Phase One Badger and Breeding Bird Survey	
For:	MHH Contracting Ltd
Site	Green Lane Bridge Railway Cutting, Barnburgh, South Yorkshire
Date:	June 2017

Surveying Ecologists:
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Client:	MHH Contracting Ltd
Site Name:	Green Lane Bridge Railway Cutting, Barnburgh, South Yorkshire
Central grid Reference:	SE 47434 03603
Report:	Phase One Badger and Breeding Bird
Date of survey:	June 2017
Surveyed by:	Helen Norford & Natasha Estrada

Issue:	Revision:	Stage:	Date:	Prepared by:	Approved by:
1	-	Draft for review	24 June 2017	Helen Norford, Estrada Ecology Ltd	Natasha Estrada MCIEEM, Estrada Ecology Ltd
2	N/A	FINAL	28 June 2017	Jane Gruber, Estrada Ecology Ltd	Natasha Estrada MCIEEM, Estrada Ecology Ltd

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Summary

A 770m stretch of disused railway cutting at Barnburgh was surveyed, on three dates within June 2017, to gather evidence of badger and breeding birds, prior to approval of works involving removal of trees and vegetation and level (in fill) the site to facilitate engineering works at Grid Reference SE 47465 03711.

The site runs northwest to southeast, parallel to Barnburgh Lane.

A well-used public footpath runs through the centre of the site, with connecting paths from Green Lane.

Semi-mature and mature broadleaved trees, such as: common hawthorn; sycamore; self-set ash; areas of dense bramble species scrub; tall herbs, including white campion, hedge woundwort, and bracken run along the northern and southern boundary embankments. 1.5ha of Priority Habitat Inventory - Deciduous Woodland (England) make up the southwest section of the site.

No water bodies exist on the site. West Moor Dyke is the only water body connecting to the site, at the northernmost limit.

Land further to the north and south of the site is largely intensive agriculture fields, with a limited number of gappy hedge field boundaries. On the southern boundary, connecting to the site, are compartments of newly planted, broadleaved woodland, with semi-improved grassland to the south west.

850m to the southwest lies the RSPB reserve of Dearne Valley - Old Moor.

Findings

Flora invasive species

A single specimen of giant hogweed was recorded along the 770m length of surveyed area at SE 4744 0360. Giant hogweed, *Heracleum mantegazzianum* was recorded at one location. Protective clothing should be worn during removal and the plants should be disposed of as outlined herein.

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Badger

No field evidence of badger, *Meles meles* was located along the 770 metre stretch of cutting surveyed. The embankments contain quantities of stone, and stone faces considered sub-optimal badger. Therefore, no formal mitigation is required to facilitate works at the site, other than standard precautionary recommendations outline herein.

Breeding birds

Sixteen species of birds were observed during the survey. Evidence of breeding birds at the site included observation of: a fledgling whitethroat, *Sylvia communis;* long tailed tit, *Aegithalos caudatus;* and blue tit, *Cyanistes caeruleus*. No active nests were observed at the time.

The site offers breeding and foraging habitat for all the species recorded, and foraging opportunities for winter passage species.

Barn owl, *Tyto alba* was recorded roosting within the bridge crossing Green Lane, and proportionate mitigation in respect of the species is covered within a species-specific method statement.

Conclusions

Upon finalisation of plans, is it recommended that a method statement and landscaping plan is produced to compensate for habitat lost during the proposed works.

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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 MHH Contracting Ltd to conduct a phase 1 badger and breeding bird survey of the railway cutting at Green Lane Bridge, Barnburgh, South Yorkshire. The survey is required to facilitate engineering works and to fill-in a section of the cutting.

1.2 The survey site is located SE 47180 03853 to SE 47709 03319, along the former railway cutting, Barnburgh, Doncaster.

1.3 The survey was commissioned to gather information on species of breeding birds and badger activity, and to identify any potential constraints to works.

1.4 The survey encompasses land within the site boundary for badger and breeding bird.

2 Relevant Legislation and Approximate Policy

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.

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. Annex I lists habitats, and Annex II lists species, some of which the UK has responsibility to maintain in favourable 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

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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 Protection of Badgers Act 1992 as amended

Badgers and their setts (tunnels and chambers where they live) are protected by law under the Protection of Badgers Act 1992 (as amended).

It is an offence to: intentionally capture, kill or injure a badger; damage, destroy or block access to their setts; disturb badgers in setts; treat a badger cruelly; deliberately send or intentionally allow a dog into a sett; bait or dig for badgers; have or sell a badger, or offer a live badger for sale; have or possess a dead badger or parts of a badger (if you got it illegally); mark or attach a marking device to a badger

Activities that can harm badgers include: destroying or damaging their setts; noise, additional lighting or vibration; pile driving; quarry blasting; lighting fires; using chemicals; excavation; ploughing and harvesting crops; tree felling and timber extraction; construction or repair of flood defences or water courses

3 Survey and Site Assessment

3.1 Objectives of the survey

The report aims to:

- assess the site for use by breeding birds and badger and, if present, any impact the proposed works may have on those species;
- provide recommendations for mitigation / compensation measures to ensure impacts on species and habitats is minimised.

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3.2 Site description

The survey site is a former railway line, currently a well-used footpath and bridleway.

Semi-mature and mature broadleaved trees eg common hawthorn, sycamore and self-set ash, with areas of dense bramble species scrub; tall herbs, including white campion, hedge woundwort and bracken, run along the northern and southern boundary embankments. 1.5ha of Priority Habitat Inventory - Deciduous Woodland (England) makes up the southwest section of the site.

No water bodies exist on the site. West Moor Dyke is the only water body connecting to the site, at the northernmost limit.

Land further to the north and south of the site is largely intensive agriculture fields, with a limited number of gappy hedge field boundaries. On the southern boundary, connecting to the site, are compartments of newly-planted, broadleaved woodland, with semi-improved grassland to the south west.

850 metres to the southwest lies the RSPB reserve of Dearne Valley - Old Moor.

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Figure 1: Site area marked with red key line



Google maps

4 Survey Methodology

4.1 Field Survey

4.2 The survey area was investigated on foot to ascertain any evidence of breeding bird activity. A visual inspection for signs of nests was conducted, along with a survey at distance for any evidence of parent birds attempting to make nests, mating or territorial calls, and the presence of juveniles. Where applicable, avian species using the site were recorded from sight and / or sound.

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A phase one badger survey was conducted by ecologist Natasha Estrada BSc(Hons), MRes, MCIEEM; suitably experienced in such surveys, having been the named ecologist on a number of badger mitigation licences, and Helen Norford. The survey entailed searching the cutting, banks, and land immediately outside the boundary, for signs of use by badger. These include: setts; badger paths; latrines (faecal deposits); snuffle holes; scratching posts; and discarded guard hairs.

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

Taxon	Indicative habitats	Field signs
Birds	Trees, scrub, hedgerow, field margins, grassland.	Nests; droppings below nest sites (especially in buildings of trees); tree holes. Visual sightings, calls.
Badger	Found in most rural and many urban habitats.	Excavations and tracks: sett entrances, latrines, hairs, well-worn paths; prints; snuffle holes.

4.4 Timing

The surveys were conducted on 3, 13 and 21 June 2017.

4.5 Weather conditions

The surveys were carried out in suitable weather conditions, as outlined by Natural England guidelines; sunny with temperatures averaging 16°C and no rain.

4.6 Personnel

The surveys were carried out by ecologist Helen Norford of Estrada Ecology Ltd, an experienced ecologist and qualifying member of CIEEM, with over five years' experience within ecological consultancy and the conservation sector, and the holder of Natural England bat and great crested newt survey licences; and Natasha Estrada BSc(Hons), MRes, MCIEEM, an ecologist with over twelve years' experience, and the holder of numerous protected species' licences, being the named ecologist on a number of EPS mitigation licences.

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5 Ecological Constraints

5.1 The surveys were instructed on 2 June 2017; within the latter part of the optimal survey period for breeding birds, and does not include breeding bird behaviour, which can be observed during the early part of the breeding bird season. Trees and shrubs were heavily vegetated, and nests proved difficult to locate.

5.2 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.

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

5.4 The survey was undertaken during an optimal weather conditions.

5.5 No playback survey was commissioned, due to the surveys being instructed within early June 2017.

6 Survey Results

6.1 Desk top survey results

South Yorkshire Badger Group was contacted for badger records for the survey area, plus 1 kilometre radius. The record search request returned negative for records for the site or a 1km radius.

A total of 449 records were returned for birds from DMBC and SBRC as outlined within the Phase 1 habitat survey report (Skyline Ecology, no date). It is noted that a large number of records are associated with wetlands and, as such, species are unlikely to be present on the site due to the lack of suitable habitat. Furthermore, farmland birds recorded within the search area are limited to use of the site due to lack of suitable habitat within the cutting.

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6.2 Protected species:

6.2.1 Badger

No field evidence of badger: latrines; snuffle holes; paths; dicarded hairs; scractching posts; or setts were recorded on site during the survey.

The site does provide foraging habitat for badger, though public access to the site may well provide a disturbance factor. Undisturbed foraging grounds, and potential areas for sett locations can be found on the southwest boundary of the site, within woodland and grassland, and within agricultual land to the north west and east which connect to the site.

6.2.2 Birds

Optimum habitat exists for breeding birds within semi-mature trees and scrub located on the northern and southern site boundary.

Sixteen species were observed on the site during the survey and include: wood pigeon, *Columba palumbus;* magpie, *Pica pica;* long-tailed tit; blue tit; robin, *Erithacus rubecula;* chaffinch, *Fringilla coelebs;* great tit, *Parus major;* dunnock, *Prunella modularis;* wren, *Troglodytes troglodytes;* collard dove, *Streptopella decaocto;* blackbird, *Turdus merula;* yellowhammer, *Emberiza citrinella* (red listed); chiffchaff, *Phylloscopus collybita;* blackcap, *Sylvia atricapilla;* common whitethroat, *Sylvia communis;* and bullfinch, *Pyrrhula pyrrhula* (amber listed), were recorded as present, suitable nesting habitat, in the form of trees and scrub, is present on site during the survey period.

Evidence of breeding (fledglings) of common whitethroat (amber listed), long-tailed tit and blue tit were recorded at the time of survey.

The site was surveyed for its suitability to provide conditions for willow tit, *Poecile montanus.*

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6.2.3 Known habitat suitability for willow tit

- Permanent damp soil conditions
- Significant amounts of standing dead-wood
- Well-developed shrub layer. Key species for nesting are birch, willow and elder
- Overall, habitat can be large areas of damp low-lying woodland, edges of mature woodlands and conifer plantations, former industrial sites / spoil heaps, and the edges of waterways and pools / lakes, ditches and streams

Habitat that is not suitable includes:

- Mature, broadleaved woodland, especially sycamore and beech dominated
- The middle of dense conifer plantations, especially spruce where there is little other vegetation growth
- Woodland with no standing deadwood
- Woodland with very dry conditions
- Woodland with no shrub layer.

Groom, J. BTO 2016

The site was recorded as having low suitability for breeding willow tit, containing virtually no damp conditions and less than 0.5% standing dead wood. Species on site were recorded as being immature and semi-mature in age. Examples of willow and elder, favoured by willow tit, were recorded as young in age, with no suitability for use by the species and no suitable excavations recorded throughout the survey period.

The site provides limited opportunities for ground nesting birds, or feeding opportunities for wintering waders and wildfowl due to the restricted amount grassland available, and elevated disturbance levels through frequent dog walkers, horse riders and recreational cyclists.

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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6.2.4 Invasive species

A single specimen of giant hogweed was recorded at SE 4744 0360. Exposure to even minute amounts of sap from the plant can cause extreme blistering following exposure to sunlight. In certain cases, third degree burns and blindness have been reported.

The plants should be removed wearing suitable protective equipment. Shallow excavation, to about 20 centimetres, will remove the tap root and kill the plant. This can be done with an axe or sharp spade. Spoil should be disposed of at landfill, or by piling on site and composting. Any regrowth should be treated chemically. It is advised that, to prevent new growth, the seed bank and soil is removed to a depth of 0.5 metres.

Giant hogweed is listed under Schedule 9 to the Wildlife and Countryside Act 1981 with respect to England, Wales and Scotland. As such, it is an offence to plant, or otherwise cause this species to grow in the wild. Under the Environmental Protection Act 1990, giant hogweed is also classified as controlled waste.

If hogweed and associated material eg soil, becomes controlled waste and is removed from site, it must be disposed of at a landfill site that is authorised to accept it. Giant hogweed waste that is disposed of at a landfill site must be accompanied by appropriate waste transfer documentation.

If feasible to retain the plant debris on site, then it can be stockpiled on an area of the site which is cordoned off. Particular care must be taken not to inadvertently spread material on, or off site. Any signs of regrowth should be treated chemically.

7 Conclusions

7.1 Assessment of significance of impact on protected fauna

7.1.1 Badger

No field sign evidence to suggest use by badger of the site was recorded. No paths, sett entrances, latrines and or snuffle holes were observed during the walkover site survey.

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Therefore, it is deemed that no further surveys are necessary for the species.

7.1.4 Birds

Evidence of breeding birds: common whitethroat (amber listed); blue tit; and long-tailed tit was recorded on site during surveys on the 13 and 21 June 2017.

Scrub and trees on site have the potential to support breeding habitat for all sixteen species (one red listed and two amber listed species) of birds recorded at the site during the site surveys.

The potential for breeding ground nesting birds is limited by the lack of available habitat and elevated disturbance levels.

Furthermore, the site was recorded as having low suitability to support breeding willow tit, when assessed by two suitably qualified ecologists. The young nature of the vegetation, lack of standing dead wood, and dry conditions are all deemed to provide unsuitable conditions.

8 Recommendations

8.1 Recommendations for birds: As a precautionary measure, works, including clearance and tree works, should be undertaken outside the breeding bird season (typically March - September inclusive, with the peak season being March to June inclusive). If this is not possible, a walkover survey should be undertaken 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, via the establishment of suitable buffer zones and ecological watching brief whilst site clearance works are undertaken.

8.2 Recommendations for flora: No notable plant species were recorded during the preliminary ecological assessment. 1.5ha of Priority Habitat Inventory - Deciduous Woodland (England) makes up the southwest section of the site.

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Where possible, any boundary trees / scrub should be retained to provide suitable nesting habitat for breeding birds and commuting lines for bats.

Removal of giant hogweed should be undertaken prior to works as specified herein.

Upon the finalisation of plans a method statement and post works landscaping plan should be prepared by a suitably qualified ecologist containing proposals for the reversal of habitat loss due to proposed works, to include mitigation and compensation information.

8.3 **Recommendations for badger:** No positive field signs for badger: snuffle holes; badger paths; guard hair; sett entrances; or latrines were recorded during the survey in June 2017, therefore no formal mitigation is required for this species. Due to the transient nature of badger should badgers, or field sign evidence to suggest the presence of badgers be encountered then all works should cease and a suitably qualified ecologist consulted.

9 Enhancement

9.1 The site would benefit from a planting and landscaping scheme, which includes native broadleaved tree and wildflower species, to increase invertebrate species, enhance the attractiveness of the site for birds, bats and other fauna and to compensate for habitat loss during the proposed works. Recommendations are outlined within Appendix Two.

9.2 Barn owl and bat boxes are proposed to be erected on site, in appropriate locations, as outlined within the mitigation method statements for the species.

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Appendix One: Survey site species list

Taxon	**Vernacular**
Flora	
Acer pseudoplatanus	Sycamore
Agrostis stolonifera	Creeping bent
Alliaria petiolata	Jack by the hedge (Garlic mustard)
Anthriscus sylvestris	Cow parsley
Arrhenatherum elatius	False oat grass
Artemisia vulgaris	Mugwort
Bellis perennis	Daisy
Betula spp.	Birch
Bromus hordaceus	Soft brome
Bromus sterilis	Barren brome
Capsella bursa-pastoris	Shepherd's purse
Cardmine hirsuta	Hairy bitter cress
Centaurea nigra	Common knapweed
Cerastium fontanum	Common mouse-ear
Chamerion angustifolium	Rosebay willowherb
Cirsium arvense	Creeping thistle
Cirsium vulgare	Spear thistle
Conium maculatum	Hemlock
Convolvulus arvensis	Bindweed
Crataegus monogyna	Common hawthorn
Dactylis glomerata	Cock's-foot
Digitalis purpurea	Foxglove
Dipsacus fullonum	Common teasel
Epilobium hirsutum	Greater willowherb
Epilobium montanum	Broad leaved willowherb
Equisetum arvense	Field horsetail
Festuca rubra	Red fescue
Fraxinius excelsior	Ash
Galium aparine	Cleavers
Geranium pratense	Meadow crane's-bill
Geranium robertianum	Herb Robert
Geum urbanum	Wood avens
Glecoma hederacea	Ground ivy
Hedera helix	Ivy
Heracleum mantegazzianum	**Giant hogweed**
Heracleum sphondylium	Hogweed
Holcus lanatus	Yorkshire fog
Lamium purpureum	Red dead-nettle
Leucanthemum vulgare	Oxeye daisy
Linaria vulgaris	Common toadflax
Lolium perenne	Perennial rye grass
Lonicera periclymenum	Honeysuckle
Matricaria discoidea	Pineapple weed

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Medicago lupulina	Black medick
Phleum pratense	Timothy
Plantago lanceolata	Ribwort plantain
Plantago major	Broad-leaved plantain
Poa annua	Annual meadow grass
Poa trivialis	Rough meadow grass
Pteridium agg.	Bracken
Quercus robur	Penduculate oak
Ranunculus repens	Creeping buttercup
Rosa spp.	Rose
Rubus fruticosus agg.	Bramble
Rumex obtusifolius	Broad-leaved dock
Salix spp.	Willow spp.
Sambucus nigra	Elder
Senecio jacobe	Common ragwort
Senecio vulgaris	Groundsel
Silene latifolia	White campion
Sisymbrium officinale	Hedge mustard
Solanum dulcamara	Bittersweet
Sonchus arvensis	Perennial sow-thistle
Fauna	
Taxon	**Vernacular**
Aegithalos caudatus	Long-tailed tit
Columba palumbus	Wood pigeon
Cyanistes caeruleus	Blue tit
Emberiza citrinella	Yellowhammer
Erithacus rubecula	Robin
Fringilla coelebs	Chaffinch
Parus major	Great tit
Phylloscopus collybita	Chiffchaff
Pica pica	Magpie
Prunella modularis	Dunnock
Pyrrhula pyrrhula	Bullfinch
Streptopelia decaocto	Collard dove
Sylvia atricapilla	Blackcap
Sylvia communis	Common whitethroat
Troglodytes troglodytes	Wren
Turdus merula	Blackbird
Tyto alba	Barn owl
Oryctolagus cuniculus	Rabbit
Pararge aegeria	Speckled wood

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Appendix Two: Wildlife-friendly plantings which could be incorporated within a landscaping plan.

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 mammals including wood mice and Jays.
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 siskins.
Apples	*Malus spp.*	118 species of insects/mites and 76 species of lepidoptera. Fruits are eagerly consumed by birds and mammals.
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 feed on the leaves. Holly leaf miner provides winter food for birds
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 redwings and field-fares.
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.

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Common Name	*Scientific name*	Wildlife value
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.
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. squirrels, mice and jays.
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 birds.
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 flowering shrubs.
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.
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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Appendix Three: Example of well-used desire line connecting the footpath running through the centre of the site



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Appendix Four: Example of tall herbs along northern embankment of site



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Appendix Five: Single specimen of giant hogweed on site



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Appendix Six: Example of "gappy" hedge, to the north of the site



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Appendix Seven: Example of rocky outcrop on southern embankment



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Appendix Eight: Example of semi-improved grassland that adjoins the site to the southeast.



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References

Groom, J (2016). Shropshire Willow Tit Survey. BTO

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