Preliminary Ecological Appraisal (PEA) Survey Report	
For:	Mario Monfredi, Monfredi Builders Ltd, 106 Holme Lane, Sheffield S6 4LW
Site	Land off Hill Street, Elsecar, Barnsley
Report Date:	30 November 2017
Report Reference:	HILL.27.11.2017

Surveying Ecologist:

Natasha Estrada BSc (Hons), MRes, MCIEEM

Natural England Bat Licence: 2015-12213-CLS-CLS

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Client:	Mario Monfredi, Monfredi Builders Ltd, 106 Holme Lane, Sheffield S6 4LW
Site Name:	Land off Hill Street, Elsecar, Barnsley
Grid Reference:	SE 38130 00375
Report:	Preliminary Ecological Appraisal
Date of survey:	30 November 2017
Surveyed by:	Natasha Estrada

Issue:	Revision:	Stage:	Date:	Prepared by:	Approved by:
1	-	Draft for review	30 November 2017	Jane Gruber, Estrada Ecology Ltd	Natasha Estrada MCIEEM, Estrada Ecology Ltd
2	n/a	FINAL	01 December 2017	Jane Gruber, Estrada Ecology Ltd	Natasha Estrada MCIEEM, Estrada Ecology Ltd

Summary

Estrada Ecology Ltd was commissioned, by Monfredi Builders Ltd, to conduct a preliminary ecological appraisal (PEA) of land off Hill Street, Elsecar, Barnsley to assess the site for its ecological value / identify any constraints to development and to update previous surveys undertaken on the site.

The survey site consists of, approximately 1.7ha of hard standing and bare disturbed ground with scattered trees; the majority of which are immature and running along the northern, western and southern site boundaries. The eastern elevation contains an area of hardstanding used as a builders' yard; upon which lies a former railway ticket office building, currently in use as office space for the builders' yard.

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Findings

Flora

The majority of floral species are associated with disturbed or waste ground, along with immature tree specimens of no intrinsic ecological value. Sparsely distributed semi-mature specimens of: hawthorn, *Crataegus monogyna; s*ycamore, *Acer pseudoplatanus;* and sessile oak, *Quercus petraea* were recorded on the southern site boundary, all of which are to be retained under current proposals.

No invasive flora species were recorded within the site boundary during the walkover survey in November 2017. Strands of Japanese knotweed, *Fallopia japonica* were recorded outside the south-western site boundary.

Fauna

Immature trees on the northern boundary of the site recorded negligible features for the potential for bats to use for roosting, or as a place of shelter due to age, density, and subsequent lack of features when assessed by a licenced bat ecologist (2015-12213-CLS-CLS). At the time of survey, semi-mature specimens on the southern boundary were recorded to contain superficial fissures. All trees recorded along the site boundary are to be retained under current proposals.

The site contains a former ticket office building on the eastern elevation. The building has been subject to three preliminary roost assessments, conducted by licenced bat ecologists in 2011, 2015 and 2017; all of which concluded that the building has low potential to support features which bats could utilise for roosting, or as a place of shelter. Furthermore, the 2015 survey recorded a dusk activity survey, which returned negative for emerging or re-entering bats.

Historical evidence of breeding birds was recorded within semi-mature trees on the southern site boundary (proposed to be retained under current proposals). No opportunities exist for ground nesting birds on site.

The site provides little suitability for foraging birds, with only isolated plantings along boundary features providing suitable opportunities.

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No field signs were recorded for: amphibians; badger; barn owl; brown hare; otter; reptiles; water vole. The site has negligible habitat to support these species.

Conclusions

The site is of low ecological value for flora.

The site is assessed as having negligible habitat for protected or BAP faunal species.

The former ticket office recorded low potential to support features which bats could utilise for roosting or as a place of shelter when assessed by a licenced bat ecologist. No field sign evidence was found to indicate use of the building by bats.

A previous bat activity survey conducted on the property recorded negative for bat emergence / re-entry behavior within the bat activity season 2015, concluding a few passes of common species were recorded within the general area. Considering the absence of bat field signs during the 2017 preliminary roost assessment, the presence of white light overspill on the two areas identified as having low bat potential, and two negative surveys being conducted previously on the property, it is recommended that the roof is stripped under ecological supervision.

In line with current legislation and best practice guidance, no further surveys are deemed necessary and no impacts are predicted.

Enhancement

Extensive planting of saplings on the western elevation of the site has already been implemented. It is expected that when this area grows and establishes biodiversity within the site will be enhanced for birds, bats and other fauna.

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Contents:

Whilst every effort has been taken to ensure the accuracy of this report and its contents in view of potential ecological constraints to development or the likely presence or absence of species it must only be viewed as a snap shot in time and therefore not be viewed as definitive. Due to external factors, such as seasonality, weather etc. having the potential to affect survey results no liability can be assumed for omissions or changes that may or may not occur after the date this report was produced.

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1 Introduction and Background to the Site

1.1 Estrada Ecology Ltd was commissioned, by Monfredi Builders Ltd, to conduct a preliminary ecological appraisal (PEA) of land off Hill Street, Elsecar, Barnsley to inform the proposed redevelopment of the site for residential housing.

The site consists of:

- C3.1 Tall ruderal communities
- A3.1 Scattered trees
- J2.4 Boundaries, fencing
- J4 Disturbed bare ground / Hardstanding
- J3.6 Building: Former ticket office

The majority of flora species recorded are associated with disused and disturbed wasteland, being isolated to the periphery of the site, with species and assemblages common and able to exploit cracks in disturbed ground.

A low number of self-set immature, scattered tree species were recorded on the northern and western boundaries. Semi-mature specimens were recorded to run along the southern boundary. The western elevation of the site has been recently planted with a large number of trees which are at sapling stage.

One built structure is present on the eastern elevation of the site. A former railway ticket office lies adjacent to Hill Street, housed upon a small area of hardstanding.

No water bodies are present within the site boundary, or connect directly to the site. A small stream is present outside the southern site boundary, along with two ornamental ponds recorded within the garden of a neighbouring property to the south.

1.2 Report Objectives

- Present the findings of the ecological survey
- Assess the potential of existing on-site habitats to support protected or notable species
- Evaluate any likely ecological impacts on protected and notable species or habitats because of the proposed development

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- Provide recommendations for any further species-specific survey and mitigation measures that may be required
- Provide habitat enhancement recommendations in line with the National Planning Policy Framework (NPPF, 2012).

1.3 Location of the site

The survey site central OS grid reference is SE 38130 00375.

1.4 Site description

The survey site is approximately 1.75 ha in size and is located within the village of Elsecar, south of Barnsley, South Yorkshire.

The survey site consists entirely of disturbed and waste ground with a small area of hard standing on the eastern elevation upon which is housed a former ticket office building.

Established vegetation is solely isolated to the site boundaries, with immature specimens of; oak, *Quercus robur;* rowan, *Sorbus aucuparia;* beech, *Fagus sylvatica;* ash, *Fraxinus excelsior;* silver birch, *Betula pendula;* and sycamore, *Acer pseudoplatanus* occurring occasionally along the northern boundary. Along the southern boundary, occurring occasionally, is: immature ash; silver birch; with semi-mature hawthorn; sycamore; and sessile oak present on the south-eastern elevation.

Tall ruderal communities occur rarely, being largely isolated sections of the northern and southern boundaries. Recorded species are native assemblages associated with disturbed and waste ground, including: rosebay willowherb, *Chamerion angustifolium*; common nettle, *Urtica dioica;* broad-leaved dock, *Rumex obtusifolius;* and fat hen, *Chenopodium album.* Hedge bindweed, *Calystegia sepium,* and bramble, *Rubus fruticosus*, occur rarely on the northern and western boundaries.

Species recorded as rare, exploiting shallows soils on the eastern elevation of hard core on the site, include: black medick, *Medicago lupulina;* yarrow, *Achillea* millefolium; common chickweed, *Stellaria media;* Autumn hawkbit*, Scorzoneroides autumnalis*; and dandelion, *Taraxacum officinale;* rare cotoneaster, *Rosaceae sp; and* Buddleia*, Buddleia sp.*

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The western elevation of the site is dominated by recent sapling plantings of numerous nature species.

A small number of immature specimens of cotoneaster, *Cotoneaster spp* and *Laurel sp* occur rarely on the south-eastern boundary.

1.5 Boundary features and surrounding land use

Boundaries are, predominantly, palisade metal fencing on the north and eastern elevations, with some areas of concrete panels present on the northern elevation.

The southern and western boundaries are formed by intact Heras fencing, with a small length of (approximately 5ft) stone wall separating the site for grazing land to the south.

Figure 1: The survey site within its wider setting (site indicated as red key line).

Google maps

2 Protected Species Legislation

2.1 Relevant legislation includes the Birds Directive (79/409/EEC) and the Wildlife and Countryside Act 1981 (as amended), which states that all birds, their nests and eggs are protected by law. Special considerations of Schedule 1 Birds and European Protected Species should be made.

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2.2 The EC Council Directive on the Conservation of Natural Habitats of Wild Flora and Fauna, 1992 (The 'Habitats Directive') requires the UK to maintain and/or restore naturally occurring habitats, especially those which are deemed to be vulnerable and declining in Europe. It also requires the protection of many species of plants and animals which are similarly threatened and declining throughout their European range, therefore giving effect to both site and species protection objectives. Appendix One lists habitats; and Appendix Two lists species, some of which UK has responsibility to maintain in favorable conservation status.

2.3 The Natural Environment and Rural Communities (NERC) Act came into force on 1st Oct 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England, as required by the Act. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

2.4 The UK Biodiversity Action Plan sets out the priorities for the UK regarding habitats and species of principle importance for conserving biodiversity in the UK. Local areas have then identified the habitats and species within their areas which are on the national list and those which are of importance locally.

2.5 Each county has its own local Biodiversity Action Plan (LBAP). The site falls within the Barnsley Biodiversity Action Plan area.

3 Survey Methodology

3.1 Desk top survey

A record search was commissioned from Sheffield City Council Ecology Unit for archive data for designated sites and species of conservation concern and / or legal protection at a national, regional and local level. The data search was conducted within a 1km radius of the site boundary. Due to the late commissioning of the survey and expected report date, records commissioned from previous surveys of the site were analysed.

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The Barn Owl Trust interactive map http://www.barnowltrust.org.uk/how-to-manage-land-for-barn-owls/suitable-land-for-barn-owls/postcode-to-10km-square-converter was consulted to provide an indication of habitat suitability for barn owl within the SE38 hectad, where the site is located.

Further inspection, using colour 1:25,000 OS base maps (www.ordnancesurvey.co.uk), magicmap (www.magic.gov.uk) and aerial photographs from Google Earth (www.maps.google.co.uk), was also undertaken to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.

3.2 Field Survey

The survey area was investigated on foot to ascertain habitats on site, and the potential of those habitats to support ecological diversity. The vegetation types present within the site were assessed by experienced ecologist, Natasha Estrada, using methodology based on that described in the Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit (Nature Conservancy Council, 1990.). The results of the survey are presented in Appendix Two.

3.3 Habitats and features with potential to support protected and / or conservation priority faunal species, together with any field signs of such species, were recorded on the field map using target notes. A search was undertaken for the following key habitats and / or field signs for protected or conservation priority species highlighted in Table 1.

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Table 1: Key habitats and field signs or protected and priority species

Taxon	Indicative habitats	Field signs
Bats	Roosts – Trees, buildings, bridges caves etc. Foraging areas – e.g. parkland, water bodies and streams, wetlands, woodland edge, hedgerow Commuting routes – linear features (e.g. hedgerows).	In or on potential roost sites: Droppings stuck to walls; urine spotting in roof spaces; oil from fur staining round roost entrances; feeding remains (e.g. moth wings).
Great crested newt	Ponds within 500m of suitable habitat within the site boundary. Suitable (terrestrial) habitat includes rough grassland, scrub and woodland, log and rubble piles and other debris, animal burrows.	Eggs, Individuals of all life stages. Egg rolled plants.
Reptiles	Rough grassland, log and rubble piles, compost heaps.	Sloughed skins; eggs, individuals.
Birds	Trees, scrub, hedgerow, field margins, grassland.	Nests; droppings below nest sites (especially in buildings of trees); tree holes.
Badger	Found in most rural and many urban habitats.	Excavations and tracks: sett entrances, latrines, hairs, well-worn paths; prints; snuffle holes.
Water vole	Water bodies/water courses.	Burrow entrances; prints; latrine areas; faeces; feeding stations.
BAP Insects	Each butterfly species has its own habitat requirements determined by the food plant of the caterpillar, the nectar source for the adult butterfly and the conditions needed for the caterpillar to survive and then pupate successfully.	Eggs, larva, Pupa, adult butterfly. Habitat type and presence of food plants.

3.4 Timing

The survey was conducted on 30 November 2017.

3.5 Weather conditions

The survey was carried out in suitable weather conditions, as outlined by Natural England guidelines; cloudy, with temperatures averaging 3.5-4^{o}C.

3.6 Personnel

The survey was carried out by ecologist Natasha Estrada of Estrada Ecology Ltd; an experienced ecologist with over twenty years' experience within ecological consultancy and the conservation sector, and the holder of Natural England bat and great crested newt survey licences. Furthermore, Natasha Estrada

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has been the named ecologist on development licenses for badger and EPSM licences for bats.

4 Ecological Constraints

4.1 The PEA survey was undertaken during a sub-optimal period; hemicryptophyte flora species would not be visible during the walk over survey.

4.2 It should be noted that this ecological appraisal provides baseline ecological data at the time of survey only, and does not include flora or fauna which may be present at different times of the year.

4.3 An absence of species records from within a search radius does not provide confirmation that a species is absent from within the search area.

5 Survey Results

5.1 Desk top survey results

Data held by Sheffield City Council Ecology Unit show the majority of records held within the search radius are for Elsecar Reservoir.

Figure 2: Protected species records within the vicinity of the site

Species	Legal Protection / Conservation Priority Status	Notes
Kingfisher	WCA BERN BD	Record from 1990, Elsecar Reservoir
Goldeneye	WCA BD	Record from 1997, Elsecar Reservoir
Black necked grebe	WCA BERN BD	Record from 1989, Elsecar Reservoir
Great spotted woodpecker	BERN BD	Record from 2009, 'Barnsley'
Lesser spotted woodpecker	BERN BD	Record from 1998, Elsecar Reservoir
Swallow	BERN BD	Record from 2001, Elsecar Reservoir
House martin	BERN BD	Record from 2001, Elsecar reservoir
Red kite	WCA BERN	Record from 2012, Elsecar
Fieldfare	WCA	Record from 1996, Hoyland
Sparrowhawk	BERN BD	Record from 2009, 'Barnsley' Common
Tern	BERN BD	Record from 2007, Elsecar Reservoir
Redwing	WCA	Record from 1996, Elsecar Reservoir
Daubenton's bat	WCA BONN HD CNHR LBAP BERN	Record from 1985 Elsecar Reservoir
Leislers bat	WCA BONN HD CNHR LBAP BERN	Record from 1985 Elsecar Reservoir
Robin	BERN BD	Record from 2009, Barnsley

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Species	Legal Protection / Conservation Priority Status	Notes
Blackcap	BERN BD	Record from 2009, 'Barnsley'
Wren	BERN BD	Record from 2009, Barnsley
Marsh tit	BERN BD	Record from 2009, Barnsley
Willow tit	BERN BD	Record from 2005 Elsecar reservoir
Long tailed tit	BERN BD	Record from 2009, Barnsley
Blue tit	BERN BD	Record from 2009, Barnsley
Great tit	BERN BD	Record from 2009, Barnsley
Coal tit	BERN BD	Record from 2009, Barnsle
Lesser whitethroat	BERN BD	Record from 1998, Elsecar
Lapwing	LBAP BD	Record from 1988, 1989, 2000, Elsecar Reservoir
Grasshopper warble	LBAP BERN BD	No Record from 2012, Elsecar Reservoir
Reed bunting	LBAP BERN BD	Record from 2000, 2001, 2005 Elsecar Reservoir
Yellow wagtail	LBAP BERN BD	Record from 1979, Elsecar Reservoir
House Sparrow	LBAP BERN	Record from 2008, 2009, 'Barnsley'
Cuckoo	LBAP BD UKBAP	Limited habitat. Record from 2007, Elsecar Reservoir
Harvest mouse	LBAP	No Record from 2000 nr Kings Wood, 1995, Elsecar Reservoir
Hedgehog	LBAP	Record from 1984 nr Hoyland

HD- Habitats Directive
UK BAP- UK Biodiversity Action Plan
WCA- Wildlife and Countryside Act 1981 (as amended)
CNHR- The Conservation of natural habitats regulations
BERN- The Bern convention on biodiversity
BONN- The Bonn Convention on Biodiversity
BD- The Birds Directive
LBAP- Local Biodiversity Action Plan

5.2 Habitat Description

5.2.1 Overview

The survey site is approximately 1.75 ha in size located within the village of Elsecar, to the south of the town of Barnsley, South Yorkshire.

The site comprises of predominantly disturbed bare ground and hard standing, with boundary features including: metal fencing; immature scattered trees; sparsely distributed tall ruderal communities; and a detached former ticket office building on the eastern elevation.

The Phase 1 habitat mapping description is:

- C3.1 Tall ruderal communities
- A3.1 Scattered trees

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- J2.4 Boundaries, fencing
- J4 Bare ground (disturbed) / Hardstanding
- J3.6 Building: Former ticket office

See Appendix Two for a Phase 1 map of the survey site.

A list of all species recorded on the site during the walk over survey in November 2017 can be found in Appendix One.

5.2.2 (J4) Disturbed ground

The site, almost exclusively, comprised disturbed ground, with very limited and rarely occurring floristic diversity. Flora species present are consistent with disused waste ground, with freely draining and stony soil, including: rare common nettle, *Urtica dioica;* broad-leaved dock, *Rumex obtusifolius;* black medick, *Medicago lupulina;* common chickweed, *Stellaria media*; Autumn hawkbit*, Scorzoneroides autumnalis* and dandelion, *Taraxacum officinale.*

Figure 3: Disturbed ground which dominates the site

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5.2.3 C3.1 Tall ruderals

Occurring rarely, sparsely distributed tall ruderal communities are solely isolated to small areas of the northern and southern boundaries, and comprise: dominant fat hen; common nettle; broad-leaved dock; and rosebay willowherb, with occasional: bracken, *Pteridium aquilinum;* spear thistle, *Cirsium vulgare;* and teasel, *Dipsacus fullonum,* occurring rarely on the western boundary.

5.2.4 J3.6 Buildings

Located on the eastern elevation of the site, housed upon hard standing, is the former ticket office building. Constructed from brick, with a pitched, slate roof with two chimney stacks, the two storey building is currently used as office space for the building company in situ.

The property has intact, wooden barge boards and lead flashing present around chimney stacks. Small areas of mortar were recorded missing on the property's gable ends, and in an area of loose tiles on the northern elevation, of a size which could offer access and roosting potential for bats. The building was categorised as having low potential to provide features for roosting or a place of shelter by bats when surveyed by a licenced bat ecologist (2015-12213-CLS-CLS).

Figure 4: The former ticket office

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5.2.5 A3 Scattered trees

Sparsely distributed immature specimens of: oak; beech; rowan; ash; silver birch; grey willow, *Salix cinerea;* and sycamore occur rarely along the northern boundary, with semi mature specimens of hawthorn and sessile oak occurring rarely along the southern boundary.

Figure 5: Scattered trees along boundary features on site

A number of recently planted tree saplings dominate the western elevation of the site.

Figure 6: Recently planted saplings on the western elevation of the site.

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5.2.6 Boundaries

Boundaries comprise metal palisade fencing and concrete slabs on the northern elevation, with intact Heras fencing encircling the site on the remaining elevations. A stone wall is located on the south-eastern boundary, with a high metal security gate on the far eastern boundary.

All boundaries were recorded as being intact at the time of survey, with no evidence of them being undermined or compromised.

Figure 7: Boundary features

5.3 Designated sites

5.3.1 Statutory designated sites

The Multi-Agency Geographic Information for the Countryside (MAGIC) website indicates that there are no international or national statutorily designated sites for nature conservation within 2km of the site boundary.

5.3.2 Non statutory designated sites

One site was recorded within the search area at the extreme southern radius of 1km from the site: Elsecar Reservoir LNR. Only part of the LNR lies within the search area.

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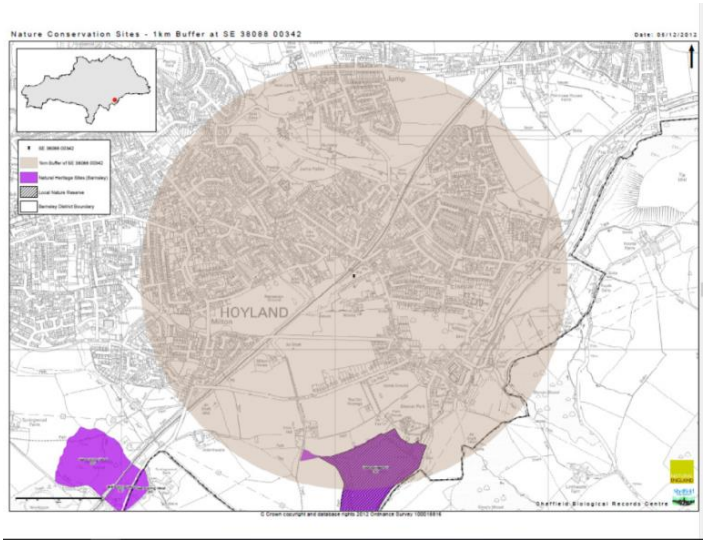
Figure 8: Non Statutory designated sites within a 1km radius from grid as supplied by Sheffield city council ecology unit.

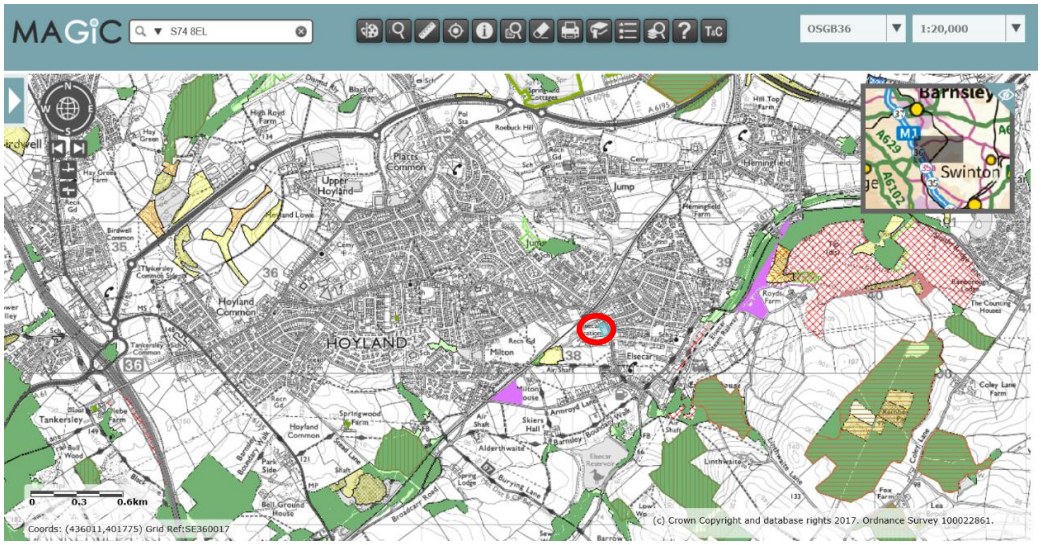


5.3.3 UK Priority habitats

Two habitats which feature on the priority habitat inventory were recorded within a 2 Km radius from grid neither of which occur within the site boundary:

- Deciduous Woodland
- Good quality semi-improved grassland

Figure 9: UK Priority Habitat recorded within a 1km radius from grid



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5.4 Protected species:

5.4.1 Amphibians

No amphibian records were returned for the search area. The site contains no water bodies within its boundary and none were recorded to feed into, or out of the site.

A small stream runs parallel to the site, outside the southern site boundary, with two ponds recorded some 45 metres and 312 metres south of the site boundary, separated from the survey site by residential gardens and field boundary hedgerows and arable land respectively.

The site itself provides low habitat suitability for amphibian species; comprising, primarily, hard standing and disturbed ground, with no suitable features recorded for hibernacula / terrestrial use.

No further surveys are recommended to for amphibians.

5.4.2 Badger

No records for badger were returned for the search area. The presence of intact metal fencing that encircles the site largely acts as a permanent barrier preventing entry onto the site by any badger within the locality.

No field signs positive for badger including: paths; sett entrances; latrines; and snuffle holes were observed during the walkover site survey. No evidence of undermining of the fence that surrounds the site by badger was recorded throughout the survey.

No further surveys are recommended in this instance for badger.

5.4.3 Barn owl, *Tyto alba*

No records for barn owl were returned from the records search. The SE38 hectad, where the site is located, is indicated on The Barn Owl Trust interactive map www.barnowltrust.org.uk and is shown as suitable habitat for barn owl. However, the site provides negligible habitat for barn owl for foraging, roosting and or breeding.

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No evidence of barn owl was recorded during the walk over PEA survey in November 2017. No further surveys are recommended in this instance for barn owl.

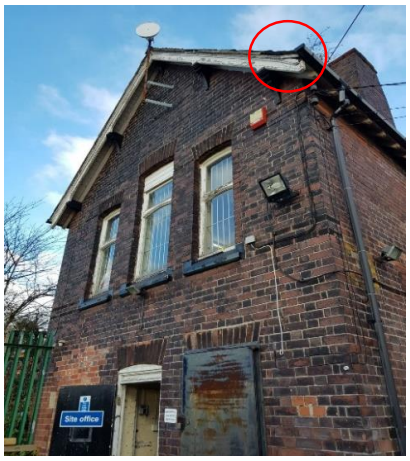
5.4.4 Bats

Records for Daubenton's and Leisler's bat were returned for the search area both dating from 1985 for Elsecar Reservoir.

The former ticket office was recorded as containing a low level of features which bats could utilise for roosting, or as a place of shelter when assessed by a licenced bat ecologist (2015-12213-CLS-CLS). No field sign evidence synonymous with bat use was recorded throughout the survey.

Two previous bat surveys undertaken by licenced bat ecologists in 2011 and 2015 recorded negative for field sign evidence of bat use of the building; the latter recording no bats emerging from or re entering the property during an activity survey undertaken in 2015.

Figure 10: The former ticket office with areas of low roost suitability highlighted.



Housed upon the property are a number of LED white light security lights overspilling the fabric of the building and immediate area. Furthermore, as a security measure lighting is present within the wider yard area elevating localised light levels.

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Trees

A preliminary ground level roost assessment of trees within the site was conducted, using guidelines from Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition) 2016, by a licenced bat ecologist (2015-12213-CLS-CLS).

The limited number of trees on site are predominantly immature, occuring on the northern boundary. Based on their condition, age, structure and features, the trees were found to have no suitable features with potential for roosting and / or sheltering bats.

Semi-mature specimens of hawthorn and sycamore present on the southern boundary were recorded to contain superficial fissures upon inspection by a licenced bat ecologist. Under current proposals, these are to be retained in situ.

The western elevation of the site contains recently planted saplings offering negligible potential for roosting bats.

Figure 11: Supericifial fissures in trees to be retained on the southern boundary.

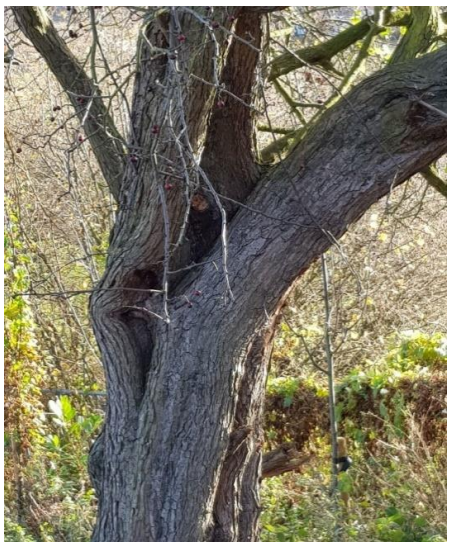

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Table 2: Tree features commonly used by bats for roosting, shelter, and field signs that may indicate use of trees by bats (BCT Guidelines 2016).

Features of trees used as bat roosts	Signs indicating possible use by bats
Natural holes	Tiny scratches around entry point
Woodpecker holes	Staining around entry point
Cracks/splits in major limbs	Bat droppings in, around or below entrance
Loose bark	Audible squeaking at dusk or in warm weather
Hollows/cavities	Flies around entry point
Dense epicormic growth	Distinctive smell of bats
Bird and bat boxes	Smoothing of surfaces around cavity

Foraging

The site provides very limited, suitable foraging habitat for bats. High quality foraging habitats exist outside the site boundary.

Lighting

The western elevation of the site recorded negligible light levels and negligible foraging potential within the site boundary. The eastern elevation of the plot contains white LED security lighting which overspills directly on to the areas of hard standing and the former ticket office survey site, diminishing the likelihood of the site to be used by bats as a commuting line. Street lighting is also present immediately outside the eastern site boundary, enhancing the levels of artificial light and overspill adjacent to, and within the survey site.

5.4.4 Birds

A number of avian records were returned for the search area, all being recorded at Elsecar Reservoir and dated between 1989 and 2012. Limited habitat exists for breeding birds within immature trees on the northern boundary. Some suitable habitat exists in semi-mature trees on the southern boundary.

No evidence of breeding birds (historical) was recorded at the time of survey. However, the survey offers a snap-shot in time and, therefore, must not be viewed as definitive, as there is potential for nesting birds to be present at other times.

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The site provides negligible opportunities for ground nesting birds due to disturbance.

5.4.5 Invertebrates

The survey site comprises: disturbed ground and hard standing; scattered trees and sparse vegetation, providing sub-optimal / habitat for invertebrates. The site is lacking habitat mosaic and suitable food resources for adult and larval invertebrate stages.

5.4.6 Reptiles

Presence / likely absence surveys conducted in May 2015 recorded negative for any species of reptile. Since that time the site has been cleared of all suitable vegetation and provides negligible shelter and negligible habitat for reptiles. No suitable hibernacula features were recorded within the site boundary.

The site fails to provide suitable cover, feeding resources and hibernacula features for reptiles.

No further surveys are recommended for these species.

5.4.7 Water vole

No water bodies suitable to support water vole are present on site, the site provides negligible habitat for this species.

Immediately outside the southern boundary lies a small stream. No field sign evidence to indicate the presence of water vole within the stream was recorded when observed from inside the site boundary.

5.4.8 Other species

The site does not support suitable habitat for any other protected or significant fauna, such as: dormouse; otter; brown hare; or white-clawed crayfish.

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6 Conclusions

6.1 Designated sites

No statutory designated sites are located within the survey area and no impacts are predicted.

6.2 Habitats and vegetation

No Annex 1 Habitats as defined in the EC Habitats Directive occur within the site or immediately adjacent and no impacts are predicted via the proposals.

6.3 Elsecar Reservoir LNR lies at the extreme southern radius of 1km search radius: Only part of the LNR lies within the search area. No impacts are predicted via the proposed development of the site. The survey site is separated from Elsecar Reservoir by road networks and residential housing largely impeding dispersal by terrestrial species. The lack of suitable habitat on the survey site largely diminishes the potential for use of the site by mobile species recorded at the LNR.

No impacts are predicted on wildlife corridors via the proposals.

6.4 Assessment of significance of impact on protected fauna

6.5 Amphibians and reptiles

No evidence of amphibians was recorded throughout the survey

No water bodies were recorded to connect to the survey area, and none are present on the survey site. The site provides negligible terrestrial habitat for amphibians, comprising hard standing and disturbed and bare ground. Debris in the form of rocks and stones are present on the western and southern elevations of the site, but comprise individual debris, rather than rubble piles.

The site is deemed to provide hostile conditions for reptile species.

No impact on these species is predicted.

No further surveys are recommended for these species.

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6.6 Badger

No records were returned for the search area. The site has negligible habitat to support this species; no field evidence was recorded for during a walkover survey November 2017.

No impact on these species is predicted.

No further surveys are required for these species.

6.7 Bats

Trees within the site have negligible features suitable for use by bats and have been classified as having negligible potential to support bats, using Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition) 2016, when surveyed by a licenced bat ecologist (2015-12213-CLS-CLS).

The former ticket office, on the eastern elevation of the site, is deemed to provide low potential for use by bats for roosting, or as a place of shelter when assessed by a licenced bat ecologist (2015-12213-CLS-CLS).

No field evidence of bats was recorded during the survey.

The site has very low-quality foraging / commuting potential, being predominantly hard standing and disturbed ground, comprising sparsely distributed tree species. The loss of these features in a local context is deemed to have a negligible impact on bats of local provenance.

The former ticket office is directly overspilled by white light security lighting, of an intensity likely to dissuade use of the immediate area by bats, particularly *Myostis* and *Plecotus* species.

Optimum foraging habitat, with natural roosting opportunities exists outside the site boundary; within broadleaved trees and scrub outside the south- eastern site boundary.

Due to the proposed positioning of the housing, limited light overspill is predicted on habitats outside the site boundary to the west. The retention of the undeveloped western elevation of the

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site is likely to act as a buffer for any light overspill on to habitats outside the site boundary to the west.

6.8 Birds

No evidence of breeding birds was recorded on site during the PEA survey in November 2017. The very limited number of immature trees on the northern boundary have sub-optimal potential to support breeding birds. Semi-mature specimens on the southern elevation of the site are of an age and size which could be used by birds for breeding. Under current proposals these are to be retained.

The potential for ground nesting birds is limited by disturbance factors.

6.9 Invertebrates

The survey site is made up of hard standing and disturbed ground, with a sparse number of scattered trees, the majority of which are immature; providing sub-optimal / negligible habitat for the invertebrate species, due to the lack of habitat mosaic and suitable food resources for adult and larval invertebrate stages.

No impact is predicted for these species and no further surveys are required.

6.10 Water vole

No water bodies are present on the site and the site has negligible habitat to support this species. A small stream runs parallel to the site outside the southern boundary. Under current proposals no encroachment within five metres of the bank edge is proposed.

No impact is predicted for these species.

No further surveys are required.

6.11 Other protected and significant fauna

The site does not support appropriate habitat for other protected species or significant fauna such as: otter; dormouse; white-clawed crayfish; barn owl; or brown hare.

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7 Recommendations

7.1 Recommendations in respect of bats

Trees on site are deemed to have negligible potential to support bats for shelter and / or roosting, using BCT: Bat Surveys for Professional Ecologists, Good Practice Guidelines, 2016 (3rd Edition) based on their condition, age, structure and features. Under current proposals, trees on the western, southern and eastern elevations of the site are due to be retained.

The site is deemed unlikely to support major foraging grounds and / or commuting lines due to the lack of suitable habitat on site and the level of direct artificial white light overspill onto the ticket office and hard standing.

A previous bat activity survey conducted on the property recorded negative for bat emergence / re-entry behaviour within the bat activity season 2015; concluding a few passes of common species were recorded within the general area.

In light of the absence of bat field signs during the 2017 preliminary roost assessment, the presence of white light overspill on the two areas identified as having low bat potential, and two negative surveys being conducted previously on the property, it is recommended that the roof is stripped under ecological supervision.

7.2 Recommendations for birds: As a precautionary measure, works, including clearance and tree works (if applicable), should be undertaken outside the breeding bird season, typically March - September inclusive. If this is not possible, a walkover survey should be conducted by a qualified ecologist to ensure the site is clear. If any breeding birds are found, measures will be taken to protect the nest and occupants until the breeding has completed.

7.3 Recommendations for non-native / invasive flora: Japanese knotweed was recorded outside the western site boundary. Care must be taken not to allow the plant to grow and encroach onto the survey site.

7.4 Recommendations for water vole: Should plans change, and encroachment of within 5 metres of the stream outside the

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southern site boundary be proposed, then it is recommended that presence / likely absence water vole surveys are conducted.

8 Enhancement

8.1 A tree planting scheme has been implemented on the western elevation of the site to increase invertebrate species, and enhance the attractiveness of the site for birds and other fauna. Upon growth and establishment of this area, it is deemed that biodiversity of the survey site will be enhanced, as will connectivity to habitats outside the south western and western boundary.

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Appendix One: Survey site species list, land off Hill Street, Elsecar, Barnsley, 30 November 2017

Species List	
Taxon	**Vernacular**
Trees	
Fraxinus excelsior	Ash
Fagus sylvatica	Beech
Buddleia davidii	Buddleia
Sambucus nigra	Elder
Salix cinerea	Grey willow
Crataegus monogyna	Hawthorn
Quercus robur.	Oak
Sorbus	Rowan
Quercus petraea	Sessile oak
Betula pendula	Silver birch
Acer pseudoplantanus	Sycamore
Flora	
Prunus padus	Bird cherry
Pteridium aquilinum	Bracken
Rubus fruticosus agg.	Bramble
Prunus rotundifolia	Cherry laurel
Galium aparine	Cleavers
Tussilago farfara	Colt's-foot
Stellaria media	Common chickweed
Cotoneaster spp.	Cotoneaster
Taraxacum officinale agg.	Dandelion
Rumex obtusifolius	Dock
Rosa canina	Dog rose
Chenopodium album	Fat Hen
Tanacetum pathenium	Feverfew
Senecio vulgaris	Groundsel
Calystegia sepium	Hedge bindweed
Hedera spp	Ivy
Centaurea nigra	Knapweed

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Dryopteris filix-mas	Male fern
Urtica dioica	Nettle
Leucanthemum vulgare	Oxeye daisy
Senecio jacobea	Ragwort
Rhododendron ponticum	Rhododendron
Plantago lanceolata	Ribwort plantain
Chamaenerion angustifolium	Rosebay willowherb
Sonchus oleraceus	Sow thistle
Cirsium vulgare	Spear thistle
Dipsacus fullonum	Teasel
Cirsium spp.	Thistle
Lamium album	White dead nettle

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Appendix Two: Phase one map of the survey site

Key	
●	Japanese knotweed outside the site boundary
✘	Scattered trees
■	Buildings and hard standing
	Bare / distributed ground
	Site boundary

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Appendix Three: Wildlife-friendly plantings

Common Name	***Scientific name***	**Wildlife value**
Large trees		
Ash	*Fraxinus excelsior*	68 species of insects/mites and 32 species of lepidoptera. Seeds eaten by birds and mammals.
Beech	*Fagus sylvatica*	98 species of insects/mites and 51 species of lepidoptera. The masts are eaten by birds and
Cherries	*Prunus avium, Prunus padus*	9 species of lepidoptera. Berries eaten by birds.
Elm	*Ulmus procera*	Good tree for insects and birds. 124 species of insects/mites and 24 species of lepidoptera are associated with elm trees.
Oaks	*Quercus pedunculate, Q. Robur*	423 species of insects/mites and 193 species of lepidoptera. Acorns eaten by a variety of birds and mammals. Very important for insect eating birds.
Scots pine	*Pinus silvestris*	91 species of invertebrate are known to use this species.
Spruce	*Picea spp.*	73 species of invertebrate are known to use this species.
Small leaved lime	*Tilia cordata*	
White willow	*Salix alba*	450 species of insects/mites and 166 species of lepidoptera.
Medium/small trees		
Alder	*Alnus glutinosa*	141 species of insects/mites and 71 species of lepidoptera. Seeds are good for birds such as
Apples	*Malus spp.*	118 species of insects/mites and 76 species of lepidoptera. Fruits are eagerly consumed by birds
Field maple	*Acer campestre*	149 species of insects/mites and 24 species of lepidoptera. Fruits eaten by small mammals.
Holly	*Ilex aquifolium*	7 species of invertebrate are known to use this species. Berries good for birds and small mammals. Caterpillars of the holly blue butterfly
Pears	*Pyrus spp.*	Good for invertebrates. Fruits are eagerly consumed by birds and mammals.
Rowan	*Sorbus aucuparia*	58 species of insects/mites and 28 species of lepidoptera. The ripe berries attract birds such as
Birch (silver and downy)	*Betula pendula,B pubescens*	229 species of invertebrates are known to use these species. Best tree for moth larvae. Catkins good food source for birds such as redpolls and tits.
Plants for hedges		
Blackthorn	*Prunus spinosa*	229 species of invertebrates are known to use this species. Good for nesting birds if grown as thicket or in hedge. Rich in insects. Fruit for birds. Black hairstreak butterfly lays its eggs mainly on blackthorn.
Buckthorn	*Rhamnus catharticus*	Berries for birds. Important food plant for brimstone butterfly larvae.
Cherry plum	*Prunus cerasifera*	Nectar and fruits for invertebrates. Fruits are eagerly consumed by birds and mammals.

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Common Name	*Scientific name*	Wildlife value
Elder	*Sambucus nigra*	Berries for birds and nectar for insects.
Guelder rose	*Viburnum opulus*	Nectar for insects, particularly hoverflies. Fruits for birds and small mammals, especially liked by woodmouse. Note: leaves, bark and berries are all poisonous.
Hawthorn	*Crataegus monogyna*	149 species of invertebrate are known to use this species. Berries eaten by birds. Nectar. Berries good food source for thrushes, redwings and fieldfares. Good nesting if dense. Excellent for moth larvae.
Hazel	*Corylus avellana*	73 species of insects/mites and 68 species of lepidoptera. Nuts eaten by birds and mammals i.e.
Privets	*Ligustrum spp.*	24 species of insects/mites, nectar for the butterflies. Berries eaten by birds.
Climbers/scramblers		
Brambles	*Rubus frutocosus agg.*	Nectar source for bees and butterflies. Berries for birds and mammals.
Dog Rose	*Rosa canina*	Provides nectar for bees and butterflies. Hips good for small birds and mammals.
Ivy	*Hedera helix*	Provides late nectar source and cover/hibernating sites for invertebrates. Food source for the Holly Blue butterfly larva.
Honeysuckle	*Lonicera periclymenum*	Excellent food source for invertebrates including the Speckled Wood butterfly. Berries eaten by
Wild clematis/ Old man's beard	*Clematis vitalba*	Provides nectar for bees and butterflies.
Plants to site under trees or in shady areas		
Bluebell	*Hyacinthoides non-scripta*	
Bugle	*Ajuga reptans*	
Daffodils	*Narcissus pseudonarcissus*	
Foxglove	*Digitalis purpurea*	
Lily of the valley	*Convallaria majalis*	
Lords-and-ladies	*Arum maculatum*	
Primrose	*Primula vulgaris*	
Sweet violet	*Viola odoratum*	
Wood avens	*Geum urbanum*	
Yellow archangel	*Lamastrum galeobdoton*	
Other shrubs for nectar, pollen or fruits		
Bodnant viburnum	*Viburnum x bodnantense*	Provides early nectar source for invertebrates and berries for birds. One of the most valuable winter
Californian lilac	*Ceanothus spp.*	Nectar for bees and butterflies.
Creeping cotoneaster	*Cotoneaster frigidus*	Berries good for birds and small mammals. Attracts waxwings and pheasants.

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Common Name	*Scientific name*	Wildlife value
Firethorn	*Pyracantha spp.*	Good for nesting thrushes and a site or an open robin box. Nectar for bees, berries for birds.
Himalayan honeysuckle	*Leycesteria formosa*	Provides nectar for bees and butterflies.
Japanese quince	*Chaenomeles japonica*	Berries for birds and mammals.
Lilac	*Syringa vulgaris*	Nectar for bees and butterflies.
Mahonia	*Mahonia spp.*	Nectar for bees and butterflies.
Mock orange	*Philadelphus spp.*	Nectar for bees and butterflies.
Serviceberry	*Amelanchier canadensis*	Provides nectar for bees and butterflies.
Wildflowers		
Agrimony	*Agrimonia eupatoria*	Provides nectar for bees and butterflies.
Chicory	*Chicorium intybus*	Provides nectar for bees and butterflies.
Chives	*Allium schoenoprasum*	Provides nectar for bees and butterflies.
Common mallow	*Malva sylvestris*	Provides nectar for bees and butterflies.
Common poppy	*Papaver rhoeas*	Provides nectar for bees and butterflies.
Corncockle	*Agrostemma githago*	Very good nectar source for bees and butterflies.
Corn marigold	*Chrysanthemum segetum*	Very good nectar source for bees and butterflies.
Cowslip	*Primula veris*	Very good nectar source for bees and butterflies.
Dame's violet	*Hesperis matronalis*	Very good nectar source for bees and butterflies.
Dandelion	*Taraxacum officinale*	Very good nectar source for bees and butterflies.
Devil's bit scabious	*Succisa pratensis*	Very good nectar source for bees and butterflies.
Field scabious	*Knautia arvensis*	Very good nectar source for bees and butterflies.
Foxglove	*Digitalis purpurea*	Very good nectar source for bees and butterflies.
Germander speedwell	*Veronica chamaedrys*	Very good nectar source for bees and butterflies.
Goldenrod	*Solidago virgaurea*	27 species of lepidoptera.
Great mullein	*Verbascum thapsus*	Very good nectar source for bees and butterflies.
Greater knapweed	*Centaurea scabiosa*	Very good nectar source for bees and butterflies.
Harebell	*Campanula rotundifolia*	Very good nectar source for bees and butterflies.
Herb-robert	*Geranium verum*	Very good nectar source for bees and butterflies.
Lady's bedstraw	*Galium verum*	Very good nectar source for bees and butterflies.
Marjoram	*Origanum vulgare*	Good plant for butterflies and bees
Meadow cranesbill	*Geranium pratense*	Very good nectar source for bees and butterflies.
Oxeye daisy	*Leucanthemum vulgare*	Very good nectar source for bees and butterflies.
Primrose	*Primula vulgaris*	Very good nectar source for bees and butterflies.
Red campion	*Silene dioica*	Very good nectar source for bees and butterflies.
Spiked speedwell	*Veronica spicata*	Very good nectar source for bees and butterflies.
Tansy	*Tanacetum vulgare*	Very good nectar source for bees and butterflies.

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Common Name	*Scientific name*	Wildlife value
Teasel	*Dipsacus fullonum*	A food source of the Brimstone butterfly. Attracts other insects for its nectar and birds for its seeds.
Toadflax	*Linaria vulgaris*	Very good nectar source for bees and butterflies.
White campion	*Silene alba*	Very good nectar source for bees and butterflies.
Wild thyme	*Thymus drucei*	Very good nectar source for bees and butterflies.
Yellow loosestrife	*Lysimachia vulgaris*	Provides nectar for bees and butterflies.

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