

4.3.3 Significance of Residual Effects

Following the implementation of the proposed mitigation measures, no significant residual effects are predicted upon breeding birds.

4.4 Bats

4.4.1 Potential Impacts

The proposals would result in the loss of one tree with low bat roosting potential (T1). Removal of this tree has the potential to cause damage/ destruction of bat roosts or killing/ injury to bats, if present.

The proposals would also result in the loss of scrub, hedgerow and field margin habitat used by at least four species of foraging/ commuting bat. The proposals also have the potential to cause light disturbance to bats utilising the retained and surrounding habitats, such as the woodland to the north of the Site.

4.4.2 Proposed Mitigation Measures

Tree T1 would be felled using a sensitive felling protocol under the direction of an ecologist, in accordance with BCT guidelines²³. The protocol would involve avoiding severing through any PRFs, but lowering the sections of the tree with the intact PRFs to the ground, and leaving on the ground for at least 24 hours. Alternatively, the tree will be subject to a dusk emergence or dawn re-entry bat detector survey immediately prior to its removal, as a precaution.

Lost scrub/ hedgerow foraging/ commuting habitat would be replaced via compensatory hedgerow, tree and scrub planting, as detailed in Section 4.2.2. The compensatory planting is connected as far as possible (rather than forming isolated pockets of habitat) and would therefore provide alternative linear corridors for foraging and commuting bats as they mature. The SuDS basin will be seeded with a pond edge wildflower seed mix, and will also, most likely, provide suitable bat foraging habitat. Gardens are also likely to provide some productive foraging habitat for bats, once they mature.

Development has been set back from the wooded northern boundary, such that potential bat commuting and foraging corridor remains undisturbed, and is not subject to excessive light spill.

10% of the properties shall also contain in-cavity bat roosts, and five bat boxes shall be erected on mature trees, such as those located in the north-eastern corner of the Site, thereby significantly increasing the potential bat roosting resource.

4.4.3 Significance of Residual Effects

With the above measures in place, no significant residual impact upon bats is predicted, and no contravention of wildlife legislation is anticipated. Indeed the potential of the Site to support roosting bats will significantly increase.

4.5 Badger

4.5.1 Potential Impacts

In the absence of mitigation, the construction phase has the potential to cause damage or destruction of any new setts that may be dug in the interim between the baseline surveys being carried out and the start of construction. There is also the potential of killing/ injury or disturbance to badgers occupying any such new sett, and injuring/ trapping of badgers during construction, for example by becoming trapped in excavations.

²³ Collins (2016) Collins, J. (2016) *Bat Surveys for Professional Ecologists. Good Practice Guidelines. Third edition*. Bat Conservation Trust, London.

4.5.2 Proposed Mitigation Measures

A pre-construction badger survey would be undertaken within three months of the commencement of construction, to check for any new setts or badger activity. If a new sett is identified, works within 30m of the sett would be avoided. If this is not possible, a sett closure or disturbance licence would be obtained from Natural England if required.

If the pre-construction survey records any fresh field evidence of badger (for example dung pits, foraging signs or pathways), but no setts are present, the following good practice measures would be followed during construction to reduce the risk of inadvertently injuring/ trapping a badger:

- Open excavations/ trenches would be covered over at night if possible. If this is not possible, sloping escape ramps shall be created for badgers at all excavations deeper than 30cm which are left open overnight. This will be achieved either by edge profiling of trenches/ excavations or by using planks placed into excavations at the end of each working day to provide a means of escape;
- Open pipework greater than 150mm diameter shall be blanked off at the end of each working day; and
- Materials and chemicals shall be stored safely, to avoid the risk of badgers coming into contact with chemicals.

4.5.3 Significance of Residual Effects

No significant residual impact upon badger is predicted, and no contravention of wildlife legislation is anticipated.

4.6 Hedgehog

4.6.1 Potential Impacts

The proposals would result in some habitat loss for hedgehog. The erection of impermeable garden fences would result in fragmentation and preventing the free movement of hedgehog across the Site.

4.6.2 Proposed Mitigation Measures

The creation of replacement hedgerow, tree and scrub habitat will provide some alternative habitat for hedgehog as it matures, as well as the newly created residential gardens.

'Hedgehog highways' shall be installed in any new permeable garden fencing, comprising 15 x 15cm gaps at the base of fencing, to allow unimpeded movement of hedgehog across the Site and between gardens.

4.6.3 Significance of Residual Effects

Following the implementation of the proposed mitigation measures, no significant negative impact upon hedgehog is anticipated.

4.7 Schedule 9 Invasive Species

4.7.1 Potential Impacts

In the absence of mitigation, the construction works have the potential to spread Japanese knotweed (a Schedule 9 invasive species) into the wild, via contaminated soils or plant fragments. Schedule 9 states: *"if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence."*

4.7.2 Proposed Mitigation Measures

The stand of Japanese knotweed (TN 10) requires treatment/ removal by a specialist contractor, to avoid spreading the plant.

Invasive species can change their distribution quickly, therefore as a precaution, a pre-construction check for invasive species shall be undertaken by the ECoW within the growing season (April – September) prior to construction, and any new stands identified would also be eradicated by a specialist contractor.

4.7.3 Significance of Residual Effects

With the above measures in place, no significant residual effect is predicted and no contravention of wildlife legislation is anticipated.

4.8 Cumulative Effects

No nearby planning applications were identified which are likely to result in significant cumulative effects. As such, no significant cumulative effects are predicted.

4.9 Biodiversity Enhancements

The following enhancement measures are proposed, over and above the mitigation measures:

- Bird and bat boxes shall be integrated into 10% of the new residential properties or garages, using designs that integrate into the fabric of the building where possible for better longevity. Boxes shall also be installed on retained mature trees. Integrated bird boxes shall be targeted towards species of conservation concern that are likely to uptake boxes. Specifically, boxes for swift (*Apus apus*)²⁴, house sparrow (*Passer domesticus*)²⁵ and starling (*Sturnus vulgaris*)²⁶ would be included. Bat boxes would be suitable for a range of locally occurring bat species including common pipistrelle²⁷;
- In addition to the compensatory hedgerow, tree and scrub planting as described in Sections 4.1-4.6, wildflower grassland would be created within the Public Open Space at the eastern end of the Site, using a suitable species-rich mix such as Emorsgate EM2²⁸; and
- The large SuDS attenuation basin to be created in the northern part of the Site would be designed and managed to maximise its biodiversity value, by seeding it with a pond edge mix such as Emorsgate EP1²⁹;
- Habitat piles would be created in the woodland and scrub habitat at the eastern end of the Site, using logs and brash, to provide refugia habitat for invertebrates, small mammals (such as hedgehog) and herpetofauna.

4.10 Summary of Effects

A summary of potential impacts, proposed mitigation, and residual effects is provided for each important ecological feature included in the assessment in Table 4-1. Table 4-1 also includes a summary of proposed biodiversity enhancements.

²⁴ Such as No. 16 Schwegler swift box available at: <https://www.nhbs.com/>

²⁵ Such as 1SP Schwegler sparrow terrace available at: <https://www.nhbs.com/>

²⁶ Such as starling box #197678 available at: <https://www.nhbs.com/>

²⁷ Such as Habitat bat box available at: <https://www.nhbs.com/>

²⁸ <https://wildseed.co.uk/mixtures/category/general-purpose-meadow-mixtures>

²⁹ <https://wildseed.co.uk/mixtures/view/13>

Table 4-1: Summary of potential impacts, proposed mitigation, residual effects and proposed enhancements

Ecological Feature	Potential Impacts	Proposed Mitigation	Residual Effects
Non-designated site habitats: hedgerow (priority), mixed scrub and broad-leaved woodland	Small-scale habitat loss (hedgerow and mixed scrub). Damage to roots of retained vegetation.	Protective fencing around RPAs during construction. Replacement planting of hedgerows, trees and mixed scrub, using a species-rich mix of native species.	Not significant.
Breeding birds	Damage/ destruction of active nests during vegetation clearance/ commencement of construction. Habitat loss of foraging and nesting habitat.	Avoid vegetation clearance in March – August nesting bird season, or undertake nesting bird check prior to clearance. Replacement planting of hedgerow, scrub and tree habitat, and provision of nest boxes.	Not significant, no contravention of wildlife legislation.
Bats	Possible destruction of roost and injury/ killing of bat in roost if present, during felling (Tree T1). Loss of foraging/ commuting habitat. Light disturbance upon retained/ adjacent habitats.	Sensitive felling of Tree T1, or pre-felling dusk emergence/ dawn re-entry bat detector survey.. Creation of replacement hedgerow, tree and scrub foraging/ commuting habitat. Development set well back from wooded northern Site boundary.	Not significant, no contravention of wildlife legislation.
Badger	Damage/ destruction of sett and disturbance /injury of badgers in a sett if a new sett is dug. Killing/ injury during construction.	Pre-construction survey. Precautionary working measures during construction if new badger activity identified in pre-construction survey.	Not significant, no contravention of wildlife legislation.
Hedgehog	Loss of habitat. Blocking of free movement across the Site by impermeable garden fences.	Replacement hedgerow, tree and scrub planting. Provision of 'hedgehog highways' in any impermeable garden fencing, by creating 15cm x 15cm gaps at the base.	Not significant.

Ecological Feature	Potential Impacts	Proposed Mitigation	Residual Effects
Invasive flora	Inadvertent spread of Japanese knotweed.	Treatment of Japanese knotweed. Pre-construction survey.	Not significant, no contravention of wildlife legislation.
-	Incorporation of the following biodiversity enhancements: • bird and bat boxes; • creation of wildflower meadows; • creation of wetland features/ ponds in SuDS basins; • Creation of habitat piles; and • Enhancement of retained woodland.	-	Positive effect at Local Level

DRAWINGS

Drawing 1: UKHab Habitat Plan

Drawing 2: Location of Pond Subject to Great Crested Newt eDNA
Survey

Drawing 3: Locations of Reptile Refuges

Drawing 4: Bat Activity Transect Route and Static Detector Sample
Locations

Drawing 5: Results of Bat Activity Transect Survey

Drawing 6: Results of Static Bat Detector Survey



LEGEND

- Site Boundary
- Pond Subject to Great Crested Newt eDNA survey

4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

LOCKWOOD ROAD, GOLDTHORPE

ECOLOGICAL IMPACT ASSESSMENT

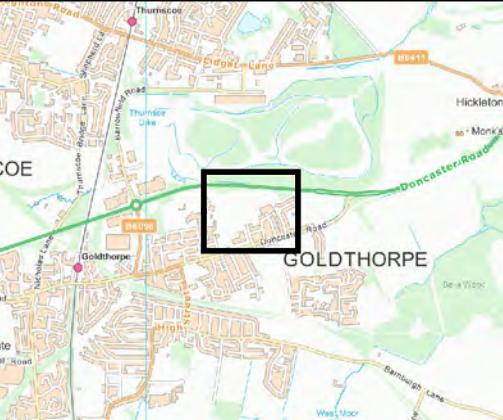
LOCATION OF POND SUBJECT TO GREAT CRESTED NEWT EDNA SURVEY

2

Scale 1:2,000 @ A3 Date APRIL 2021

03044.00188.0002.0 Drawing 2 - Location of Pond Subject to GCN eDNA Survey



NOTE	
NO REPTILES RECORDED	
LEGEND	
	Site Boundary
	Artificial Refuge
	
	
	4/5 LOCHSIDE VIEW EDINBURGH PARK EDINBURGH EH12 9DH T: +44 (0)131 335 6830 www.slrconsulting.com
LOCKWOOD ROAD, GOLDTHORPE	
ECOLOGICAL IMPACT ASSESSMENT	
LOCATIONS OF REPTILE REFUGES	
3	
Scale 1:1,500 @ A3	Date APRIL 2021

03044.00188.0003.0 Drawing 3 - Locations of Reptile Refuges

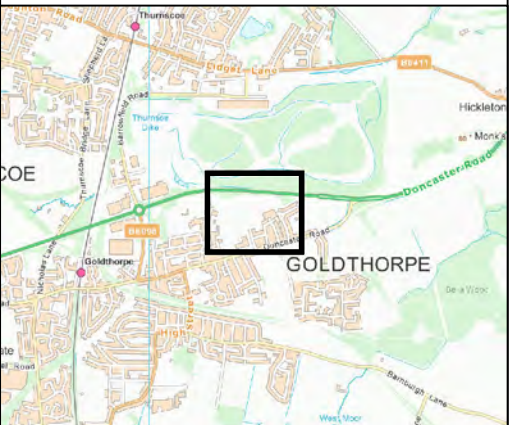


LEGEND

Site Boundary

Walked Activity Transect Route

④



homes by

gleeson

SLR

4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

LOCKWOOD ROAD, GOLDTHORPE

ECOLOGICAL IMPACT ASSESSMENT

BAT ACTIVITY TRANSECT ROUTE AND
STATIC DETECTOR SAMPLE LOCATIONS

4

Scale 1:1,500 @ A3

Date APRIL 2021

03044.00188.0004.0 Drawing 4 - Bat Activity Transect Route and Static Detector Sample Locations



LEGEND

Site Boundary

Walked Activity Transect

④

Bat Point Count Location

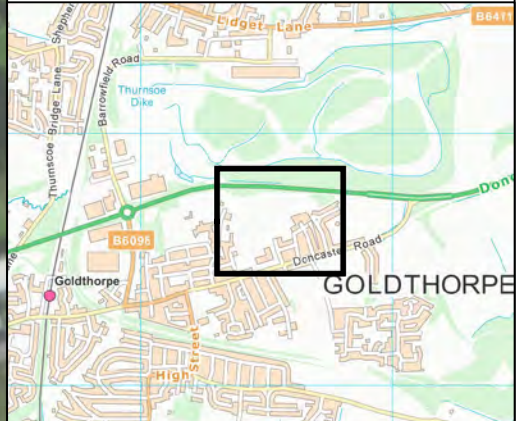
3

1.5

0

Number of Bat Passes Per Five Minute Point Count

Common Pipistrelle



homes by

gleeson

SLR

4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

LOCKWOOD ROAD, GOLDTHORPE
ECOLOGICAL IMPACT ASSESSMENT
RESULTS OF BAT ACTIVITY
TRANSECT SURVEY

5

Scale 1:1,500 @ A3

Date APRIL 2021

03044.00188.0005.0 Drawing 5 - Results of Bat Activity Transect Survey



LEGEND

Site Boundary

Static Bat Detector Sample Location

Mean Number of Bat Passes Per Hour

0.3
0.1
0

Common Pipistrelle

Soprano Pipistrelle

Noctule/Leisler's

Noctule

Myotis sp.

homes by gleeson

SLR

4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH

T: +44 (0)131 335 6830
www.slrconsulting.com

LOCKWOOD ROAD, GOLDTHORPE

ECOLOGICAL IMPACT ASSESSMENT

**RESULTS OF STATIC BAT
DETECTOR SURVEY**

6

Scale 1:1,500 @ A3

Date APRIL 2021

APPENDIX 1

Proposed Site Layout



- LEGEND
- 1m BY THREE FENCE
 - POST & RAIL FENCE
 - DRIVE DETAIL
 - PROPOSED TREES

SITE DATA
GROSS AREA: 51.12ha
NET AREA: 33.66ha
HOUSING DENSITY: 6815 DWT PER ACRE

STATION
51.12ha
33.66ha
6815 DWT PER ACRE



TOTAL APPROX. GROSS SITE AREA: 12.64acres / 51.12ha
TOTAL APPROX. NET SITE AREA: 10.06acres / 4.07ha
NET DENSITY: 33.66 dwellings per hectare

Schedule of Accommodation

To be read in conjunction with drawing no. 3228-1-001-L

Ref.	No. of Beds	Type	No. of Units	Percentage	Sq. Ft.	Total Sq. Ft.
201	2 Bedrooms	Semi-detached	12	8.76	651.00	7812.00
202	2 Bedrooms	Semi-detached	4	2.92	671.00	2684.00
212	2 Bedrooms	Semi-detached	5	3.65	671.00	3355.00
301	3 Bedrooms	Semi-detached	13	9.49	759.00	9867.00
303	3 Bedrooms	Semi-detached	11	8.03	772.00	8492.00
304	3 Bedrooms	Detached	21	15.33	772.00	16212.00
307	3 Bedrooms	Detached	16	11.68	807.00	12912.00
310	3 Bedrooms	Detached	6	4.38	788.00	4728.00
311	3 Bedrooms	Semi-detached	11	8.03	759.00	8349.00
313	3 Bedrooms	Semi-detached	3	2.19	811.00	2433.00
314	3 Bedrooms	Detached	8	5.84	811.00	6488.00
401	4 Bedrooms	Detached	15	10.95	1066.00	15990.00
403	4 Bedrooms	Detached	4	2.92	1048.00	4192.00
405	4 Bedrooms	Detached	8	5.84	1172.00	9376.00
Totals				100.00		112890.00

subject to structural review
subject to accurate measured survey

revision	date	content	author
F	03.08.21	SCALE BAR ADDED TO DRAWING.	SN
E	23.07.21	AMENDMENTS MADE IN LINE WITH CLIENT COMMENTS.	SN
D	02.07.21	ROAD IN FRONT OF PLOTS 25-27 REVISED. SUBSTATION POSITION ADJUSTED.	ED
C	09.06.21	LAYOUT REVISED IN LINE WITH CLIENTS COMMENTS.	ED
project			
PROPOSED RESIDENTIAL LOCKWOOD ROAD GOLDTHORPE			
client			
GLEESON DEVELOPMENTS			
title			
PROPOSED SITE LAYOUT			
date	02.03.21	11:500@A0	down
author	SN		
drawing number	3228-1-001	F	checked

niemen
architects

niemen Architects
Deck 2, The Waterscape
42 Leeds & Bradford Road
Kirkstall, Leeds LS5 3EG
Tel: 0113 259 5400
Fax: 0113 259 5401
office@niemen.co.uk
www.niemen.co.uk

Relevant Legislation and National Planning Policy

Relevant Legislation³⁰

Conservation of Habitats and Species Regulations 2017³¹

The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb³² wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Wildlife & Countryside Act 1981³³

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CROW) 2000³⁴ and the Natural Environment and Rural Communities Act (NERC) 2006³⁵, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive)³⁶, making it an offence to:

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

Protection of Badgers Act 1992³⁷

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly

³⁰ Please note that the summary of relevant legislation provided here is intended for general guidance only. The original legislation should be consulted for definitive information.

³¹ <http://www.legislation.gov.uk/ukxi/2017/1012/contents/made>

³² Disturbance, as defined by the Conservation of Habitats and Species Regulations 2017, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

³³ www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

³⁴ www.legislation.hms.gov.uk/acts/acts2000/20000037

³⁵ http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

³⁶ eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en

³⁷ http://www.opsi.gov.uk/ACTS/acts1992/ukpga_19920051_en_1

interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

Natural Environment & Rural Communities (NERC) Act 2006³⁸

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

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

Relevant National Planning Policy

National Planning Policy Framework

The National Planning Policy Framework (NPPF, 2021)³⁹ sets out guidance for local planning authorities and decision-makers on how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05⁴⁰, the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out.

Paragraph 174 d of the NPPF states that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by:

- *Minimising impacts on, and providing net gains for, biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.”*

Furthermore, Paragraph 175 states that plans should:

“.....take a strategic approach to minimising and enhancing networks of habitats and green infrastructure, and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries”.

Paragraph 179 states that:

“To protect and enhance biodiversity and geodiversity, plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
- b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”*

Paragraph 180 goes on to state:

³⁸ http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

³⁹ Department for Communities and Local Government (July 2021) *National Planning Policy Framework*.

⁴⁰ Office of the Deputy Prime Minister. 2005. Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System. ODPM Circular 06/2005.

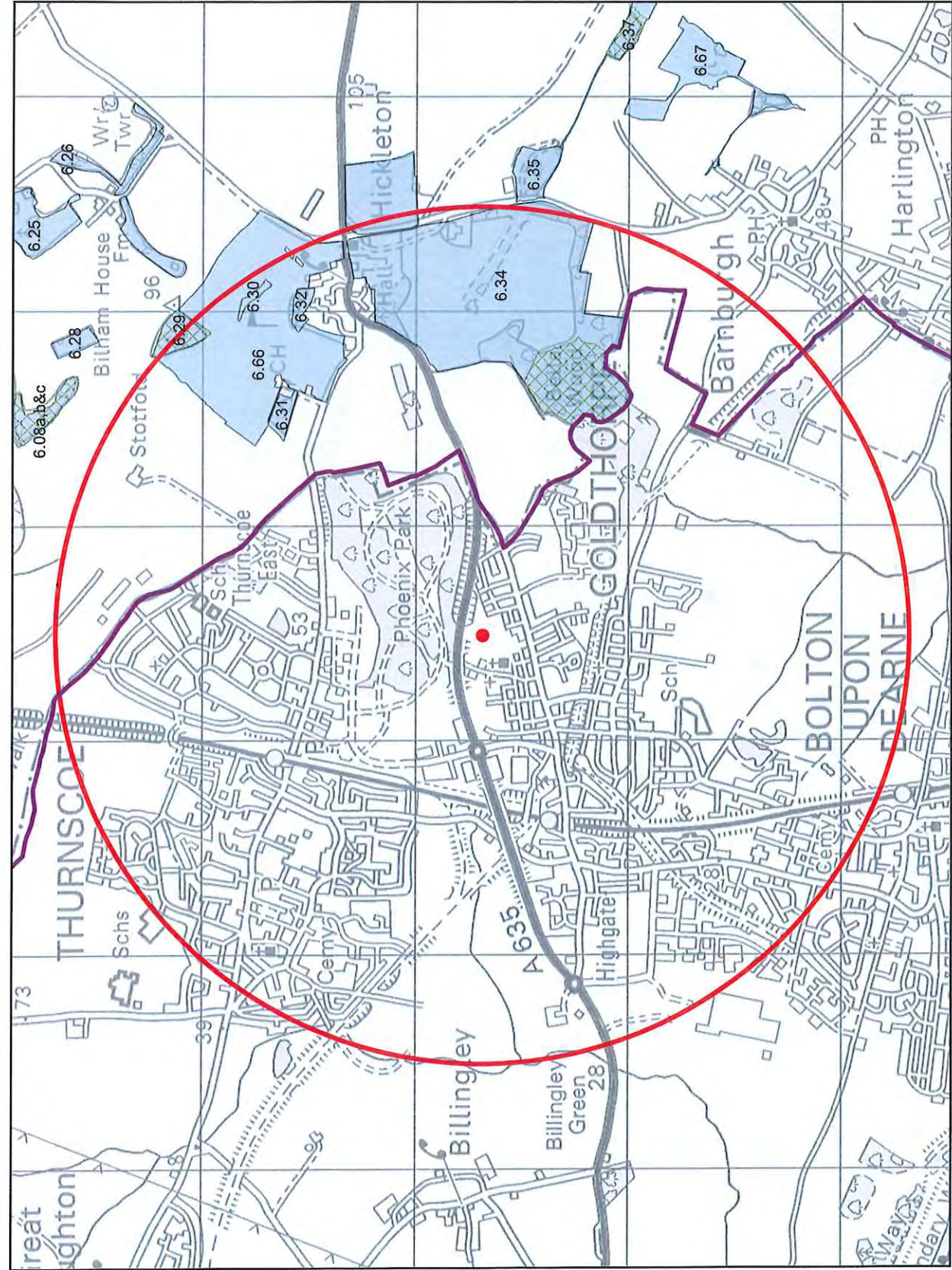
“When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”*

APPENDIX 3

Local Wildlife Site Locations and Citations

Appendix 2. Distribution of designated sites within the search area



Legend - Centroid - Ancient Woodland - Local Wildlife Site	DMBC boundary	Search area boundary
Client: SLR Consulting	Client Ref: Lockwood Rd, Goldthorpe	
LRC ref: 00858	Scope of search: 2km buffer on centroid SE4649104685	

(c) Crown copyright. License Number 100019782. 2016	Completed by: Bob Marsh	Map Reference: Doncaster Local Records Centre	Date produced: 13/11/2020	Scale: 1:26,844	N
(c) Copyright GeoInformation Group 1997, 2002, 2005 and 2007					

Appendix 3. Local Site(s) Citation

Site Status	Local Wildlife Site		
Site Code	6.29	Grid Reference	SE 478061
Site Name	Hickleton Spring		
Site Owner	Private	Access	There is no presumption about Site Access
Site Area (ha)	3.13	Natural Area	Coal Measures
Geology	Carboniferous Mudstone		
Soil Type	Permeable loam		
Aspect		Exposed Strata	No
Audit Species Recorded (within 1km grid square)			
Habitats Recorded	PBW (Broad-leaved Plantation Woodland) / PMW (Mixed Plantation Woodland) / H- (Hedges Defunct)		
NVC Affiliation	W10		
Criteria for LS Designation	WD2 / WD3 / WD4 / WD5 / SM1		
Other Designations (on site or adjoining)			
Informative (on site or in locality)	Broad-Leaved Dock (Rumex obtusifolius)		
Boundaries (Link to interactive map if available)	URL		
Site Description at last visit			
Date of visit - 21/04/2016		21/04/2016	
This triangular woodland is predominantly a deciduous sycamore (<i>Acer pseudoplatanus</i>) and beech (<i>Fagus sylvatica</i>) plantation, with localised areas of conifers forming a fairly even aged canopy 10-15m high. These planted species are associated with subsidiary and occasional pedunculate oak (<i>Quercus robur</i>), wych elm (<i>Ulmus glabra</i>), ash (<i>Fraxinus excelsior</i>) and, rarely, horse chestnut (<i>Aesculus hippocastanum</i>). There is some regeneration of the plantation trees, but, in general, growth is only moderate. There is a good proportion of dead standing and fallen timber. The coniferous element comprises locally frequent Corsican and Scots pine (<i>Pinus nigra</i>, <i>Pinus sylvestris</i>), which are showing no regeneration. The shrub layer is generally poorly represented with only scattered hawthorn (<i>Crataegus monogyna</i>), locally frequent elder (<i>Sambucus nigra</i>), holly (<i>Ilex aquifolium</i>) and occasional yew (<i>Taxus baccata</i>). Blackthorn (<i>Prunus spinosa</i>) has been recorded previously. Hawthorn forms a discontinuous and gappy hedge around parts of the woodland. Holly is regenerating to some extent. The herb layer contains abundant bluebell (<i>Hyacinthoides non-scripta</i>) and bramble (<i>Rubus fruticosus</i>), frequent creeping soft grass (<i>Holcus mollis</i>), wood millet (<i>Milium effusum</i>), locally-frequent wood anemone (<i>Anemone nemorosa</i>), lesser celandine (<i>Ficaria verna</i>) and tufted hair grass (<i>Deschampsia cespitosa</i>). Other species of scattered occurrence include wild arum (<i>Arum maculatum</i>), male and broad buckler ferns (<i>Dryopteris dilatata</i> and <i>Dryopteris filix-mas</i>), wood avens (<i>Geum urbanum</i>), ground ivy (<i>Glechoma hederacea</i>) and herb robert (<i>Geranium robertianum</i>), with occasional honeysuckle (<i>Lonicera periclymenum</i>), dog's mercury (<i>Mercurialis perennis</i>) and field rose (<i>Rosa arvensis</i>).			

Appendix 3. Local Site(s) Citation

Ivy (*Hedera helix*) is locally frequent throughout much of the site, both carpeting the ground and growing on tree trunks.

Appendix 3. Local Site(s) Citation

Site Status	Local Wildlife Site		
Site Code	6.30	Grid Reference	SE 480057
Site Name	Shrogs Plantation		
Site Owner	Private	Access	There is no presumption about Site Access
Site Area (ha)	0.66	Natural Area	Coal Measures
Geology	Carboniferous mudstone		
Soil Type	Permeable loam		
Aspect	Southwest facing	Exposed Strata	No
Audit Species Recorded (within 1km grid square)			
- Invertebrates: White Letter Hairstreak (<i>Satyrion w-album</i> (<i>Strymonidia w-album</i>))			
Habitats Recorded	PBW (Broad-leaved Plantation Woodland) / H- (Hedges Defunct)		
NVC Affiliation	W8 / W10		
Criteria for LS Designation	WD3 / WD5 / SM1		
Other Designations (on site or adjoining)			
Informative (on site or in locality)	Creeping Thistle (<i>Cirsium arvense</i>) Spear Thistle (<i>Cirsium vulgare</i>) Broad-Leaved Dock (<i>Rumex obtusifolius</i>) Common Ragwort (<i>Senecio jacobaea</i>)		
Boundaries (Link to interactive map if available)	URL		
Site Description at last visit			
Date of visit - 25/04/2019		25/04/19	
This small linear deciduous woodland and stream is located between the fairways at Hickleton Golf Course. The canopy species contain widespread and abundant sycamore (<i>Acer pseudoplatanus</i>), associated with locally-frequent pedunculate oak (<i>Quercus robur</i>), ash (<i>Fraxinus excelsior</i>), wych elm (<i>Ulmus glabra</i>) and field maple (<i>Acer campestre</i>), with hybrid crack willow (<i>Salix x fragilis</i>) beside the stream. There are some large hybrid black poplar (<i>Populus</i> spp) of considerable size, and the eastern edge of the woodland also has some very large 'veteran' field maple trees. The woodland is now bordered by planted and self-set scrub making the boundaries of the old wood less distinct. In places the old boundary can be traced on the ground by a subtle bank and ditch feature. Occasional silver birch (<i>Betula pendula</i>) and alder (<i>Alnus glutinosa</i>) have also been recorded in past surveys. There is some regeneration throughout the site of sycamore, ash and wych elm. Beech (<i>Fagus sylvatica</i>) is also encountered occasionally. There is a quite widespread, though sometimes scattered shrub layer of frequent hazel (<i>Corylus avellana</i>) and elder (<i>Sambucus nigra</i>). Hawthorn (<i>Crataegus monogyna</i>) also occurs throughout, with locally-frequent holly (<i>Ilex aquifolium</i>) and, rarely, guelder-rose (<i>Viburnum opulus</i>), wild cherry (<i>Prunus avium</i>) and wild privet (<i>Ligustrum vulgare</i>). Other low shrubs include red current (<i>Ribes rubrum</i>) and snowberry (<i>Symphoricarpos albus</i>). The herb layer is typical of a neutral to mildly calcareous soil type and contains abundant bramble (<i>Rubus fruticosus</i>) locally-abundant dog's mercury (<i>Mercurialis perennis</i>), ramsons (<i>Allium ursinum</i>), wood anemone (<i>Anemone nemorosa</i>), locally-frequent wild arum (<i>Arum</i>			

Appendix 3. Local Site(s) Citation

maculatum), wood false-brome (*Brachypodium sylvaticum*), enchanter's nightshade (*Circaea lutetiana*) and giant fescue (*Schedonorus giganteus*) (recorded in an earlier survey). Bluebell (*Hyacinthoides non-scripta*) is locally-abundant as are yellow archangel (*Lamium galeobdolon*), ivy (*Hedera helix*), lesser celandine (*Ficaria verna*) and wood millet (*Milium effusum*). Other herbs of scattered or locally-frequent occurrence include hedge woundwort (*Stachys sylvatica*), black bryony (*Tamus communis*), honeysuckle (*Lonicera periclymenum*), wood dock (*Rumex sanguineus*), ground ivy (*Glechoma hederacea*), herb robert (*Geranium robertianum*), wood avens (*Geum urbanum*), and field rose (*Rosa arvensis*). Scattered ferns include broad buckler and male fern (*Dryopteris dilatata* and *D. filix-mas*).

Some localised areas of disturbed ground have locally-frequent Cleavers (*Galium aparine*), cow parsley (*Anthriscus sylvestris*), hogweed (*Heracleum sphondylium*) and nettle (*Urtica dioica*), with locally-frequent raspberry (*Rubus idaeus*).

The northern boundary of the site grades out to a scrubby edge of smaller trees and shrubs, on the edge of the golf course, and here one encounters occasional goat willow (*Salix caprea*), grey willow (*Salix cinerea*) and hybrid crack willow (*Salix x fragilis*). Two tracks cut through the wood to allow golfers to reach adjacent holes. These are surfaced with artificial turf to prevent erosion.

This is a small wooded enclave of moderately diverse floristic interest, which contains elements of and affinity with W10 and W8 woodland types.

Appendix 3. Local Site(s) Citation

Site Status	Local Wildlife Site		
Site Code	6.31	Grid Reference	SE 475056
Site Name	Calf Croft		
Site Owner	Private	Access	There is no presumption about Site Access
Site Area (ha)	1.44	Natural Area	Coal Measures
Geology	Carboniferous mudstone		
Soil Type	Permeable loam/calcareous deposits		
Aspect	North west facing - slight slope	Exposed Strata	No
Audit Species Recorded (within 1km grid square)			
- Vascular Plants: Great horsetail (<i>Equisetum telmateia</i>)			
Habitats Recorded	PBW (Broad-leaved Plantation Woodland) / H (Hedges Intact) / H- (Hedges Defunct) / F (Fence)		
NVC Affiliation	W8 / W10		
Criteria for LS Designation	WD3 / WD5 / SM1		
Other Designations (on site or adjoining)			
Informative (on site or in locality)	Creeping Thistle (<i>Cirsium arvense</i>) Spear Thistle (<i>Cirsium vulgare</i>) Broad-Leaved Dock (<i>Rumex obtusifolius</i>)		
Boundaries (Link to interactive map if available)	URL		
Site Description at last visit	21/04/2016		
Date of visit - 21/04/2016			
This small broadleaved plantation located adjacent to Hickleton Golf Course Club House contains abundant sycamore (<i>Acer pseudoplatanus</i>) associated with locally-frequent ash (<i>Fraxinus excelsior</i>), beech (<i>Fagus sylvatica</i>) and occasional pedunculate oak (<i>Quercus robur</i>). Hybrid crack willow (<i>Salix x fragilis</i>), occasional goat willow (<i>Salix caprea</i>) and alder (<i>Alnus glutinosa</i>) occur adjacent to Thurnscoe Dike. There is moderately-good regeneration of sycamore, oak and ash, and some young beech, around 10-15 years old. The shrub layer contains locally-frequent elder (<i>Sambucus nigra</i>), widespread hawthorn (<i>Crataegus monogyna</i>), some of which forms a hedgerow around part of the site, and occasional dogwood (<i>Cornus sanguinea</i>). Guelder rose (<i>Viburnum opulus</i>) is particularly abundant alongside Thurnscoe Dike. The herb layer contains locally abundant dog's mercury (<i>Mercurialis perennis</i>), abundant lesser celandine (<i>Ficaria verna</i>), bramble (<i>Rubus fruticosus</i>), locally frequent/locally abundant wood anemone (<i>Anemone nemorosa</i>), ramsons (<i>Allium ursinum</i>), wood false brome (<i>Brachypodium sylvaticum</i>), wood avens (<i>Geum urbanum</i>), ground ivy (<i>Glechoma hederacea</i>), ivy (<i>Hedera helix</i>), yellow archangel (<i>Lamiastrum galeobdolon</i>), bluebell (<i>Hyacinthoides non-scripta</i>), wood millet (<i>Milium effusum</i>), field rose (<i>Rosa arvensis</i>), rough-stalked meadow grass (<i>Poa trivialis</i>) and greater stitchwort (<i>Stellaria holostea</i>). Scattered common dog violet (<i>Viola riviniana</i>) and wood sorrel (<i>Oxalis acetosella</i>) are also found. Damper ground near the stream course has locally frequent meadowsweet (<i>Filipendula ulmaria</i>), common valerian (<i>Valeriana officinalis</i>), creeping buttercup (<i>Ranunculus repens</i>),			

Appendix 3. Local Site(s) Citation

wood dock (*Rumex sanguineus*) and wavy bitter-cress (*Cardamine flexuosa*), with, giant horsetail (*Equisetum telmateia*) in moderately good numbers alongside the northern stream bank.

Hop (*Humulus lupulus*) is locally frequent, scrambling over scrubby vegetation on the western boundary.

A proportion of ruderal type vegetation is also present, with widespread cleaver (*Galium aparine*), locally frequent cow parsley (*Anthriscus sylvestris*) and nettle (*Urtica dioica*) in more disturbed areas near boundaries. Raspberry (*Rubus idaeus*) is also occasional.

A small woodland of, overall, quite reasonable floristic interest, showing affinities with both W8 and W10 types.

Appendix 3. Local Site(s) Citation

Site Status	Local Wildlife Site		
Site Code	6.32	Grid Reference	SE 480055
Site Name	Castle Hill, Hickleton		
Site Owner	Private/Unknown	Access	There is no presumption about Site Access
Site Area (ha)	1.31	Natural Area	Coal Measures
Geology	Carboniferous mudstone		
Soil Type	Permeable loam		
Aspect	Varied	Exposed Strata	Yes
Audit Species Recorded (within 1km grid square) - Birds: Willow tit (<i>Parus montanus</i>) - Invertebrates: White Letter Hairstreak (<i>Satyrion w-album</i> (<i>Strymonidia w-album</i>)) - Reptiles: Grass snake (<i>Natrix natrix</i> sub sp <i>helvetica</i>)			
Habitats Recorded	PBW (Broad-leaved Plantation Woodland)		
NVC Affiliation			
Criteria for LS Designation	WD2 / WD3 / WD5		
Other Designations (on site or adjoining)	Greenspace		
Informative (on site or in locality)	Creeping Thistle (<i>Cirsium arvense</i>) Spear Thistle (<i>Cirsium vulgare</i>) Broad-Leaved Dock (<i>Rumex obtusifolius</i>) Common Ragwort (<i>Senecio jacobaea</i>)		
Boundaries (Link to interactive map if available)	URL		
Site Description at last visit	21/04/2016		
Date of visit - 21/04/2016 The site comprises a small broadleaved plantation adjacent to a golf course and housing estate. The woodland is dominated by sycamore (<i>Acer pseudoplatanus</i>). Other species such as wych elm (<i>Ulmus glabra</i>) are only rarely present. Hazel (<i>Corylus avellana</i>) has also been recorded here. A frequent shrub component is elder (<i>Sambucus nigra</i>), with occasional hawthorn (<i>Crataegus monogyna</i>). The herb layer is dominated by nettle (<i>Urtica dioica</i>) and rampant growth of ivy (<i>Hedera helix</i>) on the ground and up many tree trunks. Cleavers (<i>Galium aparine</i>) is abundant together with locally-abundant dog's mercury (<i>Mercurialis perennis</i>), ground ivy (<i>Glechoma hederacea</i>) and lesser celandine (<i>Ficaria verna</i>). Frequent species include wood dock (<i>Rumex sanguineus</i>), wood millet (<i>Milium effusum</i>), red currant (<i>Ribes rubrum</i>), cuckoo pint (<i>Arum maculatum</i>), wood avens (<i>Geum urbanum</i>), bluebell (<i>Hyacinthoides non-scripta</i>), upright hedge parsley (<i>Torilis japonica</i>) and herb Robert (<i>Geranium robertianum</i>). Species found in smaller quantities include raspberry (<i>Rubus idaeus</i>), ivy-leaved speedwell (<i>Veronica hederifolia</i>), hart's tongue (<i>Phyllitis scolopendrium</i>), garlic mustard (<i>Alliaria petiolata</i>), hedge woundwort (<i>Stachys sylvatica</i>) and broad buckler fern (<i>Dryopteris dilatata</i>). Grass snake (<i>Natrix natrix</i>) has been recorded in the woodland in the past and bird species recorded previously include willow tit (<i>Parus montanus</i>) and greater spotted woodpecker (<i>Dendrocopos major</i>).			

Appendix 3. Local Site(s) Citation

There is a large vertical cliff of exposed bedrock of Permian limestone of the Cadeby Formation. This is an artificial promontory which dates from quarrying of the site probably in the late 1700-1800s. This exposure is between 4 and 5 metres high with horizontal bedding planes and vertical joints. Some large cracks and deep fissures are present. The face is partially-covered by ivy and ferns. The texture is variable with some very crumbly granular sections of highly-erodible deep-buff to ochre-coloured rock.

A wooden post and rail fence runs across the middle of this outcrop demarcating the boundary of an adjacent garden. There is a gated access and it appears that garden waste has been, and is still being, tipped over the cliff edge, smothering the herb layer below and introducing non native species into the woodland.

Appendix 3. Local Site(s) Citation

Site Status	Local Wildlife Site		
Site Code	6.34	Grid Reference	SE 480046
Site Name	Hickleton Park		
Site Owner	Private	Access	There is no presumption about Site Access
Site Area (ha)	93.89	Natural Area	Coal Measures
Geology	Carboniferous Mudstone		
Soil Type	Waterlogged loam/clay		
Aspect	South-west facing in part	Exposed Strata	No
Audit Species Recorded (within 1km grid square)			
- Invertebrates: White Letter Hairstreak (Satyrium w-album (Strymonidia w-album))			
- Vascular Plants: Autumn crocus(Meadow saffron(Naked ladies (Colchicum autumnale)			
Habitats Recorded	PBW (Broad-leaved Plantation Woodland) / SBW (Broad Leaved Scattered Trees) / SNG (Semi-improved Neutral Grassland) / SWE (Standing Water Eutrophic) / AM (Amenity Grassland) / HS (Hard Standing)		
NVC Affiliation	A9 / MG1 / MG7 / S14 / W8 / W10 / W16		
Criteria for LS Designation	WD2 / WD3 / WD5 / PK1 / GR2 / SW1 / SM1 / SM2		
Other Designations (on site or adjoining)	Parks and Gardens Greenspace		
Informative (on site or in locality)	Creeping Thistle (Cirsium arvense) Spear Thistle (Cirsium vulgare) Japanese Knotweed (Fallopia japonica) Broad-Leaved Dock (Rumex obtusifolius) Common Ragwort (Senecio jacobaea)		
Boundaries (Link to interactive map if available)	URL		
Site Description at last visit			
Date of visit - 09 & 23/05/2011, 10 & 17/06/2011 & 13/07/2011		13/07/2011	
This large site comprises extensive areas of parkland/wood pasture, mixed deciduous woodland plantations and more formal ornamental gardens and trees. It is centred on Hickleton Hall, now utilised as a Sue Ryder Care Home, and located immediately south of Hickleton Village, at the junction of Hickleton Road and Barnsley Road. The general altitude lies between 50 - 110 m. A.O.D. and the surrounding land use is agricultural and residential housing. A fairly continuous area of mixed deciduous woodland plantation occupies the southern and south-western sectors of the site and continues part way around the eastern boundary as a thin shelter belt. Elsewhere, more ornamental planted woodland is located west of the Hall at the northern end. The parkland trees are scattered or locally frequent throughout the extensive central grassland zones, and typify the 'wood-pasture' or parkland landscape. The principal woodland area, Bella Wood, incorporating the narrow roadside strip extending from it, contains abundant sycamore (Acer pseudoplatanus) with locally abundant sessile oak (Quercus petraea), locally frequent pedunculate oak (Q. robur) and the hybrid (Q. x rosacea), silver and downy birch (Betula pubescens, B. pendula), beech (Fagus sylvatica), sweet chestnut (Castanea sativa), larch (Larix decidua) and ash (Fraxinus excelsior). Other species of scattered or local occurrence include wych and English elm (Ulmus glabra, U. procera),			

Appendix 3. Local Site(s) Citation

hornbeam (*Carpinus betulus*), rowan (*Sorbus aucuparia*), wild cherry (*Prunus avium*), common lime (*Tilia x europaea*), horse chestnut (*Aesculus hippocastanum*), yew (*Taxus baccata*) and Scots pine (*Pinus sylvestris*). Much of the canopy is quite mature, even-aged and regularly-spaced, indicating planted origin. The canopy is often 40 - 45 ft. in height, but elsewhere 30-35 ft, and regeneration is not generally well developed, although birch, oak and sycamore are all showing scattered spontaneous growth in some areas. There are scattered amounts of dead wood and occasional very old cut stumps. There has been recent woodland management to remove or thin some of the conifers. The woodland rides are wide, open and sunny and support an abundance of flowering herbs.

The more-ornamental woodland adjacent to the Hall contains widespread sycamore, with some wild cherry (*Prunus avium*), locally-frequent yew, laurel (*Prunus laurocerasus*), snowberry (*Symphoricarpos albus*), common lime and beech, and these species, with occasional horse chestnut, are also found as scattered mature trees throughout the pasture/parkland zones. Within the ornamental woodlands the herb layer is dominated by ivy (*Hedera helix*) and dog's-mercury (*Mercurialis perennis*) with some locally-dominant ramsons (*Allium ursinum*), and occasional patches of wood anemone (*Anemone nemorosa*). There is a clump of Japanese knotweed (*Fallopia japonica*) growing near a garden waste dumping area not far from an old quarry south of the Hall.

There is a scattered or elder (*Sambucus nigra*) shrub layer in the main woodland zones, and hawthorn (*Crataegus monogyna*) is a frequent hedge species fronting the road or in other edge situations. Other shrub species are generally scarce or local, and include scattered wild privet (*Ligustrum vulgare*), gooseberry (*Ribes uva-crispa*), blackthorn (*Prunus spinosa*), holly (*Ilex aquifolium*) and planted rhododendron (*Rhododendron ponticum*).

The species composition of the herb layer within the woodlands indicates calcareous, neutral and moderately acidic soil types. Bramble (*Rubus fruticosus*) is abundant in many areas and particularly beneath a dominant sycamore canopy, where it is associated with frequent wood millet (*Milium effusum*) and locally-frequent ground ivy (*Glechoma hederacea*), herb robert (*Geranium robertianum*), wood avens (*Geum urbanum*), yellow archangel (*Lamiastrum galeobdolon*), yellow pimpernel (*Lysimachia nemorum*), dog's mercury (*Mercurialis perennis*) and ivy (*Hedera helix*). Other species of scattered occurrence in this more-neutral soil type include hedge woundwort (*Stachys sylvatica*), dog rose (*Rosa canina*), hairy brome (*Bromopsis ramosa*), bluebell (*Hyacinthoides non-scripta*), wood false brome (*Brachypodium sylvaticum*) and red campion (*Silene dioica*).

The open sunny rides of Bella wood support a profusion of flowering herbs including bugle (*Ajuga reptans*), slender St John's-wort (*Hypericum pulchrum*), self heal (*Prunella vulgaris*), primrose (*Primula vulgaris*), meadow buttercup (*Ranunculus acris*) and wood speedwell (*Veronica montana*), as well as the common woodland herbs.

Within Bella wood there are two spring-fed streams which arise in the pastures around the Estate. The streams have been impounded by a dam to create a pond within the woodland. The dam is not longer maintained and the pond has long since silted up. These damper shady zones have locally-frequent giant fescue (*Festuca gigantea*), tufted hair grass (*Deschampsia cespitosa*), creeping buttercup (*Ranunculus repens*), enchanter's nightshade (*Circaea lutetiana*) and, rarely, hemp agrimony (*Eupatorium cannabinum*). Where there is permanent flow of water through the soils, rarer species such as marsh marigold (*Caltha palustris*), large bittercress (*Cardamine amara*), opposite-leaved golden saxifrage (*Chrysosplenium oppositifolia*), lady fern (*Athyrium filix-femina*) occur together with angelica (*Angelica sylvestris*), remote sedge (*Carex remota*), meadow sweet (*Filipendula ulmaria*), hairy St John's-wort (*Hypericum hirsutum*) and water mint (*Mentha aquatica*) under the canopy of alder (*Alnus glutinosa*), crack willow (*Salix fragilis*), and grey willow (*Salix cinerea*).

Appendix 3. Local Site(s) Citation

More acidic soil types beneath sessile oak and birch have a herb layer of locally abundant creeping soft grass (*Holcus mollis*) with locally frequent bracken (*Pteridium aquilinum*) and wavy hair grass (*Deschampsia flexuosa*) with scattered honeysuckle (*Lonicera periclymenum*), foxglove (*Digitalis purpurea*), wood sage (*Teucrium scorodonia*), gorse (*Ulex europaeus*), broad buckler and male fern (*Dryopteris dilatata* and *D. filix-mas*).

In edge areas, on the fringes of the site especially the roadside woodland strips, a more ruderal vegetation type is present, associated with bramble and other species already described. In such zones, rosebay willowherb (*Chamerion angustifolium*), nettle (*Urtica dioica*) and hedge garlic (*Alliaria petiolata*) are locally frequent, together with scattered raspberry (*Rubus idaeus*) and lesser burdock (*Arctium minus*).

The extensive wooded parkland landscape comprises cattle-grazed neutral pasture which is generally species poor and dominated by perennial rye-grass (*Lolium perenne*), white clover (*Trifolium repens*), locally-frequent creeping thistle (*Cirsium arvense*), meadow and creeping buttercup (*Ranunculus repens*) and few other associates. There are one or two small zones where differences in topography produce hillocks or rising ground, which support a more diverse sward. Near the Hall is a steep bank of calcareous grassland with tor grass (*Brachypodium pinnatum*), upright brome (*Bromopsis erecta*), common knapweed (*Centaurea nigra*), ox-eye daisy (*Leucanthemum vulgare*), bird's-foot trefoil (*Lotus corniculatus*), meadow vetchling (*Lathyrus pratensis*), cowslip (*Primula veris*), salad burnet (*Sanguisorba minor*) and one or two plants of green hellebore (*Helleborus viridis*). By contrast, further down the slope within the cattle-grazed pastures is a stream, the banks of which have an acidic grassland sward.

The stream arises from a spring under shade of crack willows and meanders through a narrow band of cattle-poached areas of swamp and wet grassland with rushes and cuckoo flower (*Cardamine pratensis*), abundant fool's watercress (*Apium nodiflorum*), scattered common duckweed, soft and hard rush (*Juncus effusus* and *J. inflexus*), brooklime (*Veronica beccabunga*), locally-abundant creeping buttercup, scattered wavy bittercress (*Cardamine flexuosa*), plicate sweet-grass (*Glyceria notata*), greater bird's-foot trefoil (*Lotus pedunculatus*), bog stitchwort (*Stellaria alsine uliginosa*), and marsh foxtail (*Alopecurus geniculatus*).

The acidic grassland on the steeper banks is dominated by common bent (*Agrostis capillaris*), sheep's-fescue (*Festuca ovina*), heath grass (*Danthonia decumbens*) with sweet vernal-grass (*Anthoxanthum odoratum*), yellow oat grass (*Trisetum flavescens*), crested dog's-tail (*Cynosurus cristatus*). Herbs include locally-frequent cat's-ear (*Hypochaeris radicata*), tormentil (*Potentilla erecta*), harebell (*Campanula rotundifolia*), sheep's sorrel (*Rumex acetosella*), pignut (*Conopodium majus*), field woodrush (*Luzula campestris*), heath speedwell (*Veronica officinalis*), lesser stitchwort (*Stellaria graminea*), mouse-ear hawkweed (*Pilosella officinarum*) and bitter vetch (*Lathyrus linifolius*). Elsewhere the pasture is less steep and has been fertilized and highly improved and is dominated by perennial ryegrass and soft brome (*Bromus hordeaceus*) with very little else in the sward. An improved sward also dominated the grassland in the fields to the east of the Hickleton to Barnburgh Road.

The site also contains two areas of open water or wetland, identified on the map. The first of these, a circular ornamental pond near the Hall, has now been drained and grassed over and supports locally-abundant hairy sedge (*Carex hirta*), tufted hairgrass, cuckoo flower, jointed rush (*Juncus articulatus*), soft rush, creeping buttercup and square-stemmed St John's-wort (*Hypericum tetrapterum*). The second open water zone, identified as Loscoe Pond, is located within a zone of grazing pasture. Previous surveys found abundant broad-leaved pondweed (*Potamogeton natans*) and common duckweed (*Lemna minor*) in the open water itself, with a fringing extensive zone of emergent branched bur-reed (*Sparganium erectum*), scattered soft and hard rush and floating sweet-grass (*Glyceria fluitans*). The spring-fed water supply to the

Appendix 3. Local Site(s) Citation

pond had very-recently been diverted away from the pond due to problems caused by unofficial angling and the pond is now dry. Litter and nuisance were becoming detrimental to the grazing stock. The water supply could be re-instated to re-fill the pond in future if the problems of trespassing can be overcome.

The area around the Hall itself is laid out in ornamental gardens and lawns. Some of the lawns to the east of the Hall have a variety of low-growing lime-loving herb species including yarrow (*Achillea millefolium*), wild strawberry (*Fragaria vesca*), rough hawkbit (*Leontodon hispidus*), common and greater knapweed (*Centaurea nigra* and *C. scabiosa*), common cat's-ear (*Hypochaeris radicata*), ox-eye daisy, bird's-foot trefoil, field woodrush, mouse-ear hawkweed, hoary plantain (*Plantago media*), cowslip, self-heal, orange hawkweed (*Pilosella aurantiaca*), bulbous buttercup (*Ranunculus bulbosus*), meadow buttercup, sweet violet (*Viola odorata*), early dog violet (*Viola reichenbachiana*) and grasses of calcareous swards, such as quaking grass (*Briza media*). Lady's mantle (*Alchemilla* sp.) was also found in previous surveys. A slightly-less diverse, more-neutral grassland is found around the Churchyard although the profusion of ox-eye daisy is allowed to flower in early summer.

Photos and Target Notes:

- N1 Possible *Sium latifolia* (or *Berula*?) at SE4814804465
- TN2 Bitter vetch on unimproved grassy bank at SE4812304433
- TN3 Species-rich grassy bank at SE4805304488
- TN4 *Caltha palustris* in stream side wetlands at SE4787104566
- TN5 Mature hornbeam trees at SE4775704626
- TN6 *Hypericum pulchrum* at SE4766604252
- TN7 *Helleborus viridis* at SE4816604749
- TN8 *Helleborus viridis* at SE4816704782
- TN9 *Ranunculus auricomus* near ornamental pond at SE4814505085
- TN10 Japanese Knotweed near garden waste dumping area at SE4804505103

Appendix 3. Local Site(s) Citation

Site Status	Local Wildlife Site		
Site Code	6.66	Grid Reference	SE 479057
Site Name	Hickleton Golf Course		
Site Owner	Private	Access	There is no presumption about Site Access
Site Area (ha)	49.59	Natural Area	Southern Magnesian Limestone
Geology	Permian/Jurassic/Eocene Limestone		
Soil Type	Well drained calcareous		
Aspect	Gentle slope	Exposed Strata	No
Audit Species Recorded (within 1km grid square)			
- Birds: Willow tit (<i>Parus montanus</i>) / Bullfinch (<i>Pyrrhula pyrrhula</i>) / Song thrush (<i>Turdus philomelos</i>)			
- Invertebrates: White Letter Hairstreak (<i>Satyrion w-album</i> (<i>Strymonidia w-album</i>))			
- Reptiles: Grass snake (<i>Natrix natrix</i> sub sp <i>helvetica</i>)			
- Vascular Plants: Tufted sedge (<i>Carex elata</i>) / Great horsetail (<i>Equisetum telmateia</i>)			
Habitats Recorded	NOT SURVEYED		
NVC Affiliation			
Criteria for LS Designation	WD2 / WD3 / WD5 / SW1 / SW2 / SM1		
Other Designations (on site or adjoining)	Greenspace		
Informative (on site or in locality)	Creeping Thistle (<i>Cirsium arvense</i>) Spear Thistle (<i>Cirsium vulgare</i>) Broad-Leaved Dock (<i>Rumex obtusifolius</i>) Common Ragwort (<i>Senecio jacobaea</i>)		
Boundaries (Link to interactive map if available)	URL		
Site Description at last visit			
Date of visit – 02/07/2013		02/07/2013	
This site is a golf course formed over an extensive area of land consisting of original ridge and furrow, species-rich hedgerows and remnant parts of broadleaved woodland. Both the old meadow areas (now overplanted and 'rough' areas on the course) and the hedgerows still maintain a very mixed ground flora. The original areas on the golf course have ash (<i>Fraxinus excelsior</i>), hawthorn (<i>Crataegus monogyna</i>), oak (<i>Quercus robur</i>), alder (<i>Alnus glutinosa</i>), hazel (<i>Corylus avellana</i>) and holly (<i>Ilex aquifolium</i>). Many other species of trees have been planted on the golf course including various cultivars of rowan (<i>Sorbus aucuparia</i>), Swedish whitebeam (<i>Sorbus intermedia</i>) and cherries (<i>Prunus avium</i>). Many of these new plantations have mown grass beneath. On the western side of the golf course is sited a series small linear ponds, the lowest of which had been recently cleaned out. Construction of a replacement outlet channel was underway following the damage caused by flood events in recent years. The lower pond contains bulrush (<i>Typha latifolia</i>), soft, hard, jointed and compact rushes (<i>Juncus effusus</i>, <i>J. inflexus</i>, <i>J. articulatus</i> and <i>J. conglomeratus</i>) and water forget-me-not (<i>Myosotis scorpioides</i>). The upper two ponds have curled pondweed (<i>Potamogeton crispus</i>) and broadleaved pondweed (<i>Potamogeton natans</i>). Water crow foot (<i>Ranunculus aquatilis</i>) and lesser water parsnip (<i>Berula erecta</i>) have also been recorded here in previous surveys. Immediately behind the pond on the 1st fairway is a steep bank of unimproved neutral grassland which is a relict of species-rich pastures. It supports greater and common			

Appendix 3. Local Site(s) Citation

knapweed (*Centaruea nigra* and *C. scabiosa*), betony (*Betonica officinalis*), devil's-bit scabious (*Succisa pratensis*), tormentil (*Potentilla erecta*), great burnet (*Sanguisorba officinalis*) and an abundance of pignut (*Conopodium majus*). This herb-rich turf is also evident in the adjacent copse of young trees, suggesting that this has been planted over a similar fragment of species-rich turf.

The majority of the grassland on the site are derived from improved grass swards dominated by ryegrass (*Lolium perenne*), annual meadowgrass (*Poa annua*) with Yorkshire fog (*Holcus lanatus*) and false oat-grass (*Arrhanatherum elatius*) in some unmanaged areas of rough. Other areas of re-seeded grassland have a ridge and furrow topography and supports clovers (*Trifolium pratense* and *T. repens*), cowslip (*Primula veris*), oxeye daisy (*Leucanthemum vulgare*), meadow foxtail (*Alopecurus pratensis*), common sorrel (*Rumex acetosa*), self heal (*Prunella vulgaris*), daisy (*Bellis perennis*), meadow buttercup (*Ranunculus acris*) and yarrow (*Achillea millefolium*). A small bank of more-calcareous grassland is found on the northern perimeter of the golf course where upright brome (*Bromus erectus*) dominates the sward.

Relicts of the former farmed landscape survive in the form of several large mature hedgerow oak trees and old hedgelines which have been incorporated into the woodland planting. There are large, mature, white willow (*Salix alba*) at the head of the Thurnscoe Dike. The adjacent rough herbage is dominated by coarse grasses and tall ruderals including nettle (*Urtica dioica*) but also including some great burnet and greater willowherb (*Epilobium hirsutum*). Nearby is an area of scrub which still has some open grassy areas between. These grassy glades support locally-frequent common spotted orchid (*Dactylorhiza fuchsii*) and ox-eye daisy.

The central portion of Thurnscoe Dike flows through another separate woodland Local Wildlife Site known as Shrogs Plantation.

Species which were found in the woodland include, wood millet (*Milium effusum*), bluebell (*Hyacinthoides non-scripta*), bramble (*Rubus fruticosus*), wood sorrel (*Oxalis acetosella*), dog's mercury (*Mercurialis perennis*), cleavers (*Galium aparine*), herb Robert (*Geranium robertianum*), ivy (*Hedera helix*), cow parsley (*Anthriscus sylvestris*), yellow archangel (*Lamiastrum galeobdolon*), common dog violet (*Viola riviniana*), greater stitchwort (*Stellaria holostea*), lesser celandine (*Ficaria verna*), wild hop (*Humulus lupulus*), tufted hair grass (*Deschampsia cespitosa*), garlic mustard (*Alliaria petiolata*), water mint (*Mentha aquatica*), ramsons (*Allium ursinum*), honeysuckle (*Lonicera periclymenum*), meadowsweet (*Filipendula ulmaria*), bugle (*Ajuga reptans*), cuckoo pint (*Arum maculatum*), remote sedge (*Carex remota*), Yorkshire fog (*Holcus lanatus*) and dandelion (*Taraxacum officinale*).

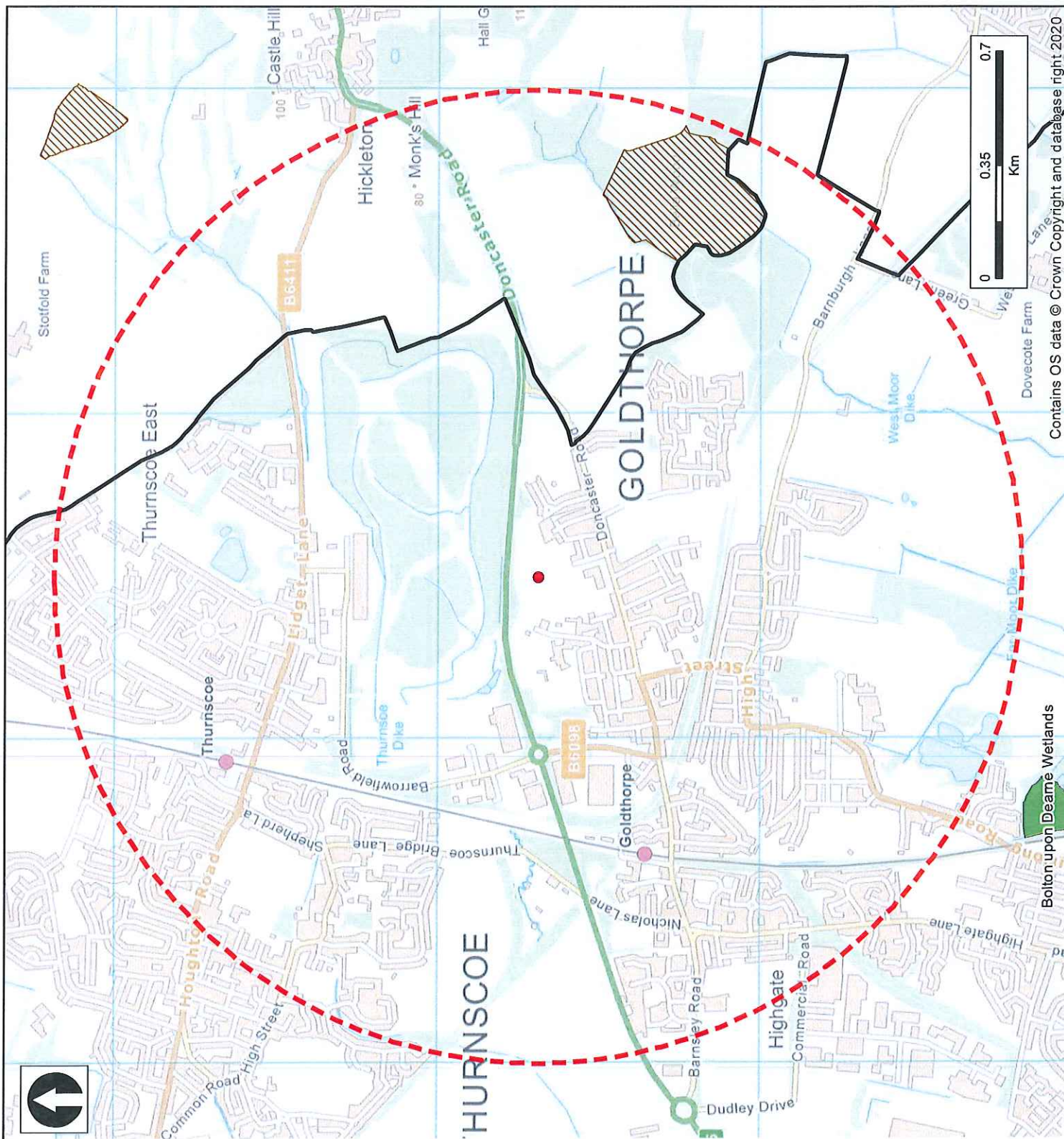
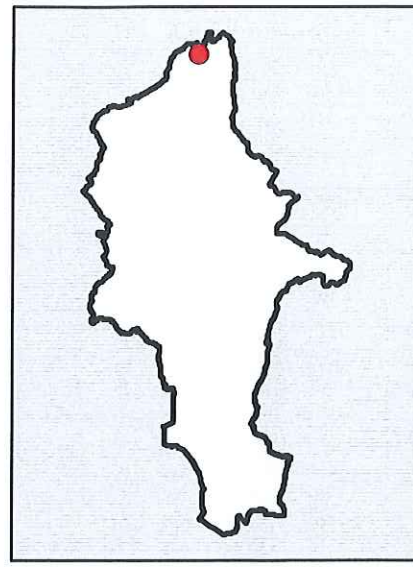
Thurnscoe Dike is a wooded stream which flows in a deep gully. The banks are of firm clayey soils with shaley stones on the bottom of the channel. The shading of the channel means that there are no emergent or aquatic species. The banks are generally bare except for the trailing ivy and scattered broad buckler fern (*Dryopteris dilatata*), male fern (*Dryopteris filix-mas*), remote sedge and wavy bittercress (*Cardamine flexuosa*). A similar habitat occurs along the tributary stream which flows in a shallow wooded valley on the western edge of the golf course but here lady fern (*Athyrium filix-femina*) is locally-abundant. This western stream is bordered by a scrub woodland of hawthorn and the herb layer includes dog's-mercury, ivy, hedge woundwort (*Stachys sylvatica*), scattered garlic mustard, wild garlic and wood sorrel. The woodland in the upper reaches have a typically calcareous ground flora which includes wood frequent false brome (*Brachypodium sylvaticum*), wood anemone (*Anemone nemorosa*) and bluebell.

Another shallow dry drainage channel runs along the northern side of the adjacent Calf Croft LWS. This drain is heavily shaded by the adjacent woodland but includes species such as angelica (*Angelica sylvestris*), guelder rose (*Viburnum opulus*) and greater horsetail (*Equisetum telmateia*).

LOCKWOOD ROAD GOLDTHORPE

Lockwood Road Goldthorpe

- Centre of search area
- 1.5km radius
- Ancient Woodland
- Local Wildlife Site
- Barnsley Boundary



APPENDIX 4

Target Notes Associated with Drawing 1

Target Note (Refer to Drawing 1)	Description	Photograph
1	Large species-poor short-sward field in north-western part of the Site.	
2	Small short-sward horse-grazed compartments in the central section of the Site, with species-poor modified grassland.	
3	Duck-grazed compartment, with species-poor short-sward grassland.	

Target Note (Refer to Drawing 1)	Description	Photograph
4	Ungrazed/less intensively managed compartments of modified grassland with tall ruderals and scrub.	
5	Sparse tall ruderal vegetation on disturbed ground.	
6	Large field at the southern end of the Site with tall sward unmanaged grassland interspersed with tall ruderal and scrub.	
7	Allotments.	

Target Note (Refer to Drawing 1)	Description	Photograph
8	Dense scrub dominated by bramble.	
9	Off-Site scrubby broad-leaved woodland.	
10	Stand of Japanese knotweed	

APPENDIX 5

HSI Assessments of Ponds for Great Crested Newt

Pond number/reference	D1a		
OS Grid reference	SE 46349 04767		
Location details	35m north-west of the Site		
Habitat Suitability Index			
SI1. Map location	A/B/C	A	SI value 1.00
SI2. Surface area	rectangle/ellipse/irregular	rectangle	
	length (m)	40	
	width (m)	4	
	OR estimate (m ²) if irregular		
	area (m ²) =	160	0.32
SI3. Desiccation rate	never/rarely/sometimes/frequently	frequently	0.10
SI4. Water quality	good/moderate/poor/bad	moderate	0.67
SI5. Shade	% of margin shaded 1m from bank	80	0.60
SI6. Waterfowl	absent/major/minor	absent	1.00
SI7. Fish population	absent/possible/minor/major	absent	1.00
SI8. Pond density	number of ponds within 1km	3	1.00
SI9. Terrestrial habitat	good/moderate/poor/isolated	good	1.00
SI10. Macrophyte cover	%	1	0.32
		HSI =	0.58
		provisional HSI =	0.54
<i>Use provisional HSI value if above 0.75</i>			
		Date undertaken	14.12.20

Pond number/reference	D1b		
OS Grid reference	SE 46368 04762		
Location details	30m north of the Site		
Habitat Suitability Index			
SI1. Map location	A/B/C	A	SI value 1.00
SI2. Surface area	rectangle/ellipse/irregular	rectangle	
	length (m)	8	
	width (m)	4	
	OR estimate (m ²) if irregular		
	area (m ²) =	32	0.06
SI3. Desiccation rate	never/rarely/sometimes/frequently	frequently	0.10
SI4. Water quality	good/moderate/poor/bad	moderate	0.67
SI5. Shade	% of margin shaded 1m from bank	80	0.60
SI6. Waterfowl	absent/major/minor	absent	1.00

SI7. Fish population	absent/possible/minor/major	absent	1.00
SI8. Pond density	number of ponds within 1km	3	1.00
SI9. Terrestrial habitat	good/moderate/poor/isolated	good	1.00
SI10. Macrophyte cover	%	1	0.32
			HSI = 0.49
Use provisional HSI value if above 0.75			provisional HSI = 0.45
			Date undertaken 14.12.20

Pond number/reference	D1c		
OS Grid reference	SE 46414 04752		
Location details	8m north of the Site		
Habitat Suitability Index			
SI1. Map location	A/B/C	A	SI value 1.00
SI2. Surface area	rectangle/ellipse/irregular	rectangle	
	length (m)	20	
	width (m)	3	
	OR estimate (m ²) if irregular		
	area (m ²) =	60	0.12
SI3. Desiccation rate	never/rarely/sometimes/frequently	frequently	0.10
SI4. Water quality	good/moderate/poor/bad	moderate	0.67
SI5. Shade	% of margin shaded 1m from bank	100	0.20
SI6. Waterfowl	absent/major/minor	absent	1.00
SI7. Fish population	absent/possible/minor/major	absent	1.00
SI8. Pond density	number of ponds within 1km	3	1.00
SI9. Terrestrial habitat	good/moderate/poor/isolated	good	1.00
SI10. Macrophyte cover	%	1	0.32
HSI =			0.47
provisional			
HSI =			0.43
Use provisional HSI value if above 0.75			
Date undertaken			14.12.20

Pond number/reference	P1		
OS Grid reference	SE 46167 04835		
Location details	150m north-west of the Site		
Habitat Suitability Index			
SI1. Map location	A/B/C	A	SI value
SI2. Surface area	rectangle/ellipse/irregular	rectangle	1.00
	length (m)	100	

		width (m)	17	
		OR estimate (m ²) if irregular		
		area (m ²) =	1700	0.84
SI3.	Desiccation rate	never/rarely/sometimes/frequently	rarely	1.00
SI4.	Water quality	good/moderate/poor/bad	moderate	0.67
SI5.	Shade	% of margin shaded 1m from bank	20	1.00
SI6.	Waterfowl	absent/major/minor	minor	0.67
SI7.	Fish population	absent/possible/minor/major	possible	0.67
SI8.	Pond density	number of ponds within 1km	3	1.00
SI9.	Terrestrial habitat	good/moderate/poor/isolated	good	1.00
SI10.	Macrophyte cover	%	80	1.00
			HSI =	0.87
			provisional	
			HSI =	0.86
			Date	
			undertaken	14.12.20

Use provisional HSI value if above 0.75

APPENDIX 6

ADAS Laboratory Results of Great Crested Newt eDNA Survey of Pond P1

Client: Hazel Douglas
SLR Consulting Ltd



ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 516747
Email: Helen.Rees@adas.co.uk
www.adas.uk

Sample ID: ADAS-Filter 3 Condition on Receipt: Good Volume: Passed
Client Identifier: Portwest Se Description: pond water samples in preservative
Date of Receipt: 19/04/2021 Material Tested: eDNA from pond water samples

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	20/04/2021
Degradation Control [§]	N/A	Real Time PCR	20/04/2021
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	20/04/2021
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10 ⁻⁴ ng/μL) [#]	4 of 4	Real Time PCR	As above for GCN

Report Prepared by: Dr Helen Rees Report Issued by: Dr Ben Maddison

Signed:

Signed:

Position: Director: Biotechnology Position: MD: Biotechnology

Date of preparation: 20/04/2021 Date of issue: 20/04/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

[†] Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.

[#] Additional positive controls (10⁻¹, 10⁻², 10⁻³ ng/μL) are also routinely run, results not shown here.

Appendix 1: Interpretation of results

Sample Condition

Upon sample receipt we score your samples according to quality: good, low sediment, medium sediment, high sediment, white precipitate, and presence of algae.

There are three reasons as to why sediment should be avoided:

1. It is possible for DNA to persist within the sediment for longer than it would if it was floating in the water which could lead to a false positive result i.e. in this case GCN not recently present but present a long time ago
2. In some cases sediment can cause inhibition of the PCR analysis used to detect GCN eDNA within samples which could lead to an indeterminate result.
3. In some cases sediment can interfere with the DNA extraction procedure resulting in poor recovery of the eDNA which in turn can lead to an indeterminate result.

Algae can make the DNA extraction more difficult to perform so if it can be avoided then this is helpful.

Sometimes samples contain a white precipitate which we have found makes the recovery of eDNA very difficult. This precipitate can be present in such high amounts that it interferes with the eDNA extraction process meaning that we cannot recover the degradation control (nor most likely the eDNA itself) at sufficient levels for the control to be within the acceptable limits for the assay, therefore we have to classify these type of samples as indeterminate.

What do my results mean?

A positive result means that great crested newts are present in the water or have been present in the water in the recent past (eDNA degrades over around 7-21 days).

A negative result means that DNA from the great crested newt has not been detected in your sample.

On occasion an inconclusive result will be issued. This occurs where the DNA from the great crested newt has not been detected but the controls have indicated that either: the sample has been degraded and/or the eDNA was not fully extracted (poor recovery); or the PCR inhibited in some way. This may be due to the water chemistry or may be due to the presence of high levels of sediment in samples which can interfere with the DNA extraction process. A re-test could be performed but a fresh sample would need to be obtained. We have successfully performed re-tests on samples which have had high sediment content on the first collection and low sediment content (through improved sample collection) on the re-test. If water chemistry was the cause of the indeterminate then a re-test would most likely also return an inconclusive result.

The results will be recorded as indeterminate if the GCN result is negative and the degradation result is recorded as:

1. evidence of decay - meaning that the degradation control was outside of accepted limits
2. evidence of degradation or residual inhibition - meaning that the degradation control was outside of accepted limits but that this could have been due to inhibitors not being removed sufficiently by the dilution of inhibited samples (according to the technical advice note)

APPENDIX 7

Walked Bat Activity Transect Surveys – Tables of Results

Summary of results of walked bat transect survey: bat passes per five minutes

Sample Point Count	Common pipistrelle
1	0
2	0
3	0
4	0
5	4
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	1
Total Bat Passes	5
Average Bat Passes/Five Minutes	0.25
Average Bat Passes/Hour	3

APPENDIX 8

Static Bat Detector Surveys – Tables of Results

Total Number of Bat Passes

Static Detector Sample Point	Myotis sp.	Noctule	Noctule/Leisler's	Common pipistrelle	Soprano pipistrelle	Total
A	3	3	4	48	7	65
B	0	1	0	35	2	38
C	1	4	0	17	2	24
D	0	0	0	50	4	54
E	17	1	0	49	3	70
F	3	2	0	10	2	17
Total	24	11	4	209	20	268
Average	4.000	1.833	0.667	34.833	3.333	44.667

Average Number of Bat Passes Per Hour

Static Detector Sample Point	Myotis sp.	Noctule	Noctule/Leisler's	Common pipistrelle	Soprano pipistrelle	Total
A	0.027	0.027	0.036	0.432	0.063	0.585
B	0.000	0.009	0.000	0.315	0.018	0.342
C	0.009	0.036	0.000	0.153	0.018	0.216
D	0.000	0.000	0.000	0.450	0.036	0.486
E	0.153	0.009	0.000	0.441	0.027	0.630
F	0.027	0.018	0.000	0.090	0.018	0.153
Total	0.216	0.099	0.036	1.881	0.180	2.412
Average	0.036	0.017	0.006	0.314	0.030	0.402

EUROPEAN OFFICES

United Kingdom

AYLESBURY

T: +44 (0)1844 337380

BELFAST

belfast@slrconsulting.com

BRADFORD-ON-AVON

T: +44 (0)1225 309400

BRISTOL

T: +44 (0)117 906 4280

CARDIFF

T: +44 (0)29 2049 1010

CHELMSFORD

T: +44 (0)1245 392170

EDINBURGH

T: +44 (0)131 335 6830

EXETER

T: + 44 (0)1392 490152

GLASGOW

glasgow@slrconsulting.com

GUILDFORD

T: +44 (0)1483 889800

LONDON

T: +44 (0)203 805 6418

MAIDSTONE

T: +44 (0)1622 609242

MANCHESTER (Denton)

T: +44 (0)161 549 8410

MANCHESTER (Media City)

T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE

T: +44 (0)191 261 1966

NOTTINGHAM

T: +44 (0)115 964 7280

SHEFFIELD

T: +44 (0)114 245 5153

SHREWSBURY

T: +44 (0)1743 23 9250

STIRLING

T: +44 (0)1786 239900

WORCESTER

T: +44 (0)1905 751310

Ireland

DUBLIN

T: + 353 (0)1 296 4667

France

GRENOBLE

T: +33 (0)6 23 37 14 14