksfoot, yorkshire fog, red fescue, common bent (*Agrostis capillaris*) and creeping bent are found to the edges grading into the surrounding rough grassland.



Figure 9

Area of compacted gravel in the south west corner of the site.

Faunal appraisal

27. This section first looks at the types of habitat found on site or within the sphere of influence of potential development, then considers whether these could support protected , UKBAP or Local BAP (LBAP) priority species (referred to collectively as 'notable species'). A full list of LBAP priority species are provided as appendix 2.
28. Records of notable species supplied from a 2km area of search by Sheffield Biological Records Centre are used to inform this appraisal.

Bats

29. There are records of three roosts within 1km, all common pipistrelle bats. The closest is c.150m south west of the site recorded in 1995, with a count of 4 bats. A second roost is located c.360m north west of the site, recorded in 2005. A third roost was recorded in 1997 c.900m south east of the site.
30. A fourth roost was recorded in 1993, over 1km north west of the site with a maximum count of 187 bats. Finally there is a single record of a grounded bat from 2005, c.380m north west of site.
31. The low number of records is possibly due to small local bat populations or could be attributed to an under-recording in the area.
32. None of the trees on site were found to support any features with bat roosting potential, attributed primarily to their young stature.
33. The rough grassland, scrub and tree planting will no doubt be used by small numbers of bats but will not be important to their conservation status. Nonetheless recommendations are made later in the report in regards to retaining and enhancing foraging habitat for bats.

Amphibians

34. No ponds are present on site or within a 500m radius. The closest pond is c.545m south west of the site boundary. This has records of great crested newt but is separated from the site by Barburgh Lane and large arable fields. These are likely to act as barriers or restrict the movement of amphibians. To the west of these ponds is an area of rough grassland/scrub, likely to provide good terrestrial habitat which can support the amphibian populations associated with these pond.
35. All other ponds north of the site are disconnected from the site by major roads and have no records of great crested newt.

36. Absence of great crested newt on site can be reasonably concluded.

Birds

37. Supporting mainly rough grassland with occasional areas of scrub and immature/early mature trees the site is not likely to be used by anything other than common or garden birds.
38. The site can not be expected to support any notable assemblages and is unlikely to be of conservation significance for birds.
39. Records show a range of common BAP species such as thrushes, finches and swallows, none of which are recorded from the site or of species which could show any degree of dependence on the habitats present.

Badgers

40. No evidence of badgers could be found on the site and records suggest local absence.

Reptiles

41. As the site is an area of reclaimed land supporting secondary vegetation, it is unlikely to have been colonised by this group. The lack of local records also reduces the likelihood of this group being present on the site.
42. However as the site is linked to former railway infrastructure the presence of a small population cannot be ruled out. Proportionate to the risk general precautions are made later in the report, along with enhancements to benefit this group.

Other mammals

43. The site is likely to provide valuable habitat for hedgehogs in terms of foraging and cover. Hedgehog is listed on the UK Biodiversity Action Plan and is an LBAP species. Recommendations are made later in the report in regards to enhancing the sites value for hedgehogs.

Evaluation and Impact Assessment

Evaluation

44. The 'Radcliffe criteria' is applied to the site to assist with evaluation. This relies on factors such as size, diversity, age and replaceability of habitats or ecological features. In addition to this framework of evaluation, reference is also made to the Local BAP (Appendix 2) and UK BAP to determine if the site supports any Priority habitats.

Impact assessment

45. The impact assessment considers generic proposals to develop the site for residential use including associated roads and open space. Potential impacts include:
- Site preparation including vegetation and habitat removal
 - Direct effects on significant faunal groups or protected species
 - Effects on adjacent habitats or species such as disturbance, pollution and severance
 - Operation effects on wildlife such as noise and light disturbance

On site habitats

46. Almost the entire site is made up of secondary vegetation; it is not of high value due to its recent origin, resulting from its restoration. These grasslands do not fall into BAP priority habitat types and are assessed as being of low value; consequently their loss would not be of ecological significance.
47. Though also of recent origin, the planted tree belt along the eastern boundary has a good diversity of species and should be retained where possible. Loss of any boundary trees to facilitate development should be suitably compensated for through replacement planting.

Invasive species

48. A large stand of Japanese knotweed is located on the western boundary of the site. General precautions are made later in this report in regards to its removal. Its approximate location is marked on the attached plan D-1705-01.1.

On site fauna

49. Loss of the site would not be expected to have any significant impacts on protected or otherwise notable species. No additional studies are considered necessary to support this conclusion.

Off site

50. Impacts on statutory, non-statutory wildlife sites or other listed habitats cannot be expected due to lack habitat connectivity, absence of footpath links and distance from the application site.

General precautions

Reptiles

- Although it is unlikely reptiles are present on the site, a precautionary approach should be applied. Prior to works vegetation should be cleared working away from the northern boundary towards the southern boundary. If reptiles are present, they would be able to easily avoid injury or killing and move into suitable habitat (disused railway) away from the site.

Nesting birds

- To prevent the proposed works impacting on nesting birds, site clearance will need to be undertaken outside of the breeding bird season which is 1st March – 31st August inclusive. Any clearance that is required during the breeding bird season should be preceded by a nesting bird survey to ensure that the Wildlife and Countryside Act (1981) is not contravened through the destruction of nests and that any active nests are identified and adequately protected during the construction phase of the development.

Invasive species

- Japanese Knotweed is a Schedule 9 Part 2 species of the Wildlife and Countryside Act (1981). As such, it is an offence to plant or otherwise allow this species to grow in the wild. Site contractors should be made aware of this requirement. Licensed contractors should be sought for any removal of Japanese knotweed from site.
- Detailed information on these species can be found on the NNSS website at <https://secure.fera.defra.gov.uk/nonnativespecies/index.cfm?sectionid=47>

Enhancement

51. In line with planning guidance outlined in the National Planning Policy Framework (NPPF) development should take account of the value of ecosystem services and enhance ecological networks.

52. To retain the connectivity and avoid fragmenting existing wooded tracts along the disused railway to the south of the site, a buffer between the development and woody tract could be created along the southern boundary, which aims to improve the sites value for reptiles. Rows of south facing bunds planted with a range of native shrubs plus open areas of tussocky grass and short grass swards could be created. This should provide structural complexity, shelter and warm conditions required by reptiles. Any trees removed from the site should be placed as log piles in this area. This should compliment the existing wildlife corridor along the southern boundary by improving connectivity, providing structural diversity and acting as a screening between the development and disused railway. Any temporary or permanent lighting should be directed away from the southern boundary
53. Hedgerows are noticeably lacking in this location. Planting boundary hedgerows would improve connectivity and provide corridors, vital habitats and food sources to a wide variety of birds, mammals and insects. A species rich boundary hedgerow could be planted along the sites boundaries. This should include locally sourced native species such as hawthorn (*Crataegus monogyna*), guelder rose (*Viburnum opulus*), dog rose (*Rosa canina*), holly (*Ilex aquifolium*), blackthorn (*Prunus spinosa*), hazel (*Corylus avellana*), wild privet (*Ligustrum vulgare*) and field maple (*Acer campestre*). Tree standards may also be included in a new hedgerow where appropriate, to create a variety of structures. These may include crab apple (*Malus sylvestris*), oak (*Quercus* sp.), ash (*Fraxinus excelsior*), hornbeam (*Carpinus betulus*) and rowan (*Sorbus aucuparia*).
54. The site could benefit from the incorporation of artificial bird and bat boxes in to some of the newly created houses. These could be designed into the fabric of the buildings and aim to attract declining species such as house sparrow, starling, swift and bats.
55. Hedgehogs are in decline and act as important predators, ensuring a healthy ecosystem. Lack of suitable shelter in modern tidy gardens contributes to scarcity of this species. Hedgehog boxes could be installed in discreet locations among the landscaping. To increase the range of foraging habitat of any hedgehogs which visit the development site a single hole, c.15cm in diameter should be left at the base of each boundary fence.

References

- IEA. (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall
- Nature Conservation Committee (1990). *Handbook for Phase 1 Habitat Survey: A technique for environmental audit*. NCC
- CIEEM. (2013). *Guidelines for Preliminary Ecological Appraisal*. CIEEM

Bat Conservation Trust (2012) Bat Surveys – Good Practice Guidelines

English Nature (2004) Bat Mitigation Guidelines. English Nature, Peterborough.

JNCC (2004) The Bat Workers Manual. 3rd Edition.

ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System

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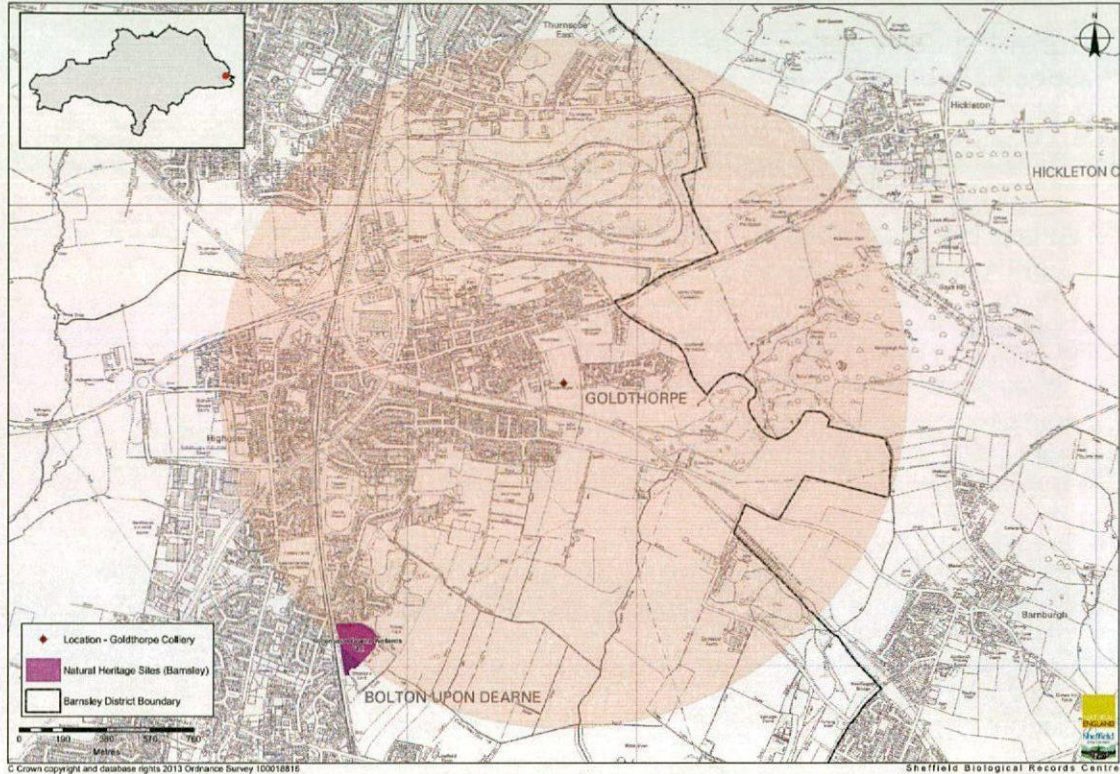
H. L. Andrews (2011) A habitat key for the assessment of potential bat roost features in trees

Ratcliffe, D.A. (1977) *A Nature Conservation Review*, Cambridge University Press

Appendix 1 Sheffield City Council Sites Search

Statutory and Non-statutory Nature Conservation Sites - Goldthorpe Colliery

Date - 27 Sep 2013



Appendix 2 Local BAP - Barnsley Biodiversity Action Plan

Table 1 Species Action Plans

Species/group

Hedgehog
Bats
Water Vole
Otter
Grey Partridge
Bittern
Kestrel
Little Ringed Plover
Lapwing
Barn Owl
Skylark
Tree Sparrow
Twite
Great Crested Newt
Salmon
Bullhead
White-clawed Crayfish
Glow Worm
Dingy Skipper
Bluebell

Table 2 Habitat Action Plans

Habitat

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
Open Mosaic Habitats on Previously Developed Land



-  Rough Neutral Grassland
-  Scrub
-  Hard-standing
-  Compacted Gravel
-  Trees
-  Japanese Knotweed indicative locations

Brooks
Ecological
Grounded advice

Project: Former Goldthorpe Colliery

Title: Ecological Features Plan

Drawing Number: D-1705-1.1

Scale: Do not scale Date: October 2013

Revision:

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