



Land East of Leeds Road, Chidswell
Environmental Statement - Volume 2 – Chapter 14

April 2020

Important notice: This Environmental Statement has been prepared by Deloitte Real Estate, with technical input from Re-form; Delta Simons; Patrick Parsons; Brooks Ecological; Pell Frischmann; and Cotswold Archaeology ("the Consultants"). Chapter 1, Volume 1 of this Environmental Statement sets out the parties responsible for preparing each Chapter and associated figures and appendices.

Although we have read the Consultants' reports for consistency and provide our observations based on our knowledge and experience, we accept no liability or responsibility for the Consultant's Reports and will not be responsible for the technical content of Chapters 7-14 and Chapter 15, Volume 1; nor Volume 2, nor the technical content of the associated separate Non-Technical Summary.

Table of Appendices (Volume 2)

Chapter	Appendix
1 Introduction	1.1 Site Location Plan
2 EIA Methodology	2.1 – EIA Screening and Scoping Report 2.2 – Kirklees Metropolitan District Council’s EIA Scoping Response 2.3 – Committed Developments
3 Alternatives and Design Evolution	N/A
4 Site and Development Description	N/A
5 Construction Programme and Methodology	N/A
6 Socio-Economics	N/A
7 Landscape and Visual Impact	7.1 – Landscape and Visual Impact Assessment
8 Archaeology and Historic Environment	8.1 – Heritage Desk-Based Assessment 8.2 – Geophysical Survey Report
9 Noise and Vibration	9.1 – Baseline Noise Survey Details 9.2 – Acoustic Modelling and Predicted Noise Levels 9.3 – Glossary and Abbreviations
10 Air Quality	10.1 – Construction Phase Assessment Methodology 10.2 – Dispersion Modelling Input Parameters 10.3 – Dispersion Modelling Results
11 Flood Risk and Drainage	11.1 – Strategic Phasing Layout H18119-201
12 Contamination	12.1 – Phase 1 Geoenvironmental Desk Study Report 12.2 – Coal Mining Risk Assessment
13 Transport	13.1 – Transport Assessment 13.2 – Framework Travel Plan
14 Ecology	14.1 – HSI Assessment & Report 14.2 – Barn Owl Scoping Assessment & Report 14.3 – Ornithological Summary (Breeding Birds) 14.4 – Badger Assessment & Report 14.5 – Bat Roost Suitability Assessment & Report 14.6 – Bat Activity Survey 14.7 – Water Vole Report 14.8 – Reptile Survey 14.9 – Hedgerow Assessment & Report

	14.10 – Bat Roost Suitability Assessment 14.11 – Bat Emergence Survey
15 Type 1 Cumulative Effects	N/A
16 Summary of Residual Effects	N/A

14.1 HSI Assessment & Report



HSI Assessment & Report

Land at Chidswell, Dewsbury

Report reference: R-3280-01

March 2018

Report Title:	HSI Assessment & Report Land at Chidswell, Dewsbury
Report Reference:	R-3280-01
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Summary Statement

All ponds, situated within a 500m radius of the Site, and not separated by significant barriers to amphibian movement, have been found to present 'poor' potential great crested newt (GCN) breeding habitat.

These ponds are therefore highly unlikely to support GCN and thus, the risk of this species being impacted is considered to be minimal.

No further survey is considered necessary in support of this conclusion.

Introduction

1. Subsequent to recommendations set out in the WYG, December 2016, Extended Phase 1 Habitat Survey Report (Ref. A054074), Brooks Ecological Ltd were commissioned to carry out a Habitat Suitability Index (HSI) Assessment of off-site ponds, situated within 500m's of the Chidswell Site boundaries.
2. The WYG report shows nine ponds to be present within a 500m radius of the Site; see figure 1 below.

Figure 1 Aerial view of Site & nine off-site ponds. Labelling consistent with WYG



Background information

3. The closest pond, (Pond 1) was surveyed by WYG during the initial extended phase 1 habitat survey and found to present 'poor' habitat for great crested newt (GCN) due to the high population of fish and lack of egg laying substrate. The HSI score is shown in the Table below.

Pond	Grid Ref.	HSI Score	HSI Assessment	Description
P1	E26745 23005	0.18	Poor	Man made with artificial lining; island in the centre supporting a <i>Salix sp.</i> ; heavily fish stocked

4. Ponds 2, 3, 4 and 5 are all considered to be connected to the site by surrounding hedgerows, ditches and field margins, and habitats including tall ruderal, scrub, hedgerows and semi-improved grassland across the site are considered to provide suitable foraging habitat and commuting corridors for GCN.
5. Ponds 2, 3, 4 and 5 have all previously been subject to a HSI assessment, which found them to present 'poor' GCN habitat. However, this was conducted five years ago and these ponds were thought likely to have changed over this period of time. Therefore, an updated HSI assessment of these four ponds (2, 3, 4 and 5) was recommended to determine the likelihood of breeding GCN being present within 500m of the site.
6. The remaining four ponds (Ponds 6, 7, 8 and 9) are well separated from the Site by busy roads and built development, which together act as a significant barrier to amphibians; any GCN populations here would not be expected to disperse into the Site and as such, no further survey or assessment was recommended,

Records

7. As part of the Extended Phase 1 Habitat Survey, WYG requested a data search from West Yorkshire Ecology (WYE).
8. This search returned no records of great crested newt within a 2km search radius.
9. Only two records for common toad (located 1km from the site) and six records for common frog (the closest approximately 1km from the site) were returned for amphibians.

Legal background

10. Great crested newts receive full legal protection being listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are therefore subject to the provisions of Section 9 which make it an offence to:
 - intentionally kill, injure or take a great crested newt;
 - possess or control any live or dead specimen or anything derived from a great crested newt;
 - intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; or
 - intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.

11. It is also listed under the Conservation of Habitats and Species Regulations 2010 which under the provisions of Regulation 41 make it an offence to:
 - (a) deliberately capture, injure or kill any wild animal of a European protected species;
 - (b) deliberately disturb wild animals of any such species;
 - (c) deliberately take or destroy the eggs of such an animal; or
 - (d) damage or destroy a breeding site or resting place of such an animal.

12. Works affecting protected species require a licence from Natural England. Licences can only be granted if there is no satisfactory alternative or if the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in its natural range.

Pond Descriptions

13. All four ponds (2 – 5) were visited on the 9th March 2018.

14. Ponds 2 & 4, both formerly positioned within arable field margins, are no longer present.

15. Pond 3 is located within an arable field margin, surrounded immediately by rough neutral grass, scattered scrub and tall ruderal vegetation. Mature trees are present a short distance to the south, and a typical field hedgerow to the north. The pond has been fly tipped, and measures approximately 4m long by 2.5m wide, and less than 0.2m deep. The pond is in the later stages of terrestrialising, with a lack of management leading to a build-up of silt and dense growth of tall ruderal vegetation. It is likely to dry out annually, and early on in summer.

Figure 2 View of pond 3



- Pond 5 is a large ornamental/ SUDS pond, located within a small light industrial estate, associated with Newly Weds Food Ltd. Fishing platforms have been installed at regular intervals around the pond edge, indicating it has been stocked with coarse fish. The waterbody measures c.50m by 40m, with an unknown depth, and is surrounded by a mix of amenity grass and tree planting.

Figure 3 View of pond 5



Habitat Suitability Index (HSI)

17. Based on an index produced by Oldham et al (2000), the HSI is recognised by Natural England as a useful tool in evaluating the potential of ponds to support great crested newt (GCN) and therefore the likelihood of offences in relation to this species.
18. HSI scores range from 0.1 - 1.0 (see Table 1 below) with 1.0 representing an ideal breeding pond for GCN. Anything below 0.5 is categorised as a poor pond unlikely to support this species - particularly if isolated from other populations.

Table 1 Categorisation of HSI score

HSI	Pond suitability
< 0.5	= poor
0.5 - 0.59	= below average
0.6 - 0.69	= average
0.7 - 0.79	= good
> 0.8	= excellent

19. HSI analysis of Ponds 3 and 5 is presented in Tables 2 & 3 below.

Table 2 HSI score for Pond 3

S1 Location	S2 Pond area	S3 Pond drying	S4 water Quality	S5 Shade	S6 Fowl	S7 Fish	S8 ponds	S9 Terrestrial habitat	S10 Macrophytes
1	0.05	0.1	0.33	1	1	1	0.6	0.67	0.8
HSI Score									0.47

Table 3 HSI Score for Pond 5

S1 Location	S2 Pond area	S3 Pond drying	S4 water Quality	S5 Shade	S6 Fowl	S7 Fish	S8 ponds	S9 Terrestrial habitat	S10 Macrophytes
1	0.8	0.9	0.33	0.8	0.67	0.01	0.55	0.33	0.5
HSI Score									0.40

5. Both ponds fall into the poor category, which is largely achieved due to the small size and regular drying of Pond 3 and the stocking of Pond 5.

Evaluation & Conclusion

6. All ponds situated within a 500m radius of the Site, and not separated by significant barriers to amphibian movement (Ponds 1, 3 & 5 on Figure 1), have been found to present 'poor' potential GCN breeding habitat.
7. A similar result was returned in 2011, when the ponds were surveyed by WYG.
8. Based on an absence of records, and the 'poor' HSI scores, Ponds 1, 3 & 5 are all considered highly unlikely to support GCN and thus, the risk of this species being impacted upon by the proposed development is negligible.
9. No further survey is considered necessary in support of this conclusion.

References

English Nature (2001) Great Crested Newt Mitigation Guidelines.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143-155.

Natural England (2013) Standing Advice Species Sheet: Great crested newts
<http://publications.naturalengland.org.uk/publication/810429?category=30014>

14.2 Barn Owl Scoping Assessment & Report



Barn Owl Scoping Assessment & Report

Land at Chidswell, Dewsbury

Report reference: R-3280-02

April 2018

Report Title:	Barn Owl Scoping Assessment & Report Land at Chidswell, Dewsbury
Report Reference:	R-3280-02
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The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report does not constitute legal advice.



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Introduction

1. Site development and fragmentation or loss of habitat are key issues with regard to impacts upon Barn Owl *Tyto alba* in Britain and surveys are required to identify breeding, roosting and foraging sites where developments are proposed.
2. The scoping survey visit to the site at Chidswell, Dewsbury was undertaken on 26th March 2018. Weather conditions were good with clear, sunny, bright conditions and a light breeze, cool early (5°C) becoming milder by midday (11°C).
3. The site within the red-line boundary (80-120m altitude) comprises large open areas of arable farmland and some grassland, with larger field sizes in the southern section east of Chidswell, and smaller fields in the northern section east of the A653 Leeds Road. Field boundaries include fence-lines and few, species poor hedgerows within the southern section, with a line of mature trees and scrub along the watercourse on the south-east boundary.
4. Hedgerows of greater structure, with tree-lines including mature trees and scrub, are present along the two watercourses in the northern section of the site. Two broad-leaved woodlands border the site, Dum Wood in the north-east and Dogloitch Wood in the south-east, with arable farmland continuing to the east outside the red-line boundary towards Hey Beck.
5. The site is bordered by residential housing along the western and northern boundaries, with further open arable farmland to the south. Outside the red-line boundary, Chidswell Farm and Windsor Farm border the site in the south-west and Lees House Farm in the west. There is one small brick-built structure, an old generator building, c.300m north-east of Chidswell Farm.

Methodology

6. Survey was undertaken by David Pearce, an experienced consultant ornithologist with over 14 years professional experience undertaking ornithological research, bird surveys and monitoring, site and species evaluation and providing advice on mitigation and habitat enhancement for birds throughout the United Kingdom.
7. An intensive walkover survey of the site was made to systematically search, map and assess potential Barn Owl breeding and roosting sites within the red-line boundary. The walkover was undertaken while trees were still leafless to enable trees with suspected cavities to be located, assessed and checked.
8. Trees with a trunk diameter less than 45cm were disregarded as these are unsuitable, being too small for access by this species. The site was covered from access tracks, public footpaths and field margins. Farm buildings were also assessed for potential to

support breeding or roosting by Barn Owl. In addition, trees within the western edge of Dum Wood and Dogloitch Wood adjacent to the site, were also assessed.

9. Survey methodology followed that outlined by Gilbert, Gibbons & Evans (1998), Hardey et al. (2009), Shawyer (2011) and the Barn Owl Trust (2012). Whilst undertaking the scoping survey, bird species present within the site red-line boundary were also listed, these are presented in Table 1 and include current conservation status. A key to conservation status of birds recorded is presented in Table 2.

Background Information

10. The Barn Owl is protected by law under Schedule 1 of the Wildlife and Countryside Act (1981) as amended, which provides special protection at all times. As such, the Barn Owl is one of a number of protected species in the United Kingdom whose presence must be given high nature conservation priority and special legal protection when a potential development is being considered (Shawyer 2011).
11. Barn Owl was moved from the amber list to the green list in the fourth major review of the status of birds occurring in the United Kingdom, Channel Islands and the Isle of Man – Birds of Conservation Concern 4 (BoCC4) (Eaton et al. 2015). However, this does not denote any change in the U.K. population level and the species remains on the list of European Birds of Conservation Concern. Numbers declined markedly during the twentieth century and the current population estimate is of 4,000 pairs in the United Kingdom (Musgrove et al. 2013). Declines are attributed to a combination of reasons, including, a reduction in food supply (mainly voles, shrews, mice and rats) through loss of unimproved and rough grassland, loss of hedgerows, habitat loss due to urbanisation and development and the loss of nest and roost sites and also mortality from road casualties (Barn Owl Trust 2012).
12. Barn Owls are found in a variety of open farmland habitats in Britain, with over 90% of breeding sites below 150m altitude. They may defend the immediate area around the nest (the nesting territory) and during the breeding season forage up to a kilometre from the nest: an area of up to 350 hectares. Outside the breeding season birds can forage up to three kilometres, occasionally five kilometres, from their nest site, which equates to a home range size of up to 5,000 hectares. Barn Owls nest in large holes, predominantly those found in the interiors of buildings, large tree cavities – most often in old trees, bale stacks and rock fissures, as well as nest boxes, with dry, dark nest sites preferred (Hardey et al. 2009). They show a very high degree of nest site fidelity and a similar degree of fidelity to their mates, for as long as both survive, the typical lifespan of birds that survive their first year being four years (Barn Owl Trust 2012).
13. The breeding cycle is especially long, attributed mainly to the prolonged fledging period of young which can take about 67 days (9-10 weeks). When prey is freely

available and the climate relatively mild, courtship normally begins in February and March, eggs are laid in April or early May and following incubation the first chicks usually hatch during the first half of June, which in most years coincides with rising vole numbers. By mid- July young are half grown and most fledge in mid to late August when Field Vole *Microtus agrestis* numbers are reaching their seasonal peak. By mid-to late December most young are independent of their parents and disperse, firstly to sites nearby and then further afield. Barn Owls will often breed in their first year at between ten and 11 months of age, although males will sometimes not breed until their second year (Shawyer 1998).

Records

14. Results of a Preliminary Ecological Appraisal (PEA) produced by White Young Green (WYG) in December 2016, and including an ecological record search produced by the West Yorkshire Ecology Service for land at Chidswell Farm, were supplied prior to the Barn Owl scoping survey visit on 26th March 2018.
15. The record search did not include any Barn Owl records within two kilometres of the site.
16. During the initial Phase 1 Survey (WYG June 2011) numerous bird species were recorded on site but no Barn Owls were recorded.
17. The farmer at Chidswell Farm stated that he had not observed Barn Owl around the farm buildings or in close proximity to the farm, but was aware of Barn Owl being recorded on another farm landholding (unspecified) towards Ardsley Reservoir c.2-3km to the north-east.

Results

18. The site within the red-line boundary comprises mainly arable farmland with relatively poor field margins, hedgerows which vary in density and structure, some mature trees and no substantial areas of rough grassland. With regard to Barn Owl this type of habitat is often deficient in prey, lacks suitable nesting and roosting sites and consequently supports a very low population density or absence of this species.
19. Assessment for potential Barn Owl breeding and roosting sites throughout the site found no trees with suitable cavities along field boundaries or within the edges of Dum Wood and Dogloitch Wood for this species. Although mature trees, including Oak *Quercus spp.*, are present on site, many are less than 45cm in diameter with no cavities, whilst larger trees with cavities evident were found to be unsuitable for Barn Owl as the cavities or fissures were too small.

20. There is one small brick-built structure (flat-roofed old generator building) within 300m of Chidswell Farm, but this has no visible holes within the exterior brickwork for access and is unsuitable for use by Barn Owl, either for roosting or breeding.
21. Farm buildings at Chidswell Farm and Windsor Farm, include both new pre-fabricated buildings mainly to house stock and also some old stone storage buildings. The buildings were assessed and found to be unsuitable for roosting or breeding by Barn Owl.
22. At Lees House Farm, north of Chidswell, the large stone building facing the site appears to be in the process of renovation/conversion and is unsuitable for breeding or roosting by Barn Owl.
23. No Barn Owl boxes were found to be present within the farm areas (outside the red-line boundary) or within the site red-line boundary. The presence of boxes often indicates that this species has been recorded locally or bred previously, with boxes erected to encourage this species where natural nest-sites such as tree cavities are lacking and where suitable foraging opportunities are present.

Evaluation

24. Overall, the scoping survey visit to assess potential Barn Owl breeding and roosting sites within the red-line boundary, and within the farms located in the south-west of the site (outside the red-line boundary) found that the Chidswell site is of very low potential to support breeding or roosting by this species.
25. This is informed by several factors in combination, including the lack of recent records of Barn Owl locally, the lack of suitable natural nesting sites, lack of Barn Owl boxes and also sub-optimal foraging opportunities within the red-line site boundary.
26. Given these factors, and the relative foraging distance during the breeding season for Barn Owl (in the region of one kilometre from the nest site), it is not considered necessary to undertake further surveys on site during spring or summer 2018 for this species.

Other Bird Species Recorded - Barn Owl Scoping Survey (26th March 2018)

Table 1. List of Bird Species Recorded & Conservation Status

Chidswell, Dewsbury Barn Owl Scoping Visit 26/03/18		BTO Species Code	Schedule 1 Species	Rare Breeding Birds	UK BAP Species	European Red List	Global Red List	Annex 1 Species	Scientific Name
Bird Species	Systematic Order follows British Ornithologists Union (BOU 2018)								
1	Grey Partridge	P.			UK				<i>Perdix perdix</i>
2	Lapwing	L.			UK	VU	NT		<i>Vanellus vanellus</i>
3	Skylark	S.			UK				<i>Alauda arvensis</i>
4	Song Thrush	ST			UK				<i>Turdus philomelos</i>
5	Mistle Thrush	M.							<i>Turdus viscivorus</i>
6	House Sparrow	HS			UK				<i>Passer domesticus</i>
7	Linnet	LI			UK				<i>Linaria cannabina</i>
8	Yellowhammer	Y.			UK				<i>Emberiza citrinella</i>
9	Mallard	MA							<i>Anas platyrhynchos</i>
10	Lesser Black-backed Gull	LB							<i>Larus fuscus</i>
11	Kestrel	K.							<i>Falco tinnunculus</i>
12	Dunnock	D.			UK				<i>Prunella modularis</i>
13	Meadow Pipit	MP				NT	NT		<i>Anthus pratensis</i>
14	Buzzard	BZ							<i>Buteo buteo</i>
15	Golden Plover	GP						A1	<i>Pluvialis apricaria</i>
16	Woodpigeon	WP							<i>Columba palumbus</i>
17	Collared Dove	CD							<i>Streptopelia decaocto</i>
18	Great Spotted Woodpecker	GS							<i>Dendrocopos major</i>
19	Jay	J.							<i>Garrulus glandarius</i>
20	Magpie	MG							<i>Pica pica</i>
21	Jackdaw	JD							<i>Coloeus monedula</i>
22	Carrion Crow	C.							<i>Corvus corone</i>
23	Blue Tit	BT							<i>Cyanistes caeruleus</i>
24	Great Tit	GT							<i>Parus major</i>
25	Long-tailed Tit	LT							<i>Aegithalos caudatus</i>
26	Wren	WR							<i>Troglodytes troglodytes</i>
27	Nuthatch	NH							<i>Sitta europaea</i>
28	Blackbird	B.							<i>Turdus merula</i>
29	Robin	R.							<i>Erithacus rubecula</i>
30	Chaffinch	CH							<i>Fringilla coelebs</i>
31	Goldfinch	GO							<i>Carduelis carduelis</i>
32	Pheasant	PH							<i>Phasianus colchicus</i>

Table 2. Key to Conservation Status of Bird Species Recorded on the Barn Owl Scoping Survey

BoCC4 Red Listed Species of Conservation Concern
BoCC4 Amber Listed Species of Conservation Concern
BoCC4 Green Listed Species (not currently considered of conservation concern)
Species Not Assessed by BoCC4
Protected Species Listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)
Species considered by the Rare Breeding Birds Panel (RBBP) (UK) - R = Regular Breeding Birds, O = Occasional Breeding Birds, C = Colonising Species, P = Potential Breeding Birds
UK Biodiversity Action Plan (UK BAP) Priority Species in England (UK)
International Union for Conservation of Nature (IUCN) European Red List (2015) VU = Vulnerable (Globally Threatened), NT = Near Threatened, (all other species = Least Concern)
IUCN Global Red List VU = Vulnerable (Globally Threatened), NT = Near Threatened, (all other species = Least Concern)
Species Listed in Annex 1 of the European Union (EU) Wild Birds Directive 2009 (A1)

References

- Barn Owl Trust 2012. *Barn Owl Conservation Handbook*. Pelagic Publishing, Exeter.
- Eaton, M.A., Aebischer, N.A., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. & Gregory, R.D. 2015. Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. *British Birds* 108: 708 - 746.
- Gilbert, G., Gibbons, D.W. & Evans, J. 1998. *Bird Monitoring Methods, a manual of techniques for key U.K. species*. RSPB, BTO, WWT, JNCC, ITE & Seabird Group.
- Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. 2009. *Raptors: A Field Guide for Surveyors and Monitoring 2nd edition*. The Stationery Office, Edinburgh.
- Musgrove, A., Aebischer, N., Eaton, M., Hearn, R., Newson, S., Noble, D., Parsons, M., Risely, K. & Stroud, D. 2013. Population estimates of birds in Great Britain and the United Kingdom. *British Birds*: 106, 64-100.
- Shawyer, C.R. 1998. *The Barn Owl*. Arlequin Press, Wheathampstead.
- Shawyer, C. R. 2011. Barn Owl *Tyto alba* Survey Methodology and Techniques for use in Ecological Assessment: Developing Best Practice in Survey and Reporting. IEEM, Winchester.

Appendix 1

United Kingdom Conservation Status of Birds

The fourth major review of the status of birds occurring in the United Kingdom, Channel Islands and the Isle of Man – Birds of Conservation Concern 4 (BoCC4) (Eaton *et al.* 2015), presents lists of conservation concern based on assessments using objective listing criteria and most recent data. The listing criteria assess global conservation status, historical population decline, recent population decline (numbers and geographical range), European conservation status, rarity, localised distribution, and international importance of populations.

Lists are denoted Red, Amber and Green in a simple 'traffic light' system to provide a single, easily understood measure for each species to convey concern and hence to help set priorities for conservation action. Species are assigned to each list depending upon the scale of population decline and concern which includes breeding and non-breeding populations.

- Red list criteria – Severe population decline (> 50%) over 25 years or longer term.
- Amber list criteria – Moderate population decline (> 25% but < 50%) over 25 years or longer term.
- Green list criteria – Species not currently considered of conservation concern.

The review concerns native bird species only and not those introduced to the United Kingdom by humans, whether intentionally or accidentally. Populations of non-native bird species are not considered of conservation value, indeed introduced species can be harmful to the natural environment (Eaton *et al.* 2015). These species are therefore not assessed for conservation attention and termed 'not assessed'.

Summary of Relevant Legislation with Regard to Birds

The primary legislation affecting wild birds in England and Wales is the Wildlife & Countryside Act (1981) as amended. The basic principle of this act is that all wild birds, their nests, and eggs are protected by law and some rare species are afforded additional protection from disturbance during the breeding season (Schedule 1.). The term wild bird is defined as any bird of a species which is resident in, or a visitor to, the European territory of any Member State, in a wild state. Game birds are not included in this definition (except in certain sections of the Act) but are covered by the Game Acts which give protection in the close season.

The Wildlife & Countryside Act (1981) states that 'it is an offence, with certain exceptions, to:

1. intentionally kill, injure or take any wild bird.
2. intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.
3. intentionally take or destroy the egg of any wild bird.
4. have in one's possession or control any wild bird (dead or alive), part of a wild bird or egg of a wild bird which has been taken in contravention of the Act, the Protection of Birds Act 1958 or the law of any EU Member State (which implements the EU Birds Directive 1979).

5. intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building or is in, on or near a nest with eggs or young; or disturb the dependant young of such a bird.
6. have in one's possession or control any birds of a species listed on Schedule 4 of the Act, unless registered and ringed in accordance with the Secretary of State's regulations.

Rare Breeding Birds in the United Kingdom

The U.K. Rare Breeding Bird Panel (RBBP) (www.rbbp.org.uk) collates data on over 160 species of rare breeding birds and scarcer non-native breeding species, and ensures data are archived properly and are used for conservation. This informs understanding of the status, distribution and population trends of the rarest breeding birds, too rare to monitor in any other way, and also species introduced to the U.K. Archived records form the definitive historical record of rare breeding birds in the U.K. Breeding species are categorised as – regular breeder, occasional breeder, colonising and potential breeder.

United Kingdom Biodiversity Action Plan Bird (UK BAP) Species

United Kingdom Biodiversity Action Plan (U.K. BAP) Bird Species (jncc.defra.gov.uk/uk_bap_priority_bird_species) are those identified by the Joint Nature Conservation Committee (JNCC) as being the most threatened and requiring conservation action under the U.K. Biodiversity Action Plan and included on a list of priority bird species, initially created between 1995 and 1999, and subsequently updated in response to the Species and Habitats Review Report published in 2007. Original species on the U.K. BAP list (1995-1999) have a Species Action Plan (SAP) which provides details of relevant conservation information and action. Following devolution, the U.K. BAP has recently (July 2012) been succeeded by the U.K. Post-2010 Biodiversity Framework which is focused at a country-level (England, Wales, Scotland & Northern Ireland) rather than at a U.K. level, with the list of priority bird species remaining an important reference source for conservation of individual bird species and also for conservation of bird biodiversity within a specified area or site. U.K. BAP species are identified in order to guide decision-makers, such as local planning authorities and regional authorities, in their duty to have regard to the conservation of bird biodiversity.

IUCN Red List Status (European Red List & Global Red List)

Birdlife International (the official International Union for Conservation of Nature (IUCN) Red List authority for birds) determines the global conservation status of birds (www.iucn.org/theme/species/birds). The IUCN red list is used by government agencies, wildlife departments, conservation-related non-governmental organisations (NGOs), natural resource planners, educational organisations, students, and the business community. It is crucial to identify bird species requiring targeted recovery efforts, but also for focusing on conservation to identify key sites and habitats that need conserving.

EU Biodiversity Legislation

Additional protection for birds is also provided to species listed within the European Union (EU) Wild Birds Directive 2009/147/EC (ec.europa.eu/environment/nature/legislation/birdsdirective & jncc.defra.gov.uk). This imposes strict legal obligations on EU member states to maintain

populations of naturally occurring wild birds at levels corresponding to ecological requirements and to preserve a sufficient diversity and areas of habitats for their conservation. Bird species mentioned in Annex I (194 species and sub-species (races)) are particularly threatened and form the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution.

14.3 Ornithological Summary (Breeding Birds)



Ornithological Summary (Breeding Birds)

Land at Chidswell, Dewsbury

Report reference: R-3280-03

October 2018

Report Title:	Ornithological Summary (Breeding Birds) Land at Chidswell, Dewsbury
Report Reference:	R-3280-03
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Date	22.10.18

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Introduction

1. The site (c.112 hectares) within the red-line boundary (80-120m altitude) comprises large open areas of arable farmland and some grassland, with larger field sizes in the southern section east of Chidswell, and smaller fields in the northern section east of the A653 Leeds Road.
2. Field boundaries include fence-lines and few, species poor hedgerows within the southern section, with a line of mature trees and scrub along the watercourse on the south-east boundary. Hedgerows of greater structure, with tree-lines including mature trees and scrub, are present along the two watercourses in the northern section of the site. Two broad-leaved woodlands border the site, Dum Wood in the north-east and Dogloitch Wood in the south-east, with arable farmland continuing outside the red-line boundary to the east towards Hey Beck. There is one small brick-built structure on site, an old generator building, c.300m north-east of Chidswell Farm.
3. The site is bordered by residential housing along the western and northern boundaries, with further open arable farmland to the south. Outside the red-line boundary, Chidswell Farm and Windsor Farm border the site in the south-west and Lees House Farm in the west.

Method

4. Breeding bird surveys in 2018 were undertaken by Chris Bradshaw, an experienced associate ornithologist.
5. Amended visit Common Birds Census (CBC) territory mapping methodology was used to record breeding bird activity on site. Registrations of all bird species observed within the site red-line boundary or overflying the site and heard singing and/or calling were entered onto field survey maps using standard British Trust for Ornithology (BTO) species and activity codes. The site was walked to less than 100m of every point within the red-line boundary and the survey route was reversed accordingly on each visit to alleviate recording bias. Bird registrations within peripheral areas of habitat were also incorporated.
6. Three diurnal breeding bird survey visits were made to the Chidswell site at Dewsbury, West Yorkshire on 18th April, 21st May and 22nd June 2018. Weather conditions and visibility were good on all visits, sunny and warm (13-18°C) with a light southerly wind in April, cloudy, cool early then warmer later (8-16°C) with a light north-west wind in May and sunny, warm (12-15°C) with a light north-west wind in June. There was no rain on any of the three survey visits.

Results

7. Analysis of data from diurnal breeding bird surveys undertaken from April to June 2018 found that a total of 50 species was recorded (Tables 1, 2 & 3). Of these, 43 species showed evidence of breeding behaviour, such as males singing within breeding territories, birds giving territorial calls, adults observed with food for young or adults observed with recently fledged young or in family groups.
8. Important breeding bird species recorded on site are those included as red listed (severe population decline over 25 years/longer term) and amber listed species of conservation concern (moderate population decline over 25 years/longer term) in Birds of Conservation Concern 4 (BoCC4) (Eaton et al 2015). Systematic bird species order follows the recently updated British Ornithologists Union (BOU) British List (McInerney et al. 2018). Further information on bird conservation status and bird legislation relative to the species recorded is given in Appendix 1.

Table 1 Number and Conservation Status of Bird Species Recorded, April to June 2018

TOTAL NUMBER OF BIRD SPECIES RECORDED	50
BoCC4 Red Listed Species of Conservation Concern	9
BoCC4 Amber Listed Species of Conservation Concern	11
BoCC4 Green Listed Species (not currently considered of conservation concern)	27
Species Not Assessed by BoCC4	3
Protected Species Listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)	0
Species considered by the Rare Breeding Birds Panel (RBBP) (UK) - R = Regular Breeding Birds, O = Occasional Breeding Birds, C = Colonising Species, P = Potential Breeding Birds	0
UK Biodiversity Action Plan (UK BAP) Priority Species in England (UK)	12
International Union for Conservation of Nature (IUCN) European Red List (2015) VU = Vulnerable (Globally Threatened), NT = Near Threatened, (all other species = Least Concern)	3
IUCN Global Red List VU = Vulnerable (Globally Threatened), NT = Near Threatened, (all other species = Least Concern)	2
Species Listed in Annex 1 of the European Union (EU) Wild Birds Directive 2009 (A1)	0

Table 2 Red & Amber Listed Species in Systematic Order of Conservation Concern, April to June 2018

Chidswell, Dewsbury BBS April - June 2018		BTO Species Code	Schedule 1 Species	Rare Breeding Birds	UK BAP Species	European Red List	Global Red List	Annex 1 Species	Scientific Name	Estimate of Breeding Pairs or Breeding Territories
Bird Species Systematic Order follows British Ornithologists Union (BOU 2018)										
1	Lapwing	L.			UK	VU	NT		<i>Vanellus vanellus</i>	1 pair
2	Herring Gull	HG			UK	NT			<i>Larus argentatus</i>	0
3	Skylark	S.			UK				<i>Alauda arvensis</i>	12 territories
4	Starling	SG			UK				<i>Sturnus vulgaris</i>	4 pairs
5	Song Thrush	ST			UK				<i>Turdus philomelos</i>	6 territories
6	House Sparrow	HS			UK				<i>Passer domesticus</i>	18 pairs
7	Yellow Wagtail	YW			UK				<i>Motacilla flava</i>	1 territory
8	Linnet	LI			UK				<i>Linaria cannabina</i>	8 territories
9	Yellowhammer	Y.			UK				<i>Emberiza citrinella</i>	16 territories
10	Mallard	MA							<i>Anas platyrhynchos</i>	1 pair
11	Black-headed Gull	BH							<i>Chroicocephalus ridibundus</i>	0
12	Lesser Black-backed Gull	LB							<i>Larus fuscus</i>	0
13	Stock Dove	SD							<i>Columba oenas</i>	3 territories
14	Kestrel	K.							<i>Falco tinnunculus</i>	1 pair
15	House Martin	HM							<i>Delichon urbicum</i>	2 pairs
16	Willow Warbler	WW							<i>Phylloscopus trochilus</i>	0
17	Dunnock	D.			UK				<i>Prunella modularis</i>	16 territories
18	Meadow Pipit	MP				NT	NT		<i>Anthus pratensis</i>	0
19	Bullfinch	BF			UK				<i>Pyrrhula pyrrhula</i>	1 territory
20	Reed Bunting	RB			UK				<i>Emberiza schoeniclus</i>	1 territory

Table 3 Green Listed & Not Assessed Species in Systematic Order of Conservation Concern, April to June 2018

Chidswell, Dewsbury BBS April - June 2018		BTO Species Code	Schedule 1 Species	Rare Breeding Birds	UK BAP Species	European Red List	Global Red List	Annex 1 Species	Scientific Name	Estimate of Breeding Pairs or Breeding Territories
Bird Species Systematic Order follows British Ornithologists Union (BOU 2018)										
21	Sparrowhawk	SH							<i>Accipiter nisus</i>	1 pair
22	Buzzard	BZ							<i>Buteo buteo</i>	0
23	Woodpigeon	WP							<i>Columba palumbus</i>	< 20 pairs
24	Collared Dove	CD							<i>Streptopelia decaocto</i>	1 pair
25	Great Spotted Woodpecker	GS							<i>Dendrocopos major</i>	1 pair
26	Jay	J.							<i>Garrulus glandarius</i>	1 territory
27	Magpie	MG							<i>Pica pica</i>	4 territories
28	Carrion Crow	C.							<i>Corvus corone</i>	3 territories
29	Coal Tit	CT							<i>Pariparus ater</i>	1 territory
30	Blue Tit	BT							<i>Cyanistes caeruleus</i>	8 territories
31	Great Tit	GT							<i>Parus major</i>	10 territories
32	Sand Martin	SM							<i>Riparia riparia</i>	0
33	Swallow	SL							<i>Hirundo rustica</i>	2 territories
34	Long-tailed Tit	LT							<i>Aegithalos caudatus</i>	3 territories
35	Chiffchaff	CC							<i>Phylloscopus collybita</i>	2 territories
36	Blackcap	BC							<i>Sylvia atricapilla</i>	11 territories
37	Lesser Whitethroat	LW							<i>Sylvia curruca</i>	1 territory
38	Whitethroat	WH							<i>Sylvia communis</i>	10 territories
39	Wren	WR							<i>Troglodytes troglodytes</i>	< 30 territories
40	Nuthatch	NH							<i>Sitta europaea</i>	1 territory
41	Treecreeper	TC							<i>Certhia familiaris</i>	1 territory
42	Blackbird	B.							<i>Turdus merula</i>	> 30 pairs
43	Robin	R.							<i>Erithacus rubecula</i>	18 territories
44	Pied Wagtail	PW							<i>Motacilla alba</i>	1 pair
45	Chaffinch	CH							<i>Fringilla coelebs</i>	23 territories
46	Greenfinch	GR							<i>Chloris chloris</i>	3 pairs
47	Goldfinch	GO							<i>Carduelis carduelis</i>	5 pairs
48	Red-legged Partridge	RL							<i>Alectoris rufa</i>	1 territory
49	Pheasant	PH							<i>Phasianus colchicus</i>	4 br. females
50	Little Owl	LO							<i>Athene noctua</i>	1 pair

9. Of the 43 species that showed evidence of breeding behaviour, eight were red listed species of conservation concern, seven amber listed species of conservation concern (Table 2) and 25 were green listed species not currently considered of conservation concern (Table 3) by Eaton et al. (2015) in Birds of Conservation Concern 4 (BoCC4). Three of the breeding species recorded are not assessed by BoCC4 (Table 3). No

Schedule 1 protected species or rare breeding birds were recorded breeding within the site red-line boundary during breeding bird survey visits undertaken from April to June 2018.

10. Key breeding bird species recorded on site are those which are red listed and include several farmland bird species, populations of which have shown trends for long-term decline during the past 40 years. Key breeding bird species included important populations of Skylark *Alauda arvensis* (12 territories) and Yellowhammer *Emberiza citrinella* (16 territories). Skylark breeding territories were associated with open fields of arable farmland, particularly within the southern half of the site, whilst Yellowhammer territories were associated with hedgerows and tree-lines, which form the majority of field boundaries within the site red-line boundary. Between 1970 and 2015, Skylark have declined by 59% and Yellowhammer by 56% in the UK (Hayhow et al. 2017), declines largely attributed to loss of habitat and changes in modern farming practice, which have reduced breeding and foraging opportunities and also breeding success.
11. Other key red listed breeding species recorded included, House Sparrow *Passer domesticus* (18 pairs – residential housing and farmsteads), Linnet *Linaria cannabina* (8 territories – field boundary hedgerows), Song Thrush *Turdus philomelos* (6 territories – field boundary hedgerows and woodland edge), Starling *Sturnus vulgaris* (4 pairs – residential housing), Yellow Wagtail *Motacilla flava* (1 territory – arable farmland) and Lapwing *Vanellus vanellus* (1 pair – successful (1 juv.) arable farmland, south of the southern site boundary). The latter six species have declined variably, between 50% and 81% in the UK during the period 1970-2015 (Hayhow et al. 2017).
12. Of the amber listed breeding bird species recorded, the most abundant was Dunnock *Prunella modularis* (16 territories), chiefly associated with field boundary hedgerows and relatively widespread throughout the site. Stock Dove *Columba oenas* (3 territories) was recorded from woodland edge in Dogloitch Wood and Dum Wood and also from farm buildings at Chidswell Farm. Other amber listed breeding species included, Mallard *Anas platyrhynchos* (1 pair – watercourse in northern section), Kestrel *Falco tinnunculus* (1 pair – farmland/woodland edge), House Martin *Delichon urbicum* (2 pairs – residential housing), Bullfinch *Pyrrhula pyrrhula* (1 territory – hedgerow tree-line) and Reed Bunting *Emberiza schoeniclus* (1 territory – watercourse in northern section). Trends for breeding populations of Mallard and Stock Dove in the UK during the period 1970-2015 show respective increases of 100% and 113%, whilst the other five species show varying declines between 29% and 50% (Hayhow et al. 2017).
13. More common, green listed breeding bird species, were well represented throughout the site. The most abundant were Blackbird *Turdus merula* (> 30 pairs), Wren *Troglodytes troglodytes* (< 30 territories) and Chaffinch *Fringilla coelebs* (23 territories), all associated with hedgerows and woodland edge habitat. Summer migrant warblers were also well represented, with Blackcap *Sylvia atricapilla* (11 territories), Whitethroat *Sylvia communis* (10 territories), Chiffchaff *Phylloscopus collybita* (2

territories) and Lesser Whitethroat *Sylvia curruca* (1 territory). Blackcap were associated with hedgerows and woodland edge habitat, Whitethroat with hedgerows and scrub, Chiffchaff with woodland and Lesser Whitethroat with hedgerows. Other green listed breeding bird species included Robin *Erithacus rubecula* (18 territories), Great Tit *Parus major* (10 territories) and Blue Tit *Cyanistes caeruleus* (8 territories), all associated with hedgerows, trees and woodland edge habitat.

14. Breeding species not assessed by BoCC4 included Red-legged Partridge *Alectoris rufa* (1 territory), Pheasant *Phasianus colchicus* (4 breeding females) and Little Owl *Athene noctua* (1 pair). Red-legged Partridge and Pheasant were associated with field margins alongside hedgerows and Little Owl with outbuildings at Lees House Farm.
15. Seven species recorded did not breed within the site, Herring Gull *Larus argentatus*, Black-headed Gull *Chroicocephalus ridibundus*, Lesser Black-backed Gull *Larus fuscus* and Buzzard *Buteo buteo* were only recorded over-flying the site, whilst Willow Warbler *Phylloscopus trochilus* (1, singing bird April visit only), Meadow Pipit *Anthus pratensis* (17, April visit) and Sand Martin *Riparia riparia* (3 flying north, June) were only recorded as passage migrants. These seven species do not form part of the breeding bird assemblage within the site red-line boundary.
16. Outside the breeding bird survey visits, and on a separate diurnal ecological survey on 9th July 2018, a single adult Barn Owl *Tyto alba* (Schedule 1, green listed) was observed generally flying south-east, foraging over an arable field in the northern section of the site by ecologist Chris Shaw (Brooks Ecological). This was perhaps a bird from a local pair breeding elsewhere outside the site red-line boundary.

Evaluation

17. Results of the three diurnal breeding bird surveys undertaken at the Chidswell site during the period April to June 2018 revealed that the site supports a large percentage of breeding bird species, with 43 out of the 50 species recorded (86%) showing evidence of breeding behaviour. This includes territories and breeding pairs of bird species within peripheral habitats bordering and overlapping the site, including the woodland edge of Dogloitch Wood and Dum Wood, adjacent farmland, farmsteads adjacent to the south-west corner and also the residential housing and gardens along the western and northern boundaries of the site.
18. Breeding bird species were found to be widespread throughout the site, particularly within the northern half and the eastern half, with hedgerows and tree-lines within the site and the woodland edge of Dum Wood and Dogloitch Wood (adjacent to the site red-line boundary) supporting the highest abundance and distribution of breeding bird species. Overall, fewer breeding territories or breeding pairs of bird

species of conservation concern were recorded in habitat within land parcels along the western margin of the site, between Leeds Road and Dum Wood, immediately east of residential housing along Leeds Road and east of Chidswell, Windsor Farm and Chidswell Farm. The breeding bird species assemblage within the site includes an important breeding population of Yellowhammer, which were associated with hedgerows and tree-lines. In addition, an important breeding population of Skylark is present, associated with the open fields of arable farmland. The incidental record of Barn Owl in early July indicates that the site is occasionally used for foraging by this species, but no suitable breeding or roosting sites were located within the site red-line boundary on the scoping survey for this species on 26th March 2018.

19. In assigning ornithological value to the site it is important to recognise the high numbers of breeding birds present in habitats within the site red-line boundary and in peripheral habitats adjoining the site. Alongside breeding and foraging habitat, hedgerows and tree-lines also provide connectivity across the site for birds. These factors combine to produce a relatively high degree of breeding bird diversity and therefore the ornithological value of the site should, overall, be considered at a district level. Any proposed development would compromise bird diversity through loss of breeding and foraging habitat, both locally within the site and, given the breeding populations of species such as Skylark and Yellowhammer recorded on surveys in spring 2018, also at a district level.

Conclusion and Recommendations

20. Given findings of the breeding bird survey undertaken at the Chidswell site in spring 2018, it is considered extremely important to consider avoidance measures which could be put in place or mitigation options within the red-line boundary. These would help to offset impacts of development and enhance bird diversity and could include the following measures.
 - Phased development of land parcels within the site red-line boundary, combined with to creation of 'Skylark plots' (undrilled patches of 16-24 m² in arable fields of winter cereals at two per hectare) locally within surrounding farmland habitat, to reduce impacts of loss of breeding habitat on ground nesting Skylark.
 - Inclusion of meadow grassland habitat within 'green corridors' through any development to provide compensation habitat for breeding Skylark. If managed as meadow grassland and mowed in late summer, this habitat would also provide foraging opportunities for Skylark, Yellowhammer, Linnet, House Sparrow, and for Starling.
 - Retain and enhance existing hedgerows throughout the site and incorporate new planting of areas of mixed trees and shrubs within green corridors, using species such as Hawthorn, Blackthorn and Dogwood, to provide compensation

habitat for breeding Yellowhammer, but importantly also for other breeding bird species, such as Song Thrush and Dunnock.

- Creation of attenuation ponds to provide further breeding and foraging habitat for several bird species, particularly Reed Bunting.
- The measures above would collectively increase foraging opportunities for Barn Owl on site through improving habitat for small mammal prey, e.g. Field Vole.
- Siting Barn Owl boxes, on or within buildings, on the eastern edge of any proposed development adjacent to 'green corridors' and surrounding farmland should be explored.
- Improved breeding and foraging opportunities for some breeding bird species, such as Song Thrush and Dunnock, but also more common species such as Blackbird, Robin and Wren, may result from an increase in garden habitat within areas of residential housing and amenity grassland and new planting of shrubs within 'green corridors'.
- Ensuring that terrace type nest-boxes are sited on all buildings to encourage House Sparrow (entrance hole size 32mm) and also single nest-boxes on all buildings for Starling (entrance hole size 45mm) is extremely important to enhance local breeding populations of these two species.
- Consider options for siting large-hole entrance nest-boxes (150mm) for Stock Dove within the woodland edge of Dum Wood and Dogloitch Wood to increase nest site options for this species.
- Incorporate nest-boxes (including metal protection plates around entrance holes to prevent predation) for Blue Tit (25mm entrance hole) and Great Tit (28mm entrance hole) within the woodland edge of Dum Wood and Dogloitch Wood, but also within areas of existing trees incorporated into 'green corridors'.
- Creating habitat buffer zones, including screening hedgerows, tree-lines, meadow grassland and 'wild areas' between buildings and green corridors, Dum Wood and Dogloitch Wood and also between adjacent farmland will assist in enhancing bird biodiversity and help to reduce impacts of any development on bird species present within the site. Tree species should include Hawthorn, Blackthorn, Alder, Hazel and Field Maple and will be important to provide future breeding, foraging and roosting habitat for birds, whilst also improving connectivity through the site.
- Any preliminary works on site prior to construction commencing, such as groundworks and unavoidable removal of areas of scrub, should be completed during the period September to February to avoid disturbance to breeding birds between March and August. Should any of these works be undertaken after February, a site breeding bird check should be made by a qualified ornithologist to ensure that no active nests of breeding birds are present before works commence.

Appendix 1

United Kingdom Conservation Status of Birds

The fourth major review of the status of birds occurring in the United Kingdom, Channel Islands and the Isle of Man – Birds of Conservation Concern 4 (BoCC4) (Eaton *et al.* 2015), presents lists of conservation concern based on assessments using objective listing criteria and most recent data. The listing criteria assess global conservation status, historical population decline, recent population decline (numbers and geographical range), European conservation status, rarity, localised distribution, and international importance of populations.

Lists are denoted Red, Amber and Green in a simple 'traffic light' system to provide a single, easily understood measure for each species to convey concern and hence to help set priorities for conservation action. Species are assigned to each list depending upon the scale of population decline and concern which includes breeding and non-breeding populations.

- Red list criteria – Severe population decline (> 50%) over 25 years or longer term.
- Amber list criteria – Moderate population decline (> 25% but < 50%) over 25 years or longer term.
- Green list criteria – Species not currently considered of conservation concern.

The review concerns native bird species only and not those introduced to the United Kingdom by humans, whether intentionally or accidentally. Populations of non-native bird species are not considered of conservation value, indeed introduced species can be harmful to the natural environment (Eaton *et al.* 2015). These species are therefore not assessed for conservation attention and termed 'not assessed'.

Summary of Relevant Legislation with Regard to Birds

The primary legislation affecting wild birds in England and Wales is the Wildlife & Countryside Act (1981) as amended. The basic principle of this act is that all wild birds, their nests, and eggs are protected by law and some rare species are afforded additional protection from disturbance during the breeding season (Schedule 1.). The term wild bird is defined as any bird of a species which is resident in, or a visitor to, the European territory of any Member State, in a wild state. Game birds are not included in this definition (except in certain sections of the Act) but are covered by the Game Acts which give protection in the close season.

The Wildlife & Countryside Act (1981) states that 'it is an offence, with certain exceptions, to:

1. intentionally kill, injure or take any wild bird.
2. intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.
3. intentionally take or destroy the egg of any wild bird.
4. have in one's possession or control any wild bird (dead or alive), part of a wild bird or egg of a wild bird which has been taken in contravention of the Act, the Protection of Birds Act 1958 or the law of any EU Member State (which implements the EU Birds Directive 1979).
5. intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building or is in, on or near a nest with eggs or young; or disturb the dependant young of such a bird.
6. have in one's possession or control any birds of a species listed on Schedule 4 of the Act, unless registered and ringed in accordance with the Secretary of State's regulations.

Rare Breeding Birds in the United Kingdom

The U.K. Rare Breeding Bird Panel (RBBP) (www.rbbp.org.uk) collates data on over 160 species of rare breeding birds and scarcer non-native breeding species, and ensures data are archived properly and are used for conservation. This informs understanding of the status, distribution and population trends of the rarest breeding birds, too rare to monitor in any other way, and also species introduced to the U.K. Archived records form the definitive historical record of rare breeding birds in the U.K. Breeding species are categorised as – regular breeder, occasional breeder, colonising and potential breeder.

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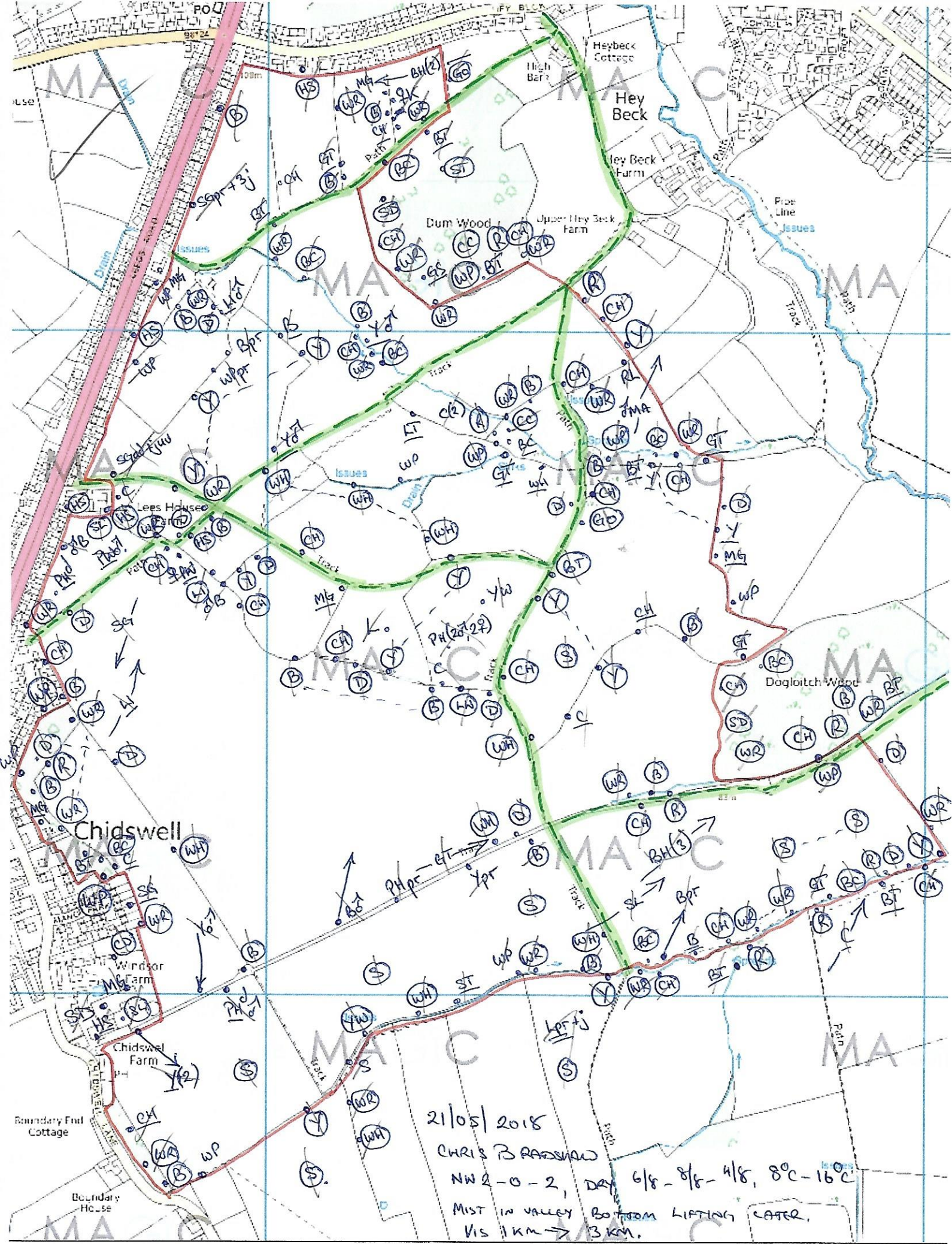
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References

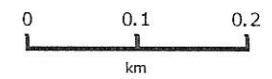
Eaton, M.A., Aebischer, N.A., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. & Gregory, R.D. 2015. Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. *British Birds* 108: 708 - 746.

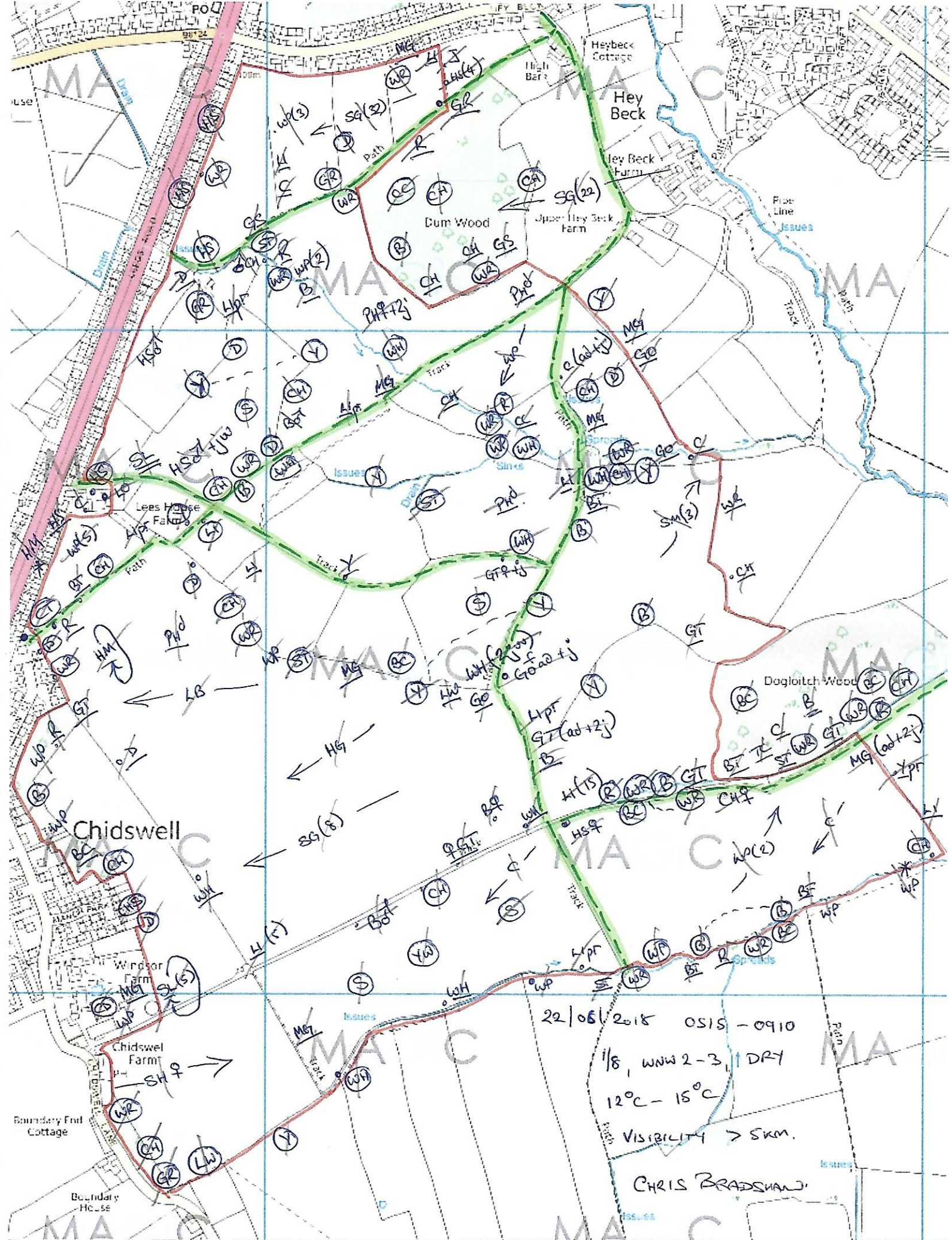
Hayhow D.B., Ausden M.A., Bradbury R.B., Burnell D., Copeland A.I., Crick H.Q.P., Eaton M.A., Frost T., Grice P.V., Hall C., Harris S.J., Morecroft M.D., Noble D.G., Pearce-Higgins J.W., Watts O., Williams J.M. 2017. *The State of UK Birds 2017*. RSPB, BTO, WWT, DAERA, JNCC, NE and NRW, Sandy, Bedfordshire.

McInerney, C.J., Musgrove, A.J., Stoddart, A., Harrop, A.H.J., Dudley, S.P. & The British Ornithologists' Union Records Committee (BOURC). 2018. *The British List: A Checklist of Birds of Britain* (9th edition). *Ibis* 160: 190-240.



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22/06/2018 OS15 - 0910
 1/8, WNW 2-3, DRY
 12°C - 15°C
 VISIBILITY > 5KM.
 CHRIS BRADSHAW

14.4 Badger Assessment and Report



Badger Assessment & Report

Land at Chidswell, Dewsbury

Report reference: R-3280-04
April 2018

Report Title:	Badger Assessment & Report Land at Chidswell, Dewsbury
Report Reference:	R-3280-04
Written by:	Christopher Shaw BSc (Hons) MCIEEM Senior Ecologist
Technical Review:	Peter Brooks BSc (Hons), MA, MCIEEM, CEnv Managing Director
QA Review:	Micah Duckworth BA (Hons) MSc. Biodiversity Manager
Approved for Issue:	Peter Brooks BSc (Hons), MA, MCIEEM, CEnv Managing Director
Date:	16.04.18

Summary Statement

No evidence of badger activity was found anywhere on Site, and the current likely absence of this species can be reasonably concluded.

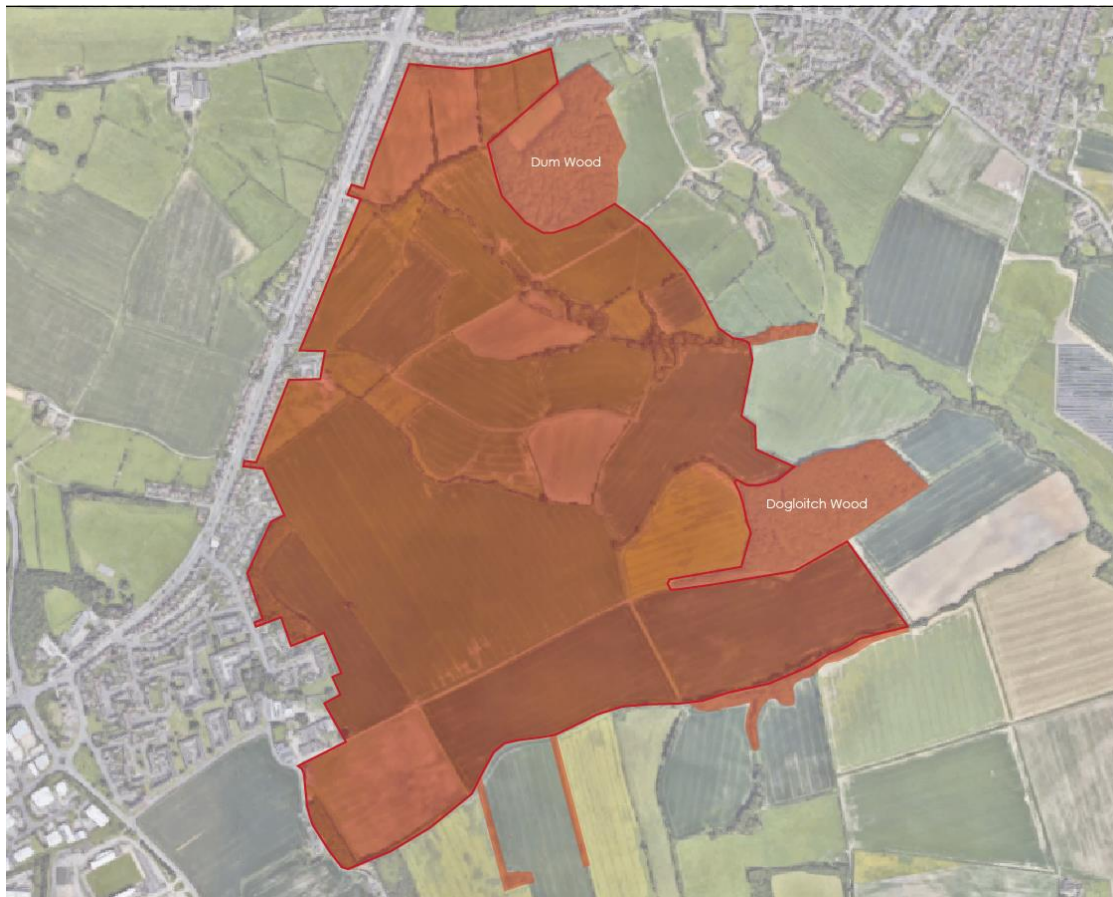
As a precautionary measure, an updating badger check should be carried out prior to development commencing, to guard against the risk of this species moving into the site in the intervening period.

This report contains sensitive information about the location of badgers and must not be placed in the public domain - to guard against badger persecution.

Introduction

1. Subsequent to recommendations set out in the WYG, December 2016, Extended Phase 1 Habitat Survey Report (Ref. A054074), Brooks Ecological Ltd was commissioned to carry out a Badger Survey and Assessment at the Site in Chidswell.
2. The survey covered all land within the red line boundary, as well as any other suitable badger habitat within close proximity, that was accessible at the time of the Site visit. Figure 1 below outlines the extent of the survey.

Figure 1 Survey Extent denoted in red



Legal Background

3. Badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett.

Method

4. A badger survey was carried out on the 9th March 2018 by an experienced ecologist with significant experience of badger survey and mitigation, and who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
5. The Site was thoroughly searched for evidence of badger activity by looking for the following signs:
 - Badger setts;
 - Badger latrines or dung pits;
 - Badger snuffle holes and evidence of foraging;
 - Badger paths;
 - Badger footprints in areas of soft mud; and,
 - Badger hairs caught on fencing.
6. Badger setts are assessed and classified according to the level of use and the number of entrance holes - see Box 1, overleaf.

Box 1 Badger setts

Badgers live in social groups called clans and are territorial. Each clan territory can vary considerably in size, from 0.2 sq. km to 1.5 sq. km. The average number of badgers in a clan has been calculated to be six but this number can vary between two and twenty badgers.

In areas with a significant badger population there will be contiguous clans and a well-defined boundary between clan territories will exist, with the badger's scent marking their boundary with areas of dung pits called latrines. In areas with relatively low badger populations, there will be less competition for territory and the amount of territorial markings will be low or even non-existent.

Setts are classified into four ancillary types; main, annexe, subsidiary and outlying, as follows:

Main sett: These are large, well-established setts, normally in continuous use. Each group will use only one main sett and it will form the most likely location for the raising of cubs.

Annexe sett: These setts are usually found in close association with the main sett, and will often be linked to it by a well-worn path. Where a second litter of cubs is born they will be raised in the annexe sett.

Subsidiary sett: Subsidiary setts will usually have five or more holes, although not all of these will be in continuous use.

Outlying sett: These setts are used on an occasional basis and will usually consist of only one to three holes. Soil heaps will generally be smaller than those found associated with the other sett types, indicating a smaller underground structure.

The entrance holes to setts can provide an indication as to the level of use of the sett. Entrance holes can be classified as follows:

Well used: These holes are in regular use and therefore free of debris. They may have been recently excavated.

Partially used: Debris, including leaves, twigs and other vegetation clutter the entrance to these holes, indicating they are not in regular use. The holes can be used after a minimum of clearance.

Disused: A considerable amount of clearance is needed before these holes can be used. The holes may become so blocked that only a depression in the ground is visible where the hole used to be.

Survey Results

7. No current or historic evidence of badgers was found on Site during the walkover survey, with just a small number of rabbit warrens noted along some of the more mature hedge bottoms.
8. No definitive evidence of badger activity was found within accessible land immediately bordering the Site; however, approximately 11 mammal holes - all of a size and shape characteristic of badger - were discovered within a small mound along the wooded southern boundary.
9. No sign of recent activity was noted around any of the holes, and most had accumulated large amounts of leaf litter and other debris. No other evidence of badger activity was noted (such as hairs, latrines or footprints) and it is thought most likely that these holes represent a now disused badger sett.



Figure 2

Indicative location of potential disused badger sett

Figure 3 Images of the suspected disused badger setts



Conclusions & Recommendations

10. No evidence of badger actively was noted on Site, and the current likely absence of this species can be reasonably concluded.
11. However, anecdotal evidence of a large disused badger sett was discovered a short distance off Site to the southeast and the Site continues to provide suitable habitat for this species. As such, there is a risk that badgers may colonise the Site prior to development commencing and a precautionary approach is recommended.
12. An updating badger check should be carried out a couple of months prior to works commencing, so as to confirm the continued likely absence of badger. This could be secured through a standard pre-commencement condition of planning.
13. Should badgers be discovered during this pre-commencement check, there is ample scope within the proposals to create new setts within areas of public open green space, and thus there is no reason to suspect gaining a mitigation licence from Natural England would be anything other than straightforward.

References

Delahay R.J, Brown J.A, Mallinson P.J, Spyvee P.D, Handoll D, Rogers L.M and Cheeseman C.L (2000). The use of marked bait in studies of the territorial organisation of the European Badger (*Meles meles*). *Mammal review* **30** (pg 73-87)

Harris S, Jefferies D, Cheeseman C and Booty C (1994). Problems with Badgers, revised 3rd Edition. RSPCA, ISBN 0-901098-04-3

14.5 Bat Roost Suitability Assessment & Report



Bat Roost Suitability Assessment & Report

Land at Chidswell, Dewsbury

Report reference: R-3280-05

April 2018

Report Title:	Bat Roost Suitability Assessment & Report Land at Chidswell, Dewsbury
Report Reference:	R-3280-05
Written by:	Christopher Shaw BSc (Hons) MCIEEM Senior Ecologist
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QA Review:	Rob Brown BSc (Hons) Seasonal Ecologist
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Summary Statement

Of the trees inspected, the majority have been assessed as being of negligible bat roost suitability and do not require any further survey.

Five individual trees and two woodland blocks have been assessed as containing features with moderate or high bat roost suitability and these will require further survey if they are to be directly impacted upon by development.

Five trees are identified as having Low roost suitability and any works to these specimens should be carried out with care and vigilance, following a Toolbox Talk.

Introduction

1. Subsequent to recommendations set out in the WYG, December 2016, Extended Phase 1 Habitat Survey Report (Ref. A054074), Brooks Ecological Ltd were commissioned to carry out a Bat Roost Suitability Assessment of trees at the Site in Chidsawell.
2. The Site encompasses a large collection of agricultural fields interspersed with scattered hedgerows, tree lined watercourses and areas of young plantation/ buffer woodland. Two mature broadleaved woodlands bound the Site to the east, these being Dum Wood and Dogloitch Wood.

Figure 1 Site boundary with approximate location of trees and woodland



3. Connectivity through the Site, and throughout the wider landscape, is poor with roads and built development regularly interrupting green linear features. The tree lined Hey Beck, which cuts through the northern half of the Site before continuing south-easterly, represents the best potential wildlife corridor, but is severed several hundred metres to the east by the M1.

Box 1 *Legal background*

Bats are afforded full protection under The Wildlife and Countryside Act (1981) plus amendments, and the Conservation of Habitats and Species Regulations 2010. Under these Acts it is an offence among others, to recklessly kill, injure or disturb bats. It is also an offence to destroy or obstruct a roost even if bats are not in occupancy at the time of the action.

There are no defences against contravention of the Conservation of Habitats and Species Regulations 2010 which means that it is important for detailed and well-designed bat surveys to be carried out, prior to carrying out activities that may impact upon bat roosts such as demolition of buildings or removal of trees.

Where bats are found within a potential development site, a license from Natural England may need to be secured if works that could otherwise contravene legislation are to be carried out. These licences are only issued where Natural England is satisfied that works are unavoidable and would not have a negative impact on the favourable conservation status of bats. A Natural England license requires that the potential development site has full planning permission and that bats were a material consideration of the planning permission.

Box 2 *Bat roosts*

Bats roost in buildings and trees in different locations depending upon time of year and environmental factors such as position of the sun, proximity to heat sources and feeding grounds. The following types are commonly referred to:

Transitional roosts

Bats frequently gather early in the season (March to April) before dispersing to summer roosts. Bats can be found in high numbers in these roosts for a very short period. Transitional roosts can also be found shortly before hibernation in August to October when bats (depending upon species) can gather in roosts not used earlier in the season.

Maternity roosts

These are among the most important roosts and are normally occupied from May to August. Depending on the species involved, some maternity roosts can contain a very significant proportion of the local population.

Summer (non-breeding) roosts

Small groups of non-breeding female and male bats can gather in these roosts or bats from a local population may choose to roost individually. There are normally a large number of suitable locations for summer non-breeding roosts and these may be routinely used or used only on an occasional basis. Irregularly used summer roosts can be very hard to find without unreasonable survey effort.

Mating roosts

Around September bats will gather in roost to mate; these are often in different locations than summer or breeding roosts.

Hibernation roosts

As bats in hibernation roosts are highly vulnerable to disturbance and bats can be present in large numbers these are considered to be among the most important bat roosts. Many species of bats roost in large and nationally important hibernation roosts associated with underground sites, many of which are well known and protected. However, the most common bat in the UK (the common pipistrelle) is largely unaccounted for in winter but thought to disperse and roost individually or in small groups in thermally stable cracks and crevices in thick walls or trees.

Local Status

4. The application site is within the natural range of species of bats listed in Table 1.

Table 1 Bat species recorded within 100km of the application site.

Species	National status
Pipistrelles (<i>Pipistrellus pipistrellus</i> and <i>P. pygmaeus</i>)	widespread/common
Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>)	widespread/rare
Noctule (<i>Nyctalus noctula</i>)	widespread/frequent
Leisler's (<i>Nyctalus leisleri</i>)	widespread/rare
Brown long-eared (<i>Plecotus auritus</i>)	widespread/common
Natterer's (<i>Myotis nattereri</i>)	widespread/frequent
Daubenton's (<i>Myotis daubentonii</i>)	widespread/common
Whiskered/Brandt's (<i>Myotis mystacinus</i> and <i>M. brandtii</i>)	widespread/scarce
Alcathoe's (<i>Myotis alcathoe</i>)	local/unknown
Serotine (<i>Eptesicus serotinus</i>)	south restricted/uncommon

Method

5. A thorough daytime inspection of the site was made in March 2018 in order to look for evidence of bats and assess suitability for roosting. Evidence of bats may take the form of droppings, feeding remains, live bats, dead bats, stains from the oils in bats' fur and claw marks made by bats regularly roosting in the same location.
6. Bat roosting potential of the trees was classified according to the following criteria set out in Table 2, taken from the Bat Conservation Trust Good Practice Guidelines (2016).

Table 2 Bat Roosting Suitability of trees.

Suitability	Criteria
<i>Negligible</i>	Negligible habitat features on site likely to be used by roosting bats.
<i>Low</i>	A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
<i>Moderate</i>	A tree with one or more potential roost sites that could be used due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
<i>High</i>	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protections, conditions and surrounding habitats.

7. Survey and assessment was directed by Christopher Shaw BSc (Hons) MCIEEM. Chris has over 7 years' experience of carrying out bat surveys in a professional capacity and is registered to use the new Class Survey Licence WML CL18 (Bat Survey Level 2). He is an active member of the West Yorkshire Bat Group and West Yorkshire Bat Care Scheme.

Records

8. As part of the original WYG Extended Phase 1 Habitat Survey Report, data was requested from West Yorkshire Ecology (WYE). A total of 33 bat records were returned, with species including common pipistrelle, noctule and indeterminate bat species.
9. Fifteen of the records relate to roosts, two of which are hibernacula, one has been excluded and six are transitional roosts. The closest roost record is for a pipistrelle sp. (*Pipistrellus* sp.) roost located approximately 650m north of the site.

Survey Results

10. During the course of the survey, a total of 10 individual trees were assessed as containing features with bat roost suitability. In addition, numerous trees were identified within, and along the edges of, the two mature broadleaved woodlands bordering the eastern boundary (Dum Wood & Dogloitch Wood).
11. The approximate location of these trees is shown on Figure 2 overleaf, whilst a brief description of the potential roost features (PRF's) noted and the level of roost suitability assigned, can be seen in Table 1 below. Images of the PRF's can be seen in Appendix 1.

Table 1 Summary of Bat Roost Suitability Assessment

Ref.	Roost Suitability	Notes
T1	Low	Early mature oak with occluded bark
T2	Low	Early mature alder with peeling bark & rot holes
T3	High	Mature oak with large cavity in trunk
T4	Moderate	Mature oak with woodpecker hole
T5	Moderate	Two mature ash trees with
T6	Moderate	Mature oak with woodpecker hole at around 4m
T7	Low	Early mature oak with shallow knot holes
T8	Low	Two mature ash trees with branch wounds
T9	Low	Mature ash covered in mature ivy
T10	Moderate	Mature willow with woodpecker holes and hazard beams
Dum Wood	High	Numerous trees with a range of potential roost features
Dogloitch Wood	High	Numerous trees with a range of potential roost features

Figure 2 Location of with roost suitability



Evaluation

12. Detailed proposals have yet to be produced, and as such, it is unclear which trees will be retained, and which will require removal or major tree works to facilitate development.
13. Where trees are classified as having roost suitability (see figure 2) the first recourse should be to the avoidance of impacts, and plans should be revisited to establish the imperative of any works to these trees. Where works are essential, further survey should be carried out prior to works.
14. Works to trees classified as having *Low Roost Suitability* should be the subject of a toolbox talk delivered to tree contractors prior to works commencing, to make them aware of the potential for roosting bats and the type of features they may use. They should be instructed to inspect features immediately prior to felling, and if signs of bats or more complex features are found, the fell should be halted and further ecological advice should be sought.
15. Where trees are classified as having either *Moderate or High Roost Suitability* - further action is recommended. At least two surveys should be carried out on trees with moderate suitability and at least three on trees with high suitability. Each survey visit should be undertaken during the main active bat season (May to August) and during fine weather conditions.

References

Bat Conservation Trust (2016) Bat Surveys for Professional Ecologists – Good Practice Guidelines

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

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

Conservation of Habitats and Species Regulations 2010

Appendix 1 Potential Roost Features

T1 – crossing branches with occluded bark



T2 – tree in decline, with rot holes and peeling bark



T3 – Large main stem cavity



T4 – old woodpecker hole



T5 – Typical features on mature ash trees



T6 - old woodpecker hole



T7 - Early mature oak with shallow knot holes



T10 – Poplar with woodpecker holes



T10 – Poplar with hazard beam



Woodland tree with BRS



Woodland tree with BRS



Woodland tree with BRS



14.6 Bat Activity Survey



Bat Activity Survey
Land at Chidswell, Dewsbury

Report Reference:	Bat Activity Survey Land at Chidswell, Dewsbury
Report Reference:	R-3280-06
Written by:	Christopher Shaw BSc (Hons) MCIEEM Senior Ecologist
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QA review:	Daniel Ross BSc (Hons) Grad CIEEM Ecologist
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Introduction

Subsequent to the recommendations made in WYG, December 2016, Extended Phase 1 Habitat Survey Report (Ref. A054074), Brooks Ecological was commissioned to undertake monthly Bat Activity Surveys at the proposed development Site in Chidswell (see Figure 1 below).



These surveys are required to provide evidence of the baseline use of the Site by the local bat population, which in turn will then enable mitigation and enhancement strategies to be devised to support a future planning application.

Survey and assessment was directed by Senior Ecologist, Christopher Shaw BSc (Hons) MCIEEM. Chris is registered to use the Class Survey Licence WML CL18 (Bat Survey Level 2) and is a member of the West Yorkshire Bat Group and West Yorkshire Bat Care Scheme.

Methodology

The objective of the survey was to characterise how local bat populations currently make use of the Site, so that an accurate assessment of the potential impacts of development could be made. Transect and remote monitoring surveys were carried out to collect the following data (BCT survey guidelines 2016):

- The assemblage of bat species using the site;
- The relative frequency with which the site is used by different species;
- The nature of activity for different bat species, for example foraging, commuting and roosting.

Each transect began around sunset and continued up to 2 hours after when all bats were thought to have emerged, and thus were actively foraging and commuting. Conditions and dates are summarised in the table below.

Table 1: Transect survey conditions

Month	Date	Weather	Invertebrate activity
April	17.04.18	13°C. Dry. Calm. Part cloud.	Low
May	17.05.18	9-8°C. Dry. Calm. No cloud	Moderate
June	12.06.18	14°C. Dry. Light breeze. Full cloud.	Moderate
July	09.07.18	17°C. Dry. Light wind. Humid. Full cloud.	High
August	23.08.18	13-11°C. Dry. Light wind. No cloud.	Moderate
September	27.09.18	13°C. Dry. Light wind. Clear.	Low

The transect was walked by a single surveyor, equipped with a heterodyne detector as well as a Titley Scientific Anabat Express, used to track the transect route and aid species identification. Notes taken during the survey were then used to produce the activity 'heat maps' seen later in this report.

Data collected during the periods of remote monitoring has been run through Kaleidoscope Pro software, which can identify bat calls down to species level (except for myotis). Identification is generally correct when using this software; however, results are double checked to ensure accurate data analysis. Every effort is made to split up myotis calls down to species level. This is done by analysing calls on Anabat software and looking at parameters such as inter-pulse interval, call duration, slope and maximum / minimum / peak call frequency.

Limitations: Static monitoring can only reliably provide information on what species of bat are regularly making use of a site. The frequency of calls recorded can, to some extent, suggest whether activity on site is low, moderate or high, by comparing data collected with that of similar sites that have been surveyed.

A single registration can account for up to 15 seconds of continuous bat call. Large batches of registrations can be interpreted in several different ways, i.e. a single bat foraging continuously for only an hour can result in many hundreds of registrations being logged; similarly, many hundreds of bats commuting quickly past the detector can result in the same number of registrations.

April Results

Walked Transect

Overall bat activity was found to be relatively low through the Site. As would be expected, bat activity was focussed along the wooded field boundaries and central watercourse (see figure) and for the most part comprised of irregular foraging by solitary common pipistrelle bats.

In only three locations was more than a single bat seen at any one time, these being towards the northern end of the central watercourse and along the plantation woodland to the west. In all three locations, activity consisted of regular foraging by up to 3 common pipistrelle bats.

Near the start of the survey, commuting by solitary bats was observed along several of the hedge lines to the north of the Site, as shown in the figure.

Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 2a: Data collected at Location 1

Species	17th	18th	19th	20th	21st
C. Pip	41	16	13	-	-
S. Pip	-	-	-	-	-
Noctule	-	1	-	-	-
Myotis	-	-	-	-	-
BLE	-	-	-	-	-

Table 2b: Data collected at Location 2

Species	17th	18th	19th	20th	21st
C. Pip	-	-	-	-	-
S. Pip	-	-	-	-	-
Noctule	-	-	-	-	-
Myotis	-	-	-	-	-
BLE	-	-	-	-	-

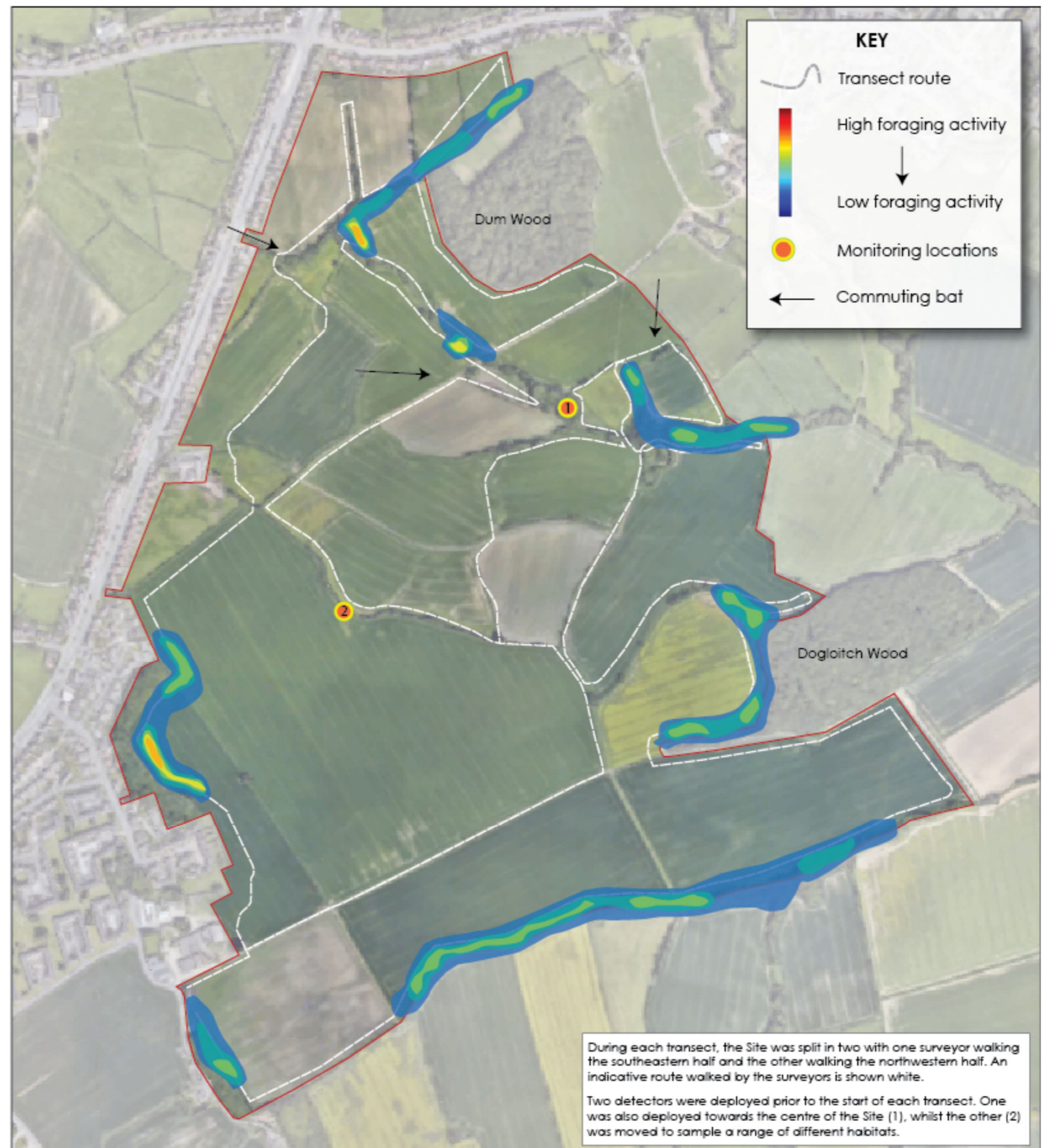
As can be seen, very low levels of bat activity were recorded during this period, with only a handful of registrations being logged across the first three nights at location 1, and no activity whatsoever being logged at location 2. The lack of recordings is down to low bat activity.

Only two species of bat were recorded during this period, these being common pipistrelle and noctule.

A total of 71 bat registrations were logged across the 5 days of monitoring, averaging out at 14 reg. per night. This can be considered to represent very low levels of bat activity.



Figure 2 Summary of April walked transect



May Results

Walked Transect

Bat activity was again found to be relatively low and was this time focussed along the central watercourse and mature woodland edges abutting the east and southeast boundaries (see figure right); where regular foraging by up to two common pipistrelles was observed. Elsewhere along hedgerow field boundaries, activity was confined to irregular foraging by solitary common pipistrelle bats,

Early on, small numbers of common pipistrelle were observed commuting along several of the hedge lines within the eastern half of the Site, as shown in the figure.

Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 3a: Data collected at Location 1

Species	11th	12th	13th	14th	15th
C. Pip	641	26	394	2452	955
S. Pip	1	1	2	-	-
Noctule	20	11	77	61	37
Myotid	-	-	-	-	1
BLE	-	-	-	-	1

Table 3b: Data collected at Location 2

Species	11th	12th	13th	14th	15th
C. Pip	452	12	138	601	341
S. Pip	-	-	-	-	-
Noctule	51	7	1	5	11
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

Bat activity was significantly greater during this period, when compared to the previous month, with both detectors logging bat calls across all five nights.

Activity was greatest at location 1, with up to five species of bat being recorded here. The bulk of this activity is attributable to common pipistrelle, and then noctule, with both species being recorded consistently across all five nights. For all but one of the nights, this data is consistent with low level foraging by noctule and moderate levels of foraging by common pipistrelle. The exception is on the 14th, and partially on the 15th, when uncharacteristically high levels of activity was recorded for common pipistrelle. This is possibly a reflection of slightly greater numbers of common pipistrelle foraging more consistently around the monitoring device on these two nights.

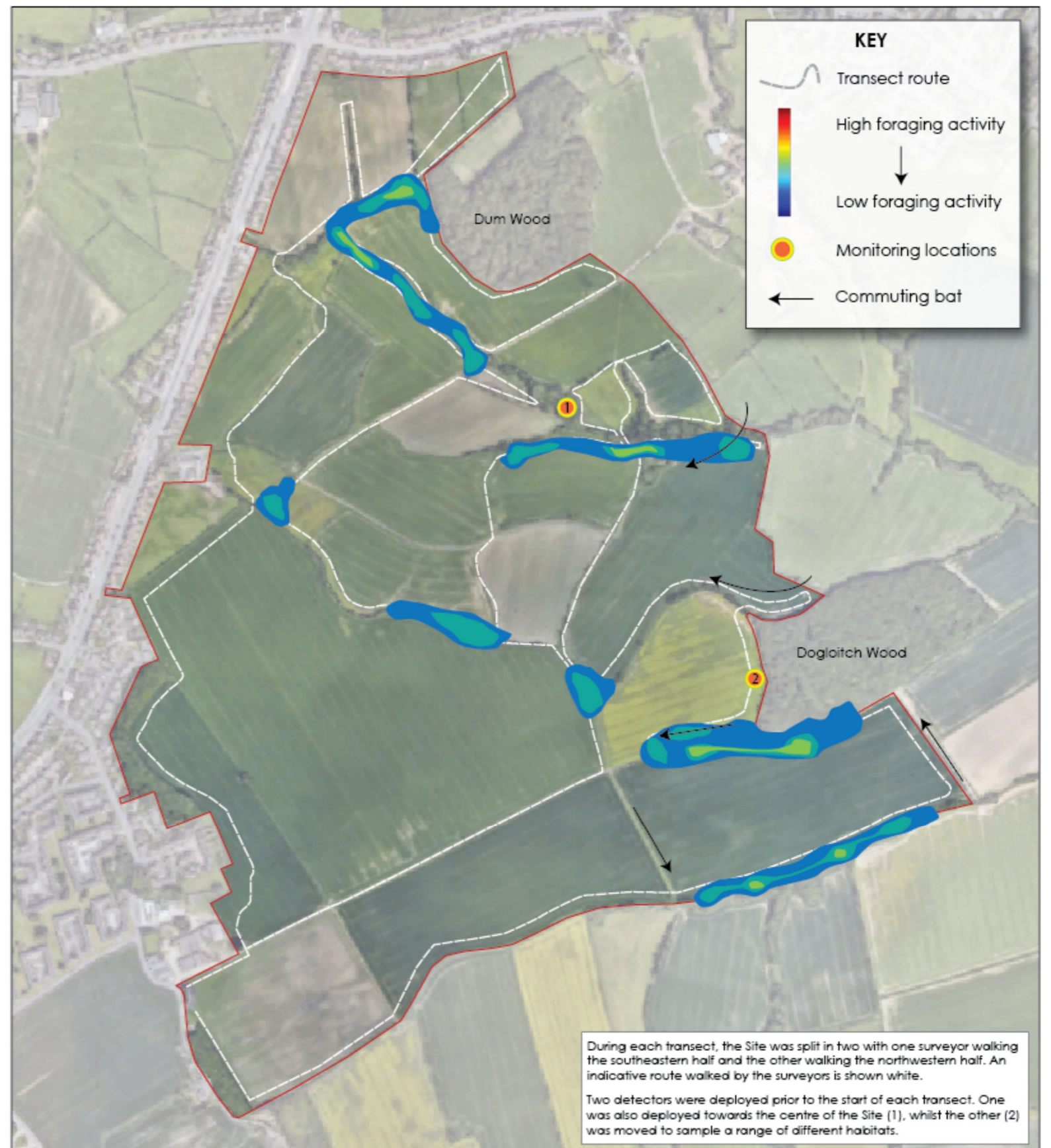
The other three species (soprano pipistrelle, brown long eared and a myotid bat) were only recorded on a couple of the nights, and is likely to represent solitary commuting bats.

Location 2 (western edge of Dogloitch Wood), recorded only low levels of foraging activity by common pipistrelle and noctule bat.

An average of 936 registrations were logged per night at location 1, with an average of 323 reg. per night at location 2, this can be interpreted as moderate and low levels of bat activity, respectively.



Figure 3 Summary of May walked transect



June Results

Walked Transect

Bat activity was significantly lower during this months transect, with foraging by solitary common pipistrelles being encountered in only four locations (see figure).

Commuting by solitary bats was observed along three of the central hedge lines.

Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 4a: Data collected at Location 1

Species	6th	7th	8th	9th	10th
C. Pip	33	17	24	18	50
S. Pip	-	-	-	-	-
Noctule	32	60	24	71	57
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

Table 4b: Data collected at Location 2

Species	6th	7th	8th	9th	10th
C. Pip	8	23	32	21	30
S. Pip	-	-	-	-	-
Noctule	2	20	5	21	13
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

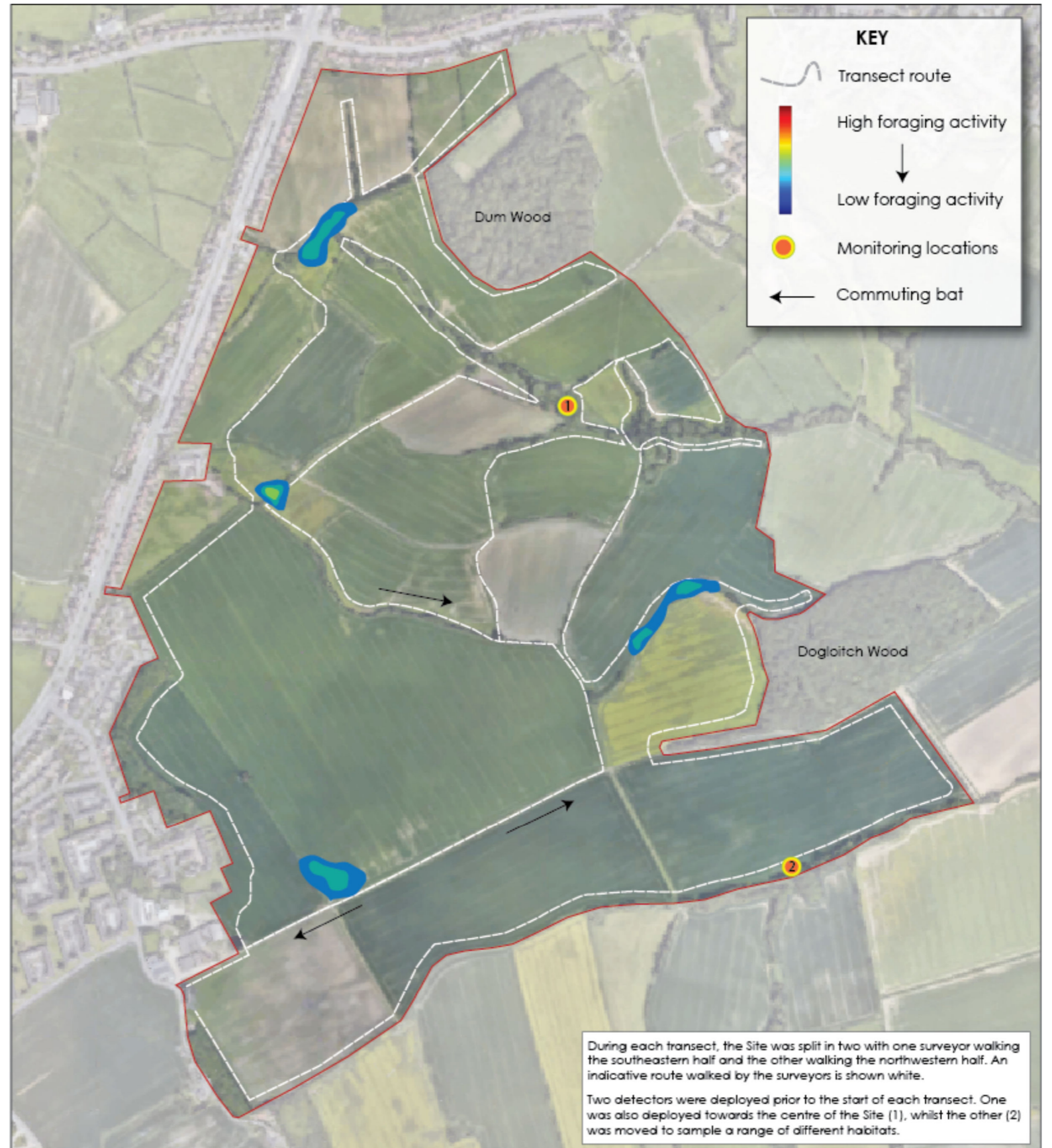
The drop in bat activity seen during the walked transect is also seen in the results of the remote monitoring.

This time, only two species of bat (common pipistrelle and noctule) were recorded at both monitoring stations; and both in low amounts.

An average of 77 registrations was logged across each night at location 1, with an average of 35 reg. per night at location 2, this can be interpreted as very low levels of bat activity at both locations.



Figure 4 Summary of June walked transect



July Results

Walked Transect

Bat activity was slightly higher in July, when compared to June, but again was still relatively low overall. All activity was attributed to solitary common pipistrelles, foraging along some of the internal field hedgerows and mature tree lines (see figure right).

No obvious commuting activity was recorded on this occasion.

Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 5a: Data collected at Location 1

Species	9th	10th	11th	12th	13th
C. Pip	116	74	119	87	49
S. Pip	1	-	1	-	-
Noctule	17	15	20	14	26
Myotid	-	-	-	-	1
BLE	-	-	-	-	-

Table 5b: Data collected at Location 2

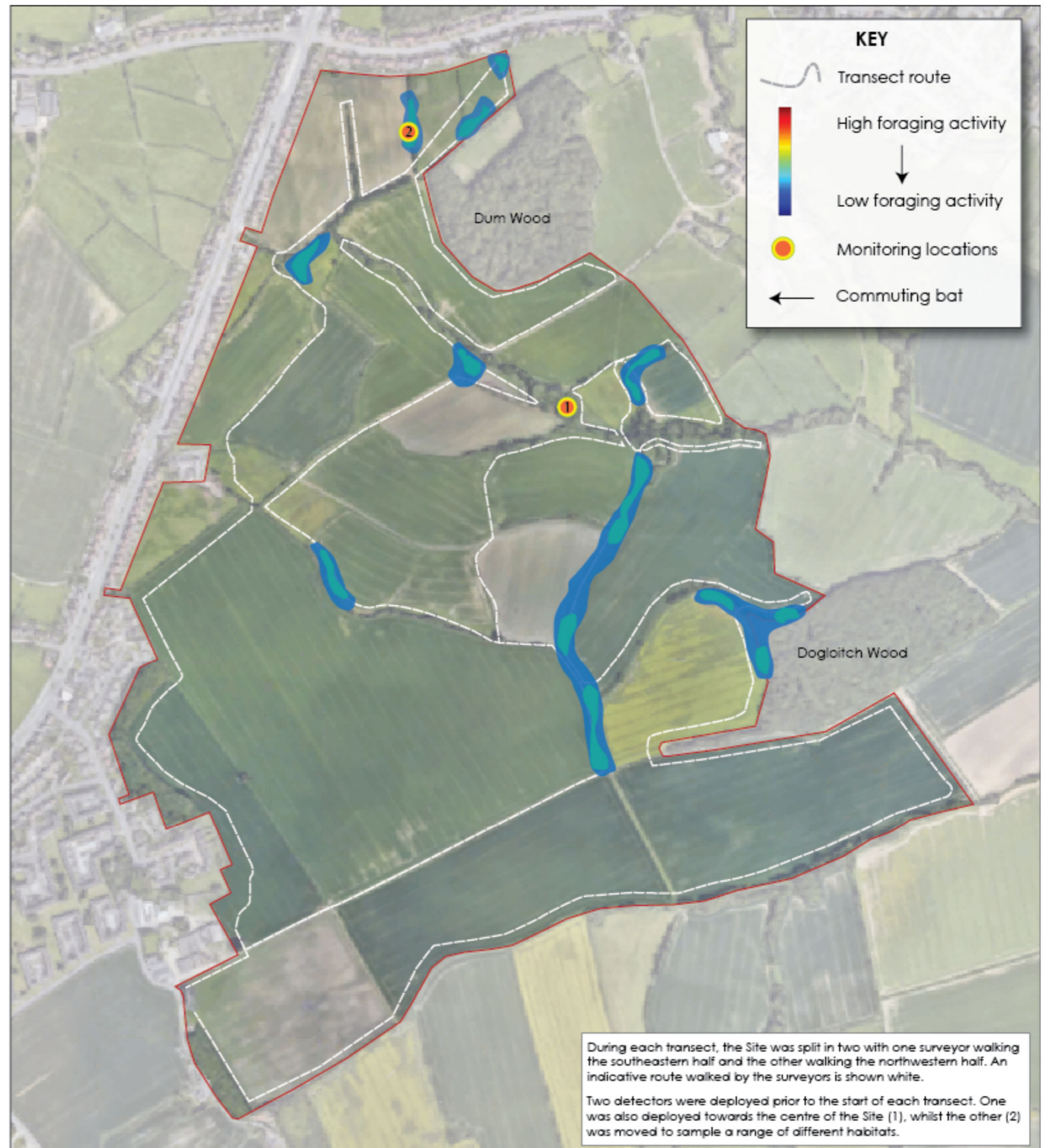
Species	9th	10th	11th	12th	13th
C. Pip	217	271	506	190	-
S. Pip	1	-	-	-	-
Noctule	6	8	5	3	-
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

Four species of bat were recorded making use of the Site during this period, with the bulk of activity at both monitoring stations being attributed to common pipistrelle. Noctule were recorded in smaller amounts on most nights, whilst soprano pipistrelle and a single myotid bat were recorded commuting past the detectors on only four occasions.

An average of 108 registrations were logged across each night at location 1, with an average of 241 reg. per night at location 2, this can be interpreted as low levels of bat activity at both locations.



Figure 5 Summary of July walked transect



August Results

Walked Transect

Bat activity was exceptionally low during this transect, with only a single bat being encountered all evening; this being a single common pipistrelle commuting along one of the central hedgerows near the start of the survey.

Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 6a: Data collected at Location 1

Species	23rd	24th	25th	26th	27th
C. Pip	5	6	74	196	200
S. Pip	-	-	-	-	-
Noctule	-	1	5	7	16
Myotis	-	-	-	-	-
BLE	-	-	-	-	2

Table 6b: Data collected at Location 2

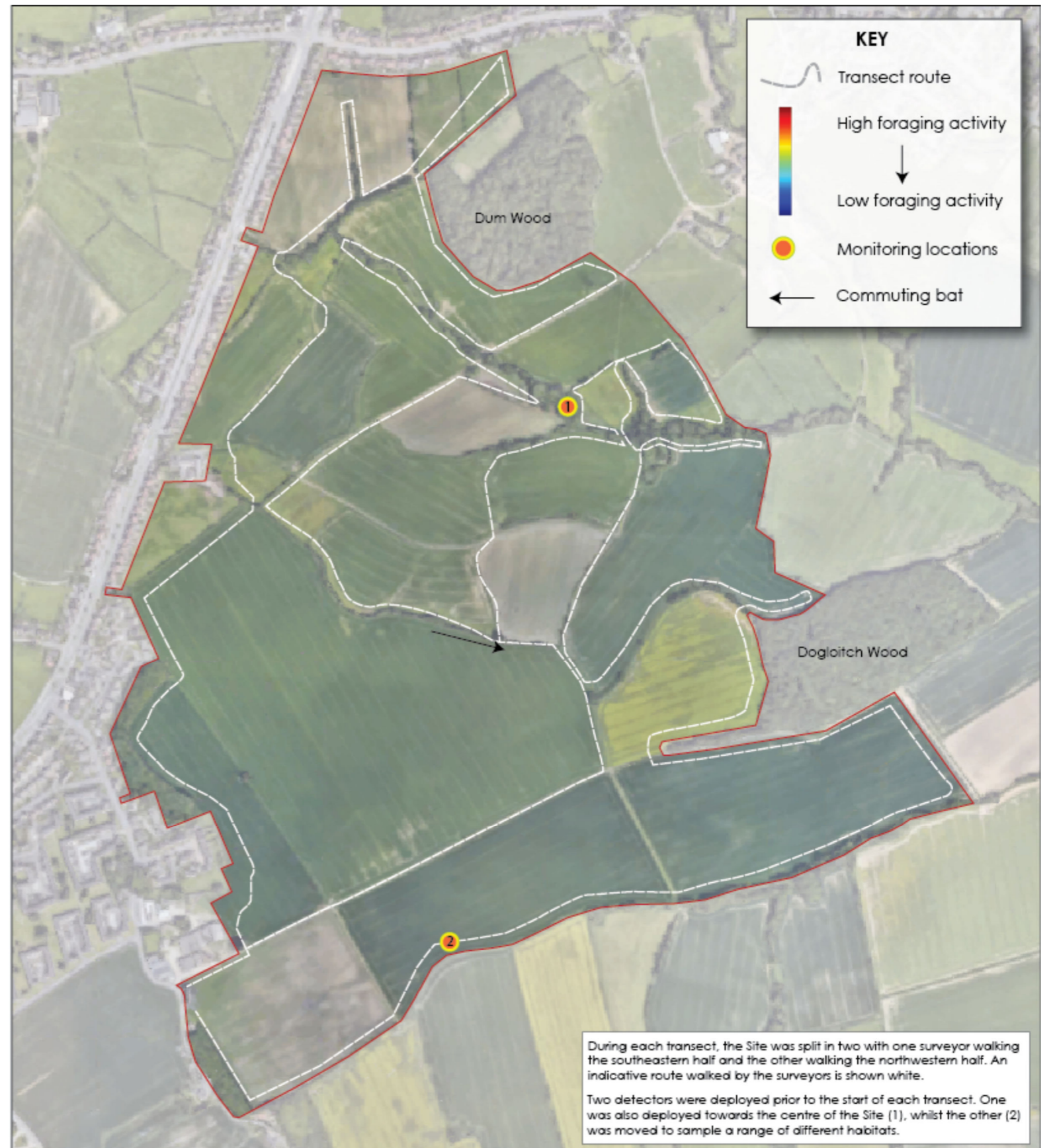
Species	23rd	24th	25th	26th	27th
C. Pip	1	2	3	-	5
S. Pip	-	-	-	-	-
Noctule	15	-	2	4	3
Myotis	-	-	-	-	-
BLE	-	-	-	-	-

As with the walked transect, bat activity was very low during this period. Only three species of bat were recorded making use of the Site, with the bulk of the bat activity being made by common pipistrelle. Noctule were recorded in small amounts on most nights, whilst a brown long eared bat was recorded on a single evening (27th August).

An average of 102 registrations were logged across each night at location 1, with an average of 7 reg. per night at location 2, this can be interpreted as low levels of bat activity at both locations.



Figure 6 Summary of August walked transect



September Results



Walked Transect

Bat activity was slightly higher again in this month, when compared to August, but was still relatively low overall. All activity was attributed to solitary common pipistrelles, foraging along the central watercourse and mature boundary tree lines (see figure right).

No obvious commuting activity was recorded on this occasion.

Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 7a: Data collected at Location 1

Species	21st	22nd	23rd	24th	25th
C. Pip	45	54	70	23	752
S. Pip	-	-	-	-	-
Noctule	1	8	1	6	6
Myotis	-	-	-	3	-
BLE	-	-	-	-	-

Table 7b: Data collected at Location 2

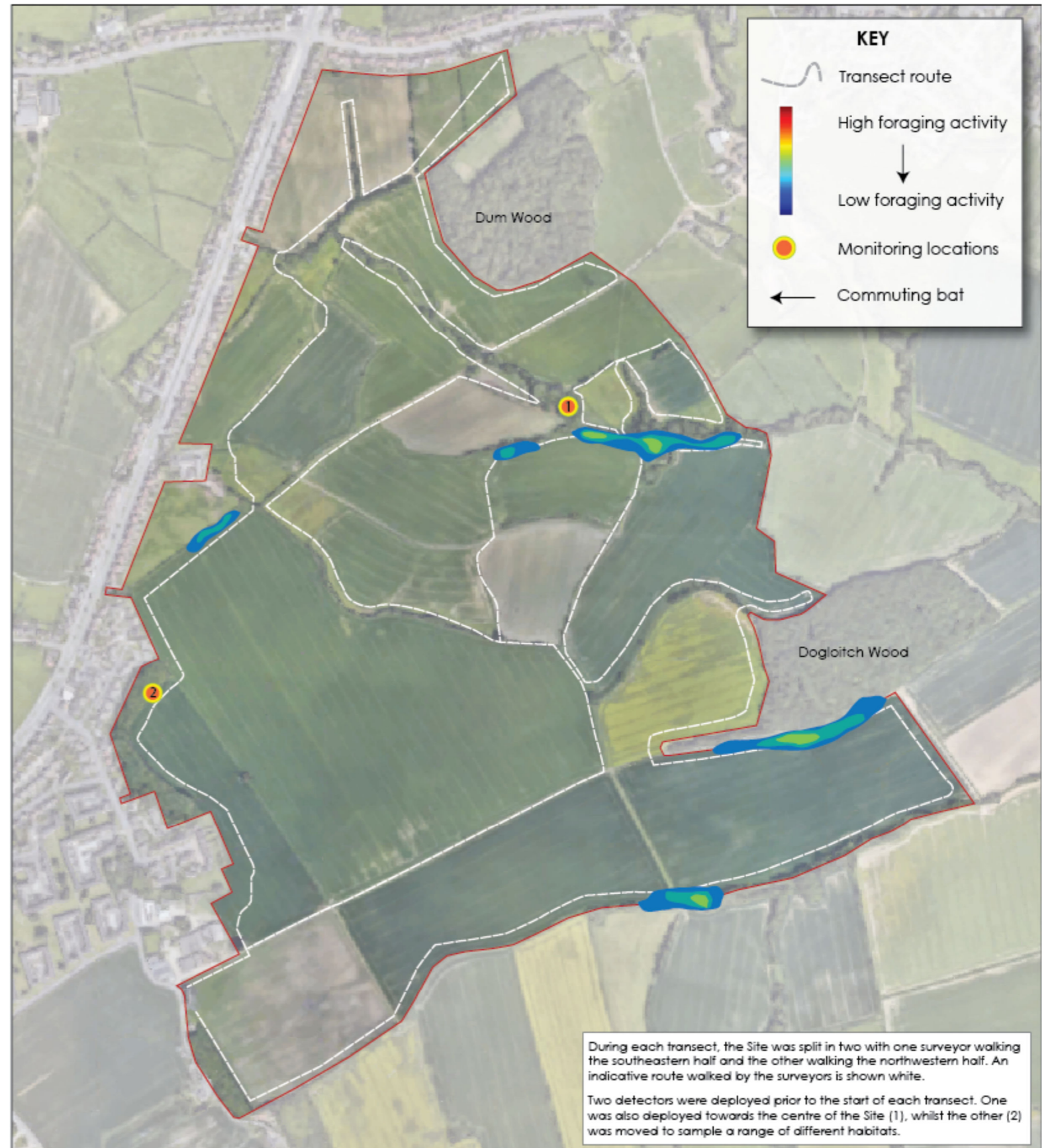
Species	21st	22nd	23rd	24th	25th
C. Pip	33	48	48	51	256
S. Pip	-	-	-	-	1
Noctule	1	10	-	2	1
Myotis	-	-	-	1	-
BLE	-	1	-	-	-

Monitoring at both locations recorded only very low levels of bat activity across the first four nights, with slightly greater levels of activity logged on the fifth night.

The same five species of bat were recorded on Site, all in similar proportions to previous monitoring.

An average of 193 registrations were logged across each night at location 1, with an average of 90 reg. per night at location 2, this can be interpreted as low levels of bat activity at both locations.

Figure 7 Summary of September walked transect



Evaluation

Despite the Site's extensive size and the presence of some relatively high quality semi-natural habitat - both within the Site and along its boundaries - survey has shown that bat activity is consistently low throughout the Site across all six months of study. The only exception to this was during the May monitoring, when on two of the nights an uncharacteristically high number of registrations were logged. Data collected therefore indicates that the Site of relatively little importance to any local bat populations.

Walked transects have recorded only low level foraging and commuting by common pipistrelle bats, with activity focussed along the central watercourse and mature tree lines, with less consistent activity along some of the internal field hedgerows/ tree lines.

Remote monitoring has shown that the Site is only regularly used by the two most commonly encountered species of bat (common pipistrelle and noctule), with a further three (common) species recorded in very low numbers and on a very ad-hoc basis; these being soprano pipistrelle, brown long eared and a single myotis species (most likely whiskered bat).

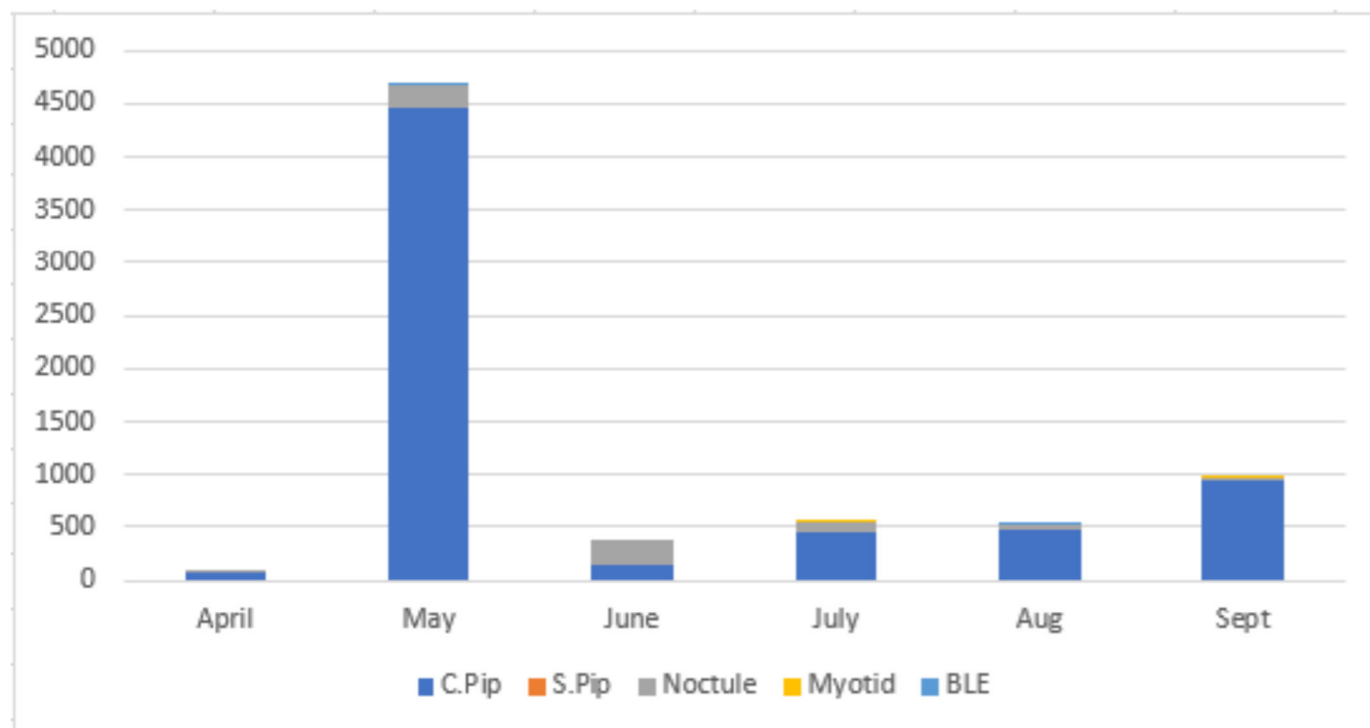


Figure 8 (top)

Cumulative number of registrations logged each month at monitoring location 1. Note - the spike in May is due to two nights of uncharacteristically high activity.

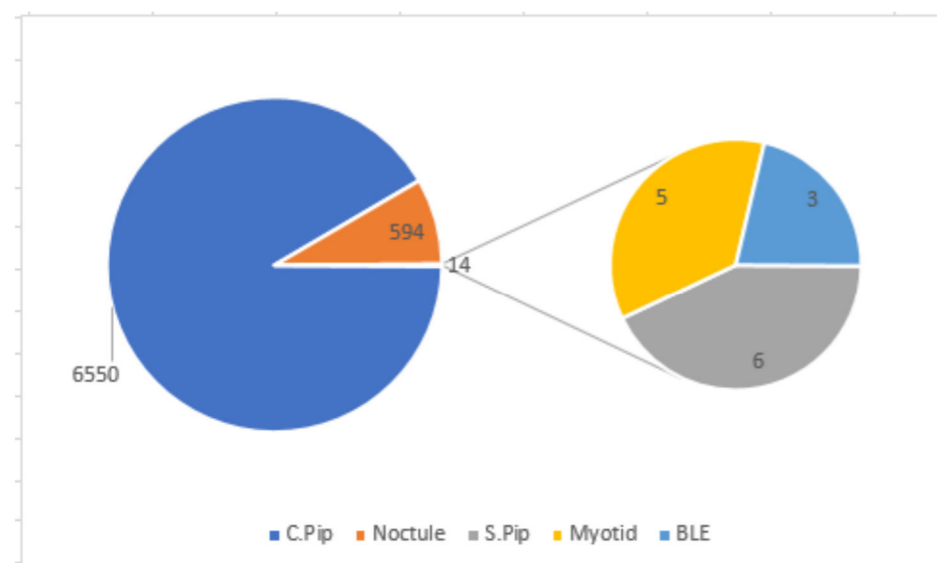


Figure 9 (left)

Proportion of registrations attributed to each bat species/ group recorded at location 1

Conclusions & Recommendations

Survey has found the Site to be of relatively low importance to this group and despite the Site's large size, the data collected would indicate that development is unlikely to impact significantly on any of the local bat populations.

Nevertheless, features that are consistently favoured by bats - namely the central watercourse and mature woodland edges (Dum Wood and Dogloitch Wood) - should be retained, protected and enhanced through development. The following is recommended:

- Standard protection of favoured habitat during construction, including the erection of BS5837:2012 Tree Protection fencing and safe storage of hazardous chemicals. This would be delivered through a Construction Environmental Management Plan (CEMP: Biodiversity).
- A suitable lighting scheme, which directs all artificial lighting (i.e. flood lighting used during the construction phase, new street lighting, security lights) away from the watercourse and woodland edges.
- A Landscape and Ecological Management Plan (LEMP) should be produced to show how connectivity through the Site can be maintained, as well as how to maximise the wildlife value of retained and newly created habitat.
- New roosting opportunities will be designed into the masterplan, and placed strategically alongside the best bat habitat.

Provided the above recommendations are properly implemented, development presents a real opportunity to deliver long term gains for this group.

References

- BS42020 2013. Biodiversity- Code of practice for planning development. BSI
- Bat Conservation Trust (2012) Bat Surveys – Good Practice Guidelines
- English Nature (2004) Bat Mitigation Guidelines. English Nature, Peterborough.
- JNCC (2004) The Bat Workers Manual. 3rd Edition.
- ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System <http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity>
- Conservation of Habitats and Species Regulations 2010 <http://www.legislation.gov.uk/uksi/2010/490/contents/made>
- Stone, E.L. (2013) Bats and Lighting. Overview of current evidence and mitigation

14.7 Water Vole Report



Water Vole Report

Land at Chidswell, Dewsbury

Report reference: R-3280-07.1

September 2018

Report Title:	Water Vole Assessment Land at Chidswell, Dewsbury
Report Reference:	R-3280-07.1
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Technical review:	Sam Kitching BSc (Hons), Grad CIEEM Ecologist
QA review:	Jacob Lawson BSc (Hons) Seasonal Ecologist
Approved for issue:	Peter Brooks BSc (Hons), MA, MCIEEM, CEnv Managing Director
Date:	Interim results published - 04.06.18 Final report issued – 06.09.18



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Summary Statement

No evidence of water vole activity has been found within any of the on-site, or neighbouring, watercourses or ditches. The likely absence of this species can therefore be reasonably concluded.

Introduction

1. Subsequent to recommendations set out in the WYG, December 2016, Extended Phase 1 Habitat Survey Report (Ref. A054074), Brooks Ecological Ltd were commissioned to carry out a dedicated Water Vole Survey of all suitable features within the proposed development Site in Chidswell.
2. The survey was required to provide information on the likelihood of impacts on water vole arising from proposals to develop the site.
3. Survey encompassed three separate sections of watercourse, one of which passes through the northern half of the Site (west-east) and two further sections located just outside of the red line boundary to the south; see Figure 1.

Figure 1 Site boundary (red line) and approximate extent of survey (dark blue line)



Legal background

4. Water voles are protected under the Wildlife and Countryside Act 1981 Schedule 5 (as amended April 2008) in respect to Section 9 which makes it an offence to:
 - intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;
 - intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose;
 - intentionally kill, injure or take water voles;
 - possess or control live or dead water voles or derivatives;
 - sell water voles or offer or expose for sale or transport for sale;
 - publish or cause to be published any advertisement which conveys the buying or selling of water voles.
5. Water voles occupy a variety of water's edge habitats but can also be found away from water in some regions of the UK. Their places of shelter are normally found within 2m of the water's edge and comprise a series of connected burrows with both above water and under water entrances.

Method

6. The survey was carried out from the banks of the ditch/ watercourse system, and where safe to do so, from within the channel itself.
7. An early season visit was carried out on the 20th April 2018, with a late season visit on 6th September 2018. Both were undertaken in suitable weather conditions and led by an experienced field worker. Survey encompassed an area up to 10m in land from either side of each ditch.
8. Water vole survey followed Dean et al. (2016) and attempted to locate evidence of water vole including:
 - *Sightings of water vole*
 - *Water vole tunnel entrances*
 - *Water vole "lawns"*
 - *Water vole feeding stations*
 - *Water vole latrines*
 - *Waterside paths*
 - *Water vole footprints*

Habitat Description

9. The Site is separated into a number of large arable fields by a mix of hedgerows, ditches/ watercourse and simple post & wire fence lines. All of the ditches/ watercourses surveyed are at the upper reaches of tributaries that eventually join and discharge into the River Calder. All support an ephemeral/ intermittent flow, and present fairly sub-optimal water vole habitat.
10. Each of the three-watercourse surveyed change in character as they progress steadily eastwards. The most southerly begins as a small (c.0.2m) wide channel, surrounded by small, shallow banks vegetated by rank grass and tall competitive herbs. This then transitioned to a steep valley woodland to the east.
11. The central ditch is around 0.5m wide, and starts off within a small wooded valley, before continuing along the edge of Dogloitch Wood. For the most part, the banks are vegetated with woodland ground flora and understorey.
12. The on-site watercourse has the most natural profile and fluctuates between having sections of steep wooded bank, and flat banks vegetated with rough grassland and tall ruderal.

Figure 2a Southern drain (off-site). View of the west (left) and east (right) ends.





Figure 2b

Central drain (off-site). Passing along the edge of Dogloitch Wood

Figure 2c On-site watercourse



Results

13. No evidence of water vole activity was found along any of the onsite or offsite watercourses or drainage ditches during the course of the two survey visits.

Conclusions & Recommendations

14. No evidence of water vole activity has been found within any of the watercourses surveyed and the risk of this species being found on Site is considered to be negligible.
15. No further survey or precaution is therefore recommended with regards to water vole and proposals present little risk of impacting on this species.

References:

Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook. The Mammal Society

Strachan *et al.*, (2011). Water Vole Conservation Handbook.

14.8 Reptile Survey



Reptile Survey

Land at Chidswell, Dewsbury

Report reference: R-3280-08

October 2018

Report Title:	Reptile Survey Land at Chidswell, Dewsbury
Report Reference:	R-3280-08
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QA review:	Rob Weston BSc MSc MCIEEM Technical Director
Approved for issue	Peter Brooks BSc (Hons), MA, MCIEEM, CEnv Managing Director
Date	03.10.18

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Summary Statement

No evidence of reptiles has been found on Site, however it is not possible to completely rule out this group's occasional presence at very low density.

Precautions in relation to site clearance and habitat retention are recommended.

Introduction

1. Brooks Ecological Ltd was commissioned by the Church Commissioners for England to carry out a detailed Reptile Survey of the proposed development Site in Chidswell, Dewsbury.
2. The requirement for detailed survey was highlighted by a Preliminary Ecological Appraisal carried out by WYG in June 2016 (Job Ref. A054074), as well as through consultation with the Ecologist at Kirklees Council, Tom Stephenson, in March 2018. The survey aims to provide information on the likelihood of impacts arising on reptiles because of the proposals.
3. The vast majority of the Site is occupied by habitat of negligible value to this group, being intensively worked for agriculture (arable). However, a small ribbon of suitable reptile habitat cuts through the northern end of the Site in the form of a small tree lined watercourse (Hey Beck). In addition, two mature woodland blocks abut the eastern boundary and many of the arable field margins support a mosaic of rough neutral grassland, tall competitive herbs, scattered scrub, hedgerows and drystone walls.

Figure 1 Site (and survey) boundary – red line



Legislation

4. The site lies in the natural range of four widespread species of reptile (common lizard, slow worm, adder and grass snake). These all receive limited protection under part of subsection 9(1) and all of subsection 9(5) of the Wildlife and Countryside Act 1981 (as amended). This affords protection against intentional and reckless killing or injuring and trade.
5. Destruction of known habitats whilst reptiles are present may therefore lead to an offence of killing or injury.
6. Destruction of known habitat without provision for the safe escape of animals into further suitable habitat able to support them can lead to offences under the Abandonment of Animals Act 1960 (as amended).
7. The Natural Environment and Rural Communities Act 2006 sets out the responsibility of public authorities to Biodiversity. This Act provides lists of habitats and species to which the LPA's consideration must be given when exercising their functions (e.g. considering planning permission). All reptile species are listed under section 41 of the Act making them and their habitat a consideration of planning.

Methodology

8. Reference was made to The Herpetofauna Worker's Manual (Gent and Gibson, 2003) for the survey methodology with seven official reptile survey visits being carried out.
9. To increase the chance of finding any reptiles present, artificial refuges were placed across the site in locations likely to support reptiles e.g. on the southern edge of vegetated areas and on banks with a southerly and westerly aspect. Approximately 100 refuges were laid within the areas of best reptile habitat. This number of refuges far exceeds guidelines of using 5-10 refuges/ha of suitable habitat set out in the Froglife Advice Sheet 10.
10. An appraisal of the site by surveyors allowed an assessment of the location of target habitat features such as potential hibernaculae, refuges and foraging grounds. This allowed surveys of this large site to be targeted depending on season and conditions - a strategy which will considerably increase the potential of surveyors encountering reptiles. Figure 2 overleaf outlines the areas of best reptile habitat, and where survey effort was focussed – although the entire site was walked on each visit and all field margins surveyed.
11. On each survey visit both the new and existing artificial refugia, such as scattered debris, were approached quietly to observe any basking reptiles. These were then lifted to observe any reptiles that may be sheltering

beneath. Additionally, the site was systematically walked (transect surveys) looking for reptiles that may be basking or foraging away from refugia.

Figure 2 Plan showing areas of best reptile habitat, where survey was focussed (orange block)



12. These transect walks were carried out carefully with the surveyor walking slowly and looking well forward to attempt to spot reptiles at distance. This technique is necessary because reptiles have very good eyesight and generally are aware of surveyors at short distances, rapidly taking cover to avoid detection.
13. Reptiles can also leave evidence of their presence in the form of shed skin and holes in the ground (e.g. from lizard burrows or grass snake egg laying pits). This form of evidence was also searched for during the survey.

14. The surveys were carried out during suitable conditions as summarised in Table 1 below.

Table 1 Summary of Survey Results.

Visit No.	Survey Date	Conditions
1	29.03.18	7 – 9°C. Sunny Intervals. Dry. Light wind.
2	14.04.18	10 – 14°C. Light cloud with sunny intervals. Dry. Light breeze.
3	20.04.18	13 - 17°C. Sunny Intervals. Dry. Light wind.
4	06.06.18	13 - 15°C. Light cloud with sunny intervals. Dry. Light breeze.
5	06.09.18	14 - 15°C. Sunny with occasional light cloud. Dry. Light wind.
6	20.09.18	13°C. Sunny intervals. Dry. Light wind.
7	03.10.18	11 - 13°C. Light cloud with sunny intervals. Dry. Calm.

Results

15. No reptiles, or evidence of reptile activity, was identified anywhere on Site during any of the dedicated reptile survey visits.
16. In addition to these surveys, the Site has been extensively walked over throughout the course of the 2018 survey season, with various experienced Ecologists searching the Site for other faunal groups/ species; including breeding bird, water vole, badger and bats (roost suitability assessment), as well as undertaking a hedgerow regulations assessment. Despite this coverage, no reptiles were discovered at any point on Site.

Conclusion & Recommendation

17. Despite methodology guidance (Gent and Gibson, 2003) being followed and an exhaustive survey effort being employed, no evidence of reptiles could be found on Site.
18. It is therefore reasonable to conclude that the Site is not of significant value to any local reptile populations and the risk of development impacting on the local conservation status of this group is considered to be negligible.
19. However, given the sheer scale of the Site and the presence of suitable reptile habitat both on Site and dispersing out into the wider landscape (i.e. the network of wooded/ tree lined watercourses), it is impossible to ever completely rule out the presence of reptiles here, at very low density.
20. It is difficult to recommend mitigation in areas of very low-density populations covering wide areas. Where individuals do not show up in survey, efforts to catch and translocate them are likely to be expensive and/or unsuccessful. A method proportionate to the associated risks is therefore proposed:
 - Retention or creation of green infrastructure in the masterplan should seek to incorporate habitat suitable for reptiles, especially along the line of Hey Beck. This will assist in enhancing the overall ecological value of the development.
 - A precautionary approach to site preparation should be taken, particularly where vegetation clearance/ soil stripping operations affect hedgerows, ditches or rough field margins. Here, directional strimming of these areas will help to prevent direct injury or killing resulting from site clearance, as any reptiles present will disperse into areas of retained greenspace.
21. It is envisaged that this mitigation would be delivered through the production of a BS:42020 Landscape and Ecological Management Plan (LEMP) produced as a condition of planning.

References

Froglife (1999) *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.

Gent T and Gibson S, 2003, *Herpetofauna Workers' Manual*, JNCC

Hill et al. 2005, *Handbook of Biodiversity Methods*. Cambridge.

14.9 Hedgerow Assessment & Report



Hedgerow Assessment & Report

Land at Chidswell, Dewsbury

Report reference: R-3280-09

July 2018

Report Title:	Hedgerow Assessment & Report Land at Chidswell, Dewsbury
Report Reference:	R-3280-09
Written by	Christopher Shaw BSc (Hons) MCIEEM Senior Ecologist
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Summary Statement

The site supports a network of relatively species and structurally poor hedgerows, with only three which can be defined as 'Important' under the Hedgerows Regulations 1997.

A suitable landscaping scheme should be produced, which strives for a 'no net loss' in hedgerow cover, and which maintains connectivity.

Introduction

1. Subsequent to recommendations set out in the WYG, December 2016, Extended Phase 1 Habitat Survey Report (Ref. A054074), Brooks Ecological Ltd were commissioned by the Church Commissioners for England to carry out a detailed Hedgerow Survey within the proposed development Site in Chidswell.
2. The survey was required to clarify whether any of the hedgerows within the Site are afforded protection under the Hedgerows Regulations 1997 and also to assess the value of the hedgerows and hedgerow network with regard to the species present and/or their value as functioning wildlife corridors for faunal groups.

Box 1 Hedgerow Definition

The Hedgerow Regulations apply to any hedgerow growing in, or adjacent to, any common land, protected land, or land used for agriculture, forestry or the breeding or keeping of horses, ponies or donkeys, that have:

- a continuous length of, or exceeding, 20 metres; or
- a continuous length of less than 20 metres and, at each end, meets another hedgerow (whether by intersection or junction).

The Regulations do not apply to any hedgerow within the curtilage of, or marking a boundary of the curtilage of, a dwelling-house.

The end of a hedgerow is defined as the point at which it meets another hedgerow, whether by intersection or junction (termed as the node point). Any gap not exceeding 20 metres is treated as part of the hedgerow.

Box 2 Important Hedgerow

A hedgerow is defined as important under the Hedgerow Regulations if it has existed for 30 years or more and satisfies at least one of the criteria listed below:

1. The hedgerow marks the boundary of a historic parish or township existing before 1850;
2. The hedgerow contains or is within an archaeological feature which is on the Sites and Monuments Record, or a pre-1600 manor or estate;
3. The hedgerow is a part of, or associated with, a field system predating the Inclosure Acts;
4. The hedgerow is adjacent to a public right of way (not counting an adopted highway) and at least 4 woody species as defined in Schedule 3 of the regulations plus at least two Associated Features
5. The hedgerows contains any species listed under Schedule 1 Part I, Schedule 5 or Schedule 8 of the Wildlife and Countryside Act 1981; categorised as a declining breeder (category 3) in "Red Data Birds in Britain"; or categorised as "endangered", "extinct", "rare" or "vulnerable" in Britain.
6. The hedgerow meets one or more of the following criteria:
 - at least 7 woody species;
 - at least 6 woody species and at least 3 associated features;
 - at least 6 woody species, including one of the following - black-poplar tree (*Populus nigra ssp betulifolia*), large-leaved lime (*Tilia platyphyllos*), small-leaved lime (*Tilia cordata*), wild service-tree (*Sorbus torminalis*);
 - at least 5 woody species and at least 4 associated features;

Where the hedgerow in question is situated wholly or partly in the county of the City of Kingston upon Hull, Cumbria, Darlington, Durham, East Riding of Yorkshire, Hartlepool, Lancashire, Middlesbrough, North East Lincolnshire, North Lincolnshire, Northumberland, North Yorkshire, Redcar and Cleveland, Stockton-on-Tees, Tyne and Wear, West Yorkshire or York, the number of required woody species mentioned above should be reduced by one.

Box 3 Associated Features

1. A bank or wall which supports the hedgerow along at least one half of its length;
2. Gaps which in aggregate do not exceed 10% of the length of the hedgerow;
3. Has at least one standard trees per 50m of hedgerow. A standard tree is defined as having a diameter of at least 20cm (when single stemmed) or has at least two stems of at least 15cm (when multi-stemmed) when measured at a point 1.3 metres from natural ground level;
4. At least 3 woodland species within one metre, in any direction, of the outermost edges of the hedgerow;
5. A ditch along at least one half of the length of the hedgerow;
6. Connections scoring 4 points or more, where connection to a hedgerow counts as one point and a broad-leaved woodland or pond counts as two points;
7. A parallel hedge within 15 metres of the hedgerow;

3. Hedgerows are listed as habitats of Principle Importance under Section 41 of the NERC Act 2006 and as Priority Habitats within the Kirklees Biodiversity Action Plans; impacts upon this habitat would need to be considered during the planning process regardless of their value under the Hedgerow Regulations.

Methodology

4. Survey was carried out on the 6th June 2018 and followed the methodology set out in the Hedgerow Regulations 1997 and the Hedgerow Survey Handbook (DEFRA, 2007). This involved walking the Site and mapping hedgerows as defined in Box 1.
5. The full length of each hedgerow was then walked and data relevant to the assessment was collected, such as the number of woody species, ground flora, dimensions, public right of way and associated features.
6. The woody species count was obtained following the guidelines set out in the Hedgerows Regulations, as summarised below:
 - hedgerows less than or equal to 30m - all of the woody species are counted;
 - hedgerows between 30m – 100m - a count is taken from the central 30m;
 - hedgerows between 100 – 200m - a count is taken from the central stretch of 30 metres within each half of the hedgerow and the counts divided by two;
 - hedgerows exceeding 200 metres – a count is taken from the central stretch of 30 metres within each third of the hedgerow and the counts divided by three.

Results

Overview of hedgerow network

7. The Site supports a disjointed network of generally short, species-poor hedgerows which are heavily managed and mostly intact hedge. Within the Site's interior, much of the network is maintained at around 2m high, with boundary sections being less intensively managed and allowed to reach in excess of 4-5m tall.
8. The dominant species across the Site is hawthorn (*Crataegus monogyna*), with frequent elder (*Sambucus nigra*) and occasional oak (*Quercus robur*), hazel (*Corylus avellana*), field maple (*Acer campestre*) holly (*Ilex aquifolium*). Goat willow (*Salix caprea*), blackthorn (*Prunus spinosa*), sycamore (*Acer pseudoplatanus*), crab apple (*Malus sylvestris*), silver birch (*Betula pendula*), whitebeam (*Sorbus aria*), rowan (*Sorbus aucuparia*), field rose (*Rosa* sp.), dog rose (*Rosa* sp.), common honeysuckle and ash (*Fraxinus excelsior*) are all recorded in very small amounts.
9. Standard trees are rare across the hedgerow network, with most being found towards the northern end of the Site. Oak (*Quercus robur*) is the most common encountered species with smaller amounts of other species.
10. The ground flora and field margins adjacent to the hedgerows are generally narrow and dominated by common rank grasses and tall herbs, with no rare or notable species being recorded.

Hedgerow Regulations Assessment

11. All onsite hedgerows have been mapped (see Figure 1 overleaf) and a summary of the data collected for the Hedgerow Regulations assessment can be seen in Table 1 overleaf.
12. Three of the hedgerows can be defined as 'Important' under the Hedgerow Regulations 1997; these being Hedgerows 7, 9 & 28, which are classed as important by virtue of them containing at least 6 woody species within the central 30m.
13. Hedgerows 14, 24, 25, 30 and 31 just fall short of being classified as important, due to either one too few woody species or associated features, or by not being adjacent to a Public Right of Way (PRoW).

Table 1 Summary of the hedgerow survey

Hedge	Dimensions			Woody sp. Count	Associated Features							PRoW	Important under Hedgerow Regs
	Length (m)	Height (m)	Width (m)		Bank/Wall (≥50%)	Gaps (≤10%)	Tree / 50m	Ground flora (≥3)	Ditch (≥50%)	Connections (≥4)	Parallel hedge		
1	370	1.5	1	1	-	1	-	-	-	-	1	-	No
2	210	1.5	1	1	-	1	-	-	-	-	1	-	No
3	340	1.5-2	1	1	-	1	-	-	-	-	-	-	No
4	180	1	0.75	2	-	-	-	-	-	-	-	-	No
5	310	5+	3to4	3	-	-	-	-	-	-	-	-	No
6	65	5+	4to5	4	-	-	-	-	-	-	-	-	No
7	75	5+	5	7	-	1	1	-	1	-	-	1	Yes
8	220	2to3	1.5to2	3	-	-	-	-	-	-	-	-	No
9	60	4	3	6	-	-	1	-	-	-	-	-	Yes
10	265	4	4.5	2	1	-	-	-	-	-	-	1	No
11	180	2	1.5	2	-	-	-	-	-	-	-	-	No
12	100	2	1to1.5	4	-	-	-	-	1	-	-	-	No
13	125	1to1.5	0.5to1	2	-	-	-	-	-	-	-	-	No
14	480	4to5	4	5	1	1	-	-	-	-	-	-	No
15	130	1.5	1to1.5	2	-	1	-	-	-	-	-	-	No
16	80	1.5	1	2	-	-	-	-	-	-	-	-	No
17	90	2	1.5	2	1	1	-	-	-	1	-	-	No
18	55	4	3	3	-	1	-	-	-	-	-	-	No
19	220	2.5	1.5	2	-	1	-	-	-	-	-	1	No
20	75	3to4	2	3	-	1	-	-	-	-	-	1	No
21	150	1.5to2	1.5	2	-	-	-	-	-	-	-	1	No
22	145	2.5to3	2	3	-	-	-	-	-	-	-	-	No
23	195	2.5	1.5to2	4	-	1	-	-	-	-	-	-	No
24	280	2	1.5	5	-	1	-	-	-	-	-	-	No
25	150	5+	4+	4	-	1	1	-	-	-	-	1	No
26	155	5+	3to4	3	-	1	1	-	-	-	-	-	No
27	160	4	3to4	3	-	-	1	-	-	-	-	-	No
28	110	3	2	7	-	-	-	-	-	-	-	-	Yes
29	65	4	2.5	4	-	-	-	-	-	-	-	-	No
30	180	5+	4	3	1	-	1	-	-	-	1	1	No
31	160	3to4	2to3	5	-	1	1	-	-	-	-	-	No

Figure 1 Hedgerow Plan. Yellow lines = important hedgerows. White lines = hedgerows (not important). Black lines = PRow



Conclusion & Recommendations

14. Hedgerows labelled H7, H9 & H28 on Figure 1 all meet the criteria for 'Important' status under the Hedgerow Regulations 1997. Should development result in the loss or degradation of any of these hedgerows, then a suitable mitigation and compensation strategy will need to be produced and implemented.
15. The remaining hedgerows, although not qualifying as Important, will all meet the criteria for Habitat of Principle Importance under the NERC Act 2006 and Priority Habitat under the local BAP. On this basis, the scheme should aim for a 'no net loss' in hedgerow cover, with the landscape plan incorporating an equal or greater amount of diverse, native hedgerow to that that is lost. Wherever feasible, the preference should be to retain, protect and enhance existing hedgerows in situ.
16. Although generally species and structurally poor, the hedgerow network will have some function as a corridor for local faunal groups, such as bats moving from potential roosts within neighbouring housing to the west, out into the wider countryside. Retaining functional green corridors through the Site, either in the way of hedgerow, tree or woodland planting, should therefore be a material consideration during the design of the masterplan.

References

Hedgerows Regulations 1997 < <http://www.legislation.gov.uk/uksi/1997/1160/regulation/1/made>> view on 22.10.13.

Defra (2007). Hedgerow Survey Handbook – A standard procedure for local surveyed in the UK (2nd edition).

14.10 BRSA Houses



Bat Roost Suitability Assessment

Properties adjacent to
land at Chidswell, Dewsbury

Report reference: R-3280-10

August 2018

Report Title:	Bat Roost Suitability Assessment Properties adjacent to Land at Chidswell, Dewsbury
Report Reference:	R-3280-10
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Summary Statement

Of the seven properties surveyed, three (1012 Leeds Road, 1062 Leeds Road and 97 Chidswell Lane) were found to have some potential for supporting roosting bats.

Further survey in the form of a single visit at dusk is recommended for each of these properties, to establish if the features identified do support bats, and to assess levels of activity around the properties.

Introduction

1. Brooks Ecological Ltd was commissioned by the Church Commissioners for England to carry out a Bat Roost Suitability Assessment of seven addresses located around a proposed development site at Chidswell, Dewsbury, West Yorkshire.
2. The surveyed properties lie around the boundary of the site, being located at:
 - 97 Chidswell Lane
 - 1010 Leeds Road
 - 1012 Leeds Road
 - 1014 Leeds Road
 - 1016 Leeds Road
 - 1062 Leeds Road
 - 39 Heybeck Lane
3. Proposals are for the demolition of the buildings to provide access to the development site, which comprises a number of residential and employment units.

Figure 1 Showing the location of the surveyed properties.



Box 1 *Legal background*

Bats are afforded full protection under The Wildlife and Countryside Act (1981) plus amendments, and the Conservation of Habitats and Species Regulations 2010. Under these Acts it is an offence among others, to recklessly kill, injure or disturb bats. It is also an offence to destroy or obstruct a roost even if bats are not in occupancy at the time of the action.

There are no defences against contravention of the Conservation of Habitats and Species Regulations 2010 which means that it is important for detailed and well-designed bat surveys to be carried out, prior to carrying out activities that may impact upon bat roosts such as demolition of buildings or removal of trees.

Where bats are found within a potential development site, a license from Natural England may need to be secured if works that could otherwise contravene legislation are to be carried out. These licences are only issued where Natural England is satisfied that works are unavoidable and would not have a negative impact on the favourable conservation status of bats. A Natural England license requires that the potential development site has full planning permission and that bats were a material consideration of the planning permission.

Box 2 *Bat roosts*

Bats roost in buildings and trees in different locations depending upon time of year and environmental factors such as position of the sun, proximity to heat sources and feeding grounds. The following types are commonly referred to:

Transitional roosts

Bats frequently gather early in the season (March to April) before dispersing to summer roosts. Bats can be found in high numbers in these roosts for a very short period. Transitional roosts can also be found shortly before hibernation in August to October when bats (depending upon species) can gather in roosts not used earlier in the season.

Maternity roosts

These are among the most important roosts and are normally occupied from May to August. Depending on the species involved, some maternity roosts can contain a very significant proportion of the local population.

Summer (non-breeding) roosts

Small groups of non-breeding female and male bats can gather in these roosts or bats from a local population may choose to roost individually. There are normally a large number of suitable locations for summer non-breeding roosts and these may be routinely used or used only on an occasional basis. Irregularly used summer roosts can be very hard to find without unreasonable survey effort.

Mating roosts

Around September bats will gather in roost to mate; these are often in different locations than summer or breeding roosts.

Hibernation roosts

As bats in hibernation roosts are highly vulnerable to disturbance and bats can be present in large numbers these are considered to be among the most important bat roosts. Many species of bats roost in large and nationally important hibernation roosts associated with underground sites, many of which are well known and protected. However, the most common bat in the UK (the common pipistrelle) is largely unaccounted for in winter but thought to disperse and roost individually or in small groups in thermally stable cracks and crevices in thick walls or trees.

Local Status

- The application site is within the natural range of species of bats listed in Table 1.

Table 1 Bat species recorded within 100km of the application site.

Species	National status
Pipistrelles (<i>Pipistrellus pipistrellus</i> and <i>P. pygmaeus</i>)	widespread/common
Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>)	widespread/rare
Noctule (<i>Nyctalus noctula</i>)	widespread/frequent
Leisler's (<i>Nyctalus leisleri</i>)	widespread/rare
Brown long-eared (<i>Plecotus auritus</i>)	widespread/common
Natterer's (<i>Myotis nattereri</i>)	widespread/frequent
Daubenton's (<i>Myotis daubentonii</i>)	widespread/common
Whiskered/Brandt's (<i>Myotis mystacinus</i> and <i>M. brandtii</i>)	widespread/scarce
Alcathoe's (<i>Myotis alcathoe</i>)	local/unknown

Method

- A thorough daytime inspection of the properties was made on 7th August 2018 in order to look for evidence of bats and assess suitability for roosting. Evidence of bats may take the form of droppings, feeding remains, live bats, dead bats, stains on masonry or timber from the oils in bats' fur and claw marks made by bats regularly roosting in the same location.
- Bat roosting potential of the building was classified according to the following criteria set out in Table 2, taken from the Bat Conservation Trust Good Practice Guidelines (2016).

Table 2 Bat Roosting Suitability of buildings and trees.

Suitability	Criteria
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis or by a larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protections, conditions and surrounding habitats.

8. All properties were thoroughly inspected externally along all elevations using a high-powered torch and binoculars where appropriate. The exception was 39 Heybeck Lane which, due to limited access, could only be viewed along the northern and eastern elevations.

Records

9. As part of the original WYG Extended Phase 1 Habitat Survey Report, data was requested from West Yorkshire Ecology (WYE). A total of 33 bat records were returned, with species including common pipistrelle, noctule and indeterminate bat species.
10. Fifteen of the records relate to roosts, two of which are hibernacula, one has been excluded and six are transitional roosts. The closest roost record is for a pipistrelle sp. (*Pipistrellus* sp.) roost located approximately 650m north of the Chidswell development site.

Survey Results

11. The properties are located in a low-density residential area alongside roads linking the suburbs of Dewsbury with Tingley. The surrounding countryside comprises a mix of arable and pasture land with occasional blocks of woodland. Residential gardens and a weak network of hedgerows provides a link to foraging habitat in the local landscape, including Howley Hall Golf Course and wooded areas located within the farmland.

97 Chidswell Lane

12. A large detached property with rendered and painted walls in good condition with no potential access to cavity.



Figure 2

General view of 97
Chidswell Lane.

13. Wooden soffit boxes are found across the exterior of the building at the eaves. These sit flush to the walls and are very well sealed throughout, offering no potential roost features (PRFs). The underside of one small area of soffit is damaged to the front of the property, though the nature of this feature might be more suited to nesting birds than bats.



Figure 3

Showing damaged
area of soffit box to
front of property and
uneven stone roof
tiles.

14. Stone roof tiles are aged and whilst there were no missing or damaged tiles, this style of roof offers small PRFs within gaps between tiles and underneath tiles that are lifted across uneven areas of the roof structure.
15. Tiles might also be accessed at the rear gable end where the verge is exposed. The ridge of the roof appeared in good condition.



Figure 4

Open gable end providing access under tiles at verge.

16. A single storey detached garage is found to the side of the property. In common with the main residence, this has rendered walls which are in a good condition. The roof is flat and no PRFs were noted on this structure.
17. Two mature trees to the rear of the property (Birch and Maple) are in good condition with no features evident.



Figure 5

Single storey detached garage at 97 Chidswell Lane.

1010/1012/1014/1016 Leeds Road

18. These addresses comprise pairs of red brick semi-detached houses with a three-way pitched tiled roof. Mortar across the walls appears in good condition and the roof, including hip and ridge tiles, is likewise intact across the four properties apart from features highlighted below.
19. A mix of open and closed soffits occur at the wall tops and these are generally tightly fitting to the wall top with minimal gap between wood and brickwork. Some of the houses have been extended as described below.



Figure 6

General view of Nos. 1014-1016 Leeds Road showing style of property.

1010 Leeds Road

20. This property has a single storey extension to the side and a canopied porch to the front. The verge is well sealed with only occasional small gaps noted to the rear of the side extension. There is a slight gap under the soffit boxing to the side of the property.



Figure 7

Showing small gaps under tiles to rear of side extension, and small gaps under soffit box to side elevation at wall top.

1012 Leeds Road

21. This property has been extended with a dormer room above an attached brick garage to the side, this extending into the rear garden along the side of the property. The extension has a mix of pitched tile and flat felt roofs.



Figure 8

Extension to the side and rear of 1012 Leeds Road.

22. There is a narrow gap between the wooden soffit box and the brick wall to the rear of the main house. A wooden barge board running across the rear of the side extension (along the shared boundary with 1012 and 1014 Leeds Road) similarly has a gap behind it.
23. The dormer windows to the front and rear of the extension, above the garage, appear to have been clad in lead sheet. This has decorative scalloped edges and where these overlap there is a PRF between the sheeting.



Figure 9

Rear dormer window illustrating gap between sheet cladding; gap also present along barge board to side of extension.

1014 Leeds Road

24. The property has a bay window to the front which has a flat felted roof with no PRFs noted.
25. Very narrow gaps were noted between the soffit box and wall tops of the house.
26. One small gap was noted along the ridge of the roof to the rear, with occasional slightly raised tiles at the hip, otherwise the roof was in good condition.
27. A small brick and uPVC extension to the rear has a three-way pitched roof. Small gaps at the apex and corners are more suited to nesting birds than bats, otherwise the tiles and hip ridge appear in good condition.



Figure 10

Rear single storey extension.



Figure 11

Brick garage with concrete slab roof the side of 1014 Leeds Road.

28. There is a brick garage to the side of the property with a short parapet to the front. The roof is constructed of concrete slab. Although this is old, damage appears to be limited to shallow and blind features of missing concrete that would not provide PRFs for bats.

1016 Leeds Road

- 29. The mirror image of 1014 Leeds Road however with no rear extension.
- 30. The same shallow and blind features were noted on the concrete roof of the brick garage. No PRFs were noted on the house itself.

1062 Leeds Road

- 31. A brick detached house with bay windows to the ground and first floor and an attached single storey garage. The house has been clad to the front elevation, and mortar appears intact throughout.



Figure 12

General view of 1062 Leeds Road.

- 32. The property has a pyramid hipped tile roof with hip and ridge appearing well sealed.
- 33. There is evidence of a few small gaps at the wall tops behind open soffit boxing.
- 34. There are hanging tiles on the walls of the bay windows. A few gaps were noted here although no specific evidence of bats could be seen.



Figure 13

Gaps around hanging tiles on front bay windows.

- 35. The single storey garage/side extension has a flat felt roof with no PRFs.

36. A small single storey extension has also been added to the rear. There is a gap at the bottom corner of the verge where mortar is missing, otherwise the pitched roof is in good condition.



Figure 14

Gap at verge of rear extension.

39 Heybeck Lane

37. This property is a detached yellow brick bungalow with a pyramid hipped roof.



Figure 15

Showing property style of 39 Heybeck Lane (side elevation).

38. Exterior walls are in excellent condition and well-sealed, providing no potential roost features (PRF's).
39. Both the roof slates, hip and ridge appear intact and in a good condition.
40. There are boxed soffits to the front and side elevations. These appeared to be in a good condition though it was not possible to see how closely fitting they are against the wall tops.
41. There appears to be a modern uPVC conservatory extension to the rear. This type of fabric is of low suitability to roosting bats.
42. No bat droppings or other signs of bats were noted on any of the properties during the survey.

Evaluation

43. Based on the features present, the properties are assessed as having negligible to low suitability for supporting roosts.
44. A summary of the features and assessment for each property is shown below.

Table 3 Bat Roosting Potential Checklist.

Property	Key Features	Roosting Potential
97 Chidswell Lane	Uneven stone roof tiles with access at verge; hole in underside of soffit box.	Low
1010 Leeds Road	Very small gaps to rear of side extension and under soffit box to side elevation.	Negligible
1012 Leeds Road	Gap behind soffit box to side and rear; gap under barge board to rear of side extension; gaps under decorative metal sheeting on dormer windows to front and rear.	Low
1014 Leeds Road	Only very small gaps noted along soffits, hip and ridge.	Negligible
1016 Leeds Road	None seen.	Negligible
1062 Leeds Road	Gaps at wall top behind open soffit; loose hanging tiles on bay windows; gap at verge on rear extension.	Low
39 Heybeck Lane	None seen.	Negligible

45. No further survey work is recommended for those properties assessed as *Negligible*.
46. A single dusk emergence survey is recommended for the three properties assessed as having *Low* suitability for roosting bats.

Ecological Enhancement

47. To enhance biodiversity, developers could consider incorporating roost features into the proposed new builds. Integrated bat boxes can achieve this discretely and inexpensively, and/or bat boxes can be added to retained mature trees.
48. This should be considered as part of the wider development at Chidswell and is not discussed further here.

References

Bat Conservation Trust (2016) Bat Surveys for Professional Ecologists – Good Practice Guidelines

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

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

ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System
<http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity>

Conservation of Habitats and Species Regulations 2010
<http://www.legislation.gov.uk/uksi/2010/490/contents/made>

14.11 Bat Emergence Houses



Bat Emergence Survey

Properties adjacent to
land at Chidswell, Dewsbury

Report reference: R-3280-11
August 2018

Report Title:	Bat Emergence Survey Properties adjacent to land at Chidswell, Dewsbury
Report Reference:	R-3280-11
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Summary Statement

Following emergence survey work it is concluded that the properties are very unlikely to support roosting bats and that further survey effort is not required in support of this conclusion.

Introduction

1. Subsequent to the recommendations made in Brooks Ecological Ltd's Bat Roost Suitability Assessment (R-3280-10), detailed bat survey was commissioned at three properties at Chidswell, Dewsbury.
2. Information relating to local and legal status is provided in report R-3280-10 and is not repeated here. These two reports should be read together.

Method

3. Brooks Ecological Ltd specialise in bat surveys ranging from individual buildings through to complex sites requiring numerous visits with large teams. In terms of the survey effort, number of personnel and number of visits required to be able to properly evaluate the building(s) use by bats we refer to the Bat Conservation Trust, Survey Good Practice Guidelines (2016). However, these guidelines are not prescriptive and we approach each site individually as required using our professional judgement and significant experience base.
4. In this case, each property was visited on one occasion with a team of two surveyors, which was deemed sufficient to fully evaluate the potential use of these properties for roosting. Surveyors were positioned at suitable locations around the buildings to cover all aspects where bats could potentially emerge, and to establish activity levels around the site.
5. The surveyors, using heterodyne detectors, were in place at least half an hour before dusk and left once all species of bat would be expected to have left a roost and patterns of activity within the site had been appraised. Survey details are summarised in Table 1 below:

Table 1 Survey summary.

Survey Location & Date	Temperature Start/End	Weather	Invertebrate Activity
1062 Leeds Road 14.08.18	19°C / 19°C	90% cloud cover, humid, 7mph wind speed.	Moderate
1012 Leeds Road 15.08.18	18°C / 18°C	60% Cloud cover, humid, 15mph wind speed.	Low
97 Chidswell Lane 16.08.18	16°C / 14°C	30% cloud cover, dry, 11mph wind speed.	Low

Results

1062 Leeds Road – 14th August 2018

6. The first bat seen was a common pipistrelle at 20:48, 10 minutes after sunset. This bat was clearly seen to enter the site from the northern boundary. It commuted through the site flying south. The same flight path was then repeated at 20:56, again by a single common pipistrelle and this was seen to forage on Site before flying south off-site.
7. A single common pipistrelle was also seen flying from south of the Site commuting north along the eastern edge of the building at 21:07. After this time, two bats were seen to forage occasionally around the Site.
8. No bats were seen to emerge from the surveyed building.

1012 Leeds Road – 15th August 2018

9. Bat activity was very limited, with only two common pipistrelles being heard (not seen) north of the Site at 21:26 and 21:32.
10. At no point were any bats seen or suspected to emerge from the surveyed building.

97 Chidswell Lane – 16th August 2018

11. The first bat seen was a common pipistrelle at 20:47, 13 minutes after sunset. This was clearly seen to arrive on Site from the west and foraged over the trees at the east of the building until 20:59.
12. Two common pipistrelles were then seen foraging around the gardens to the north east of the building from 20:59 until 21:15. A common pipistrelle was then heard (not seen) at 21:30, concluding bat activity during the survey.
13. At no point were any bats seen or suspected to emerge from the surveyed building.

Evaluation and Recommendations

14. Following emergence survey work it is concluded that the properties are very unlikely to support roosting bats and that further survey effort is not required in support of this conclusion.
15. The proposed works can proceed with little risk of impacting on roosting bats.

General advice

16. Even where surveys have been carried out which demonstrate absence of roosting, site workers should always be aware that bats can move into buildings previously found not to support them. On this basis work should proceed with care and if a bat is found during the proposed demolition, works should stop immediately, and a professional ecologist should be contacted.

References

Bat Conservation Trust (2016) Bat Surveys For Professional Ecologists – Good Practice Guidelines

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

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

ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System
<http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity>

Conservation of Habitats and Species Regulations 2010

Stone, E.L. (2013) Bats and Lighting. Overview of current evidence and mitigation

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