Norwich Western Link

Environmental Statement - Chapter 11: Bats

Appendix 9: Temporary Storage Area Bat Survey Report

Author: WSP UK Limited

Document Reference: 3.11.09

Version Number: 00

Date: March 2024

Contents

Tables

1 Introduction

1.1.1 As a result of a change to the Red Line Boundary, to allow for a construction storage area within arable fields near to the Northern Woodland, happening after Ground Level Tree Assessments (GLTA) had already taken place, an additional GLTA was undertaken on 18th May 2023 to gather preliminary roost suitability data on adjacent woodland and hedgerow trees. This technical note presents the survey methodology and results for these GLTA surveys.

1.1.2 The technical note should be read in conjunction with **Appendix 11.3: 2021 Bat Roost Survey Report** (Document reference 3.11.03) and **Appendix 11.5: 2022 Bat Report** (Document reference 3.11.05), which outline the results of GLTA surveys undertaken in 2019, 2020, 2021 and 2022.

2 Methodology

2.1.1 The Survey Area comprised trees within a 25 metre buffer of the changes to the Red Line Boundary resulting from the additional temporary storage area. This area is shown on **Figure 1** of **Appendix 11.9a** (Document Reference: 3.11.09a). A number of trees within this 25m buffer were previously subject to GLTA surveys, these trees are excluded from this technical note and reported within **Appendix 11.3: 2021 Bat Roost Survey Report** (Document reference 3.11.03) and **Appendix 11.5: 2022 Bat Report** (Document reference 3.11.05).

2.1.2 With reference to the good practice guidelines and industry standards (Collins, 2016), a visual inspection of the trees from ground level using binoculars and a high-powered torch was undertaken to search for features which could provide potential roosting opportunities for bats such as:

- woodpecker holes;
- rot holes;
- hazard beams;

- cracks and splits (e.g. frost cracks);
- knot holes;
- cankers;
- dense ivy; and
- lifting/peeling bark.

2.1.3 Where potential roost features were identified, their location and a brief description were recorded in order to assess the overall potential for bat roosts to be present. Where possible, each feature was visually inspected for evidence of use by roosting bats, including:

- bat droppings in, around or below the potential roost feature;
- urine staining below the potential roost feature;
- scratch marks; and,
- characteristic staining (from fur oils).

2.1.4 Trees were categorised in line with the descriptions in **Table 2.1**. Trees categorised as having negligible suitability to support roosting bats are not discussed further in this report.

2.1.5 All GLTA surveys were completed by ecologists competent in recognising features suitable for use by tree roosting bats.

Table 2.1 Tree bat roost suitability classification (Collins, 2016)

Bat Roosting Suitability	Description Of Roosting Behaviour
Confirmed	A tree with features confirmed to be used by roosting bats either by historic records or evidence recorded during survey.

Bat Roosting Suitability	Description Of Roosting Behaviour
High	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, protection, conditions, and surrounding habitat.
Moderate	A tree with one or more potential roost sites that could be used by bats 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).
Low	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features with only very limited roosting potential.
Negligible	A tree with features of negligible value to tree-roosting bats.

2.1.6 For trees assessed as being of low, moderate, or high suitability, information on tree species, approximate height in metres, diameter at breast height (DBH) and age class was collected. Additionally, a ten-figure grid reference and photographs were collected for all trees assessed as low, moderate, or high suitability. Trees were assigned a reference number from 500 upwards to avoid duplication with reference numbers already used during previous surveys completed to inform the Proposed Scheme.

3 Results

3.1.1 The results of the GLTA surveys are presented in Table 3.1 and shown on **Figure 1** of **Appendix 11.9a** (Document Reference: 3.11.09a).

Table 3.1 GLTA survey results

Tree Reference	Tree Species	Age Class	DBH	Height (m)	Additional Information / description	Bat Suitability
500	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Branch cavity at 12m high, south-east facing.	Moderate
501	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Peeling bark present on trunk, and cracked limbs between 8m and 12m high, east, south, and west facing.	Low
502	Sycamore (*Acer pseudoplatanus*)	Mature	20-50	>15m	Dead limb with cavity at 3m high, east facing. Second branch cavity at 15m high, south-east facing.	Moderate
503	Ash (*Fraxinus excelsior*)	Mature	50-100	>15m	Dead limbs present at 3m high and 9m high, which appear to lead into cavities. Knot hole at 12m high, south-east facing.	High
504	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Trunk cavity at 5m high, south facing.	High
505	Beech (*Fagus sylvatica*)	Mature	50-100	>15m	Lifting bark present on two limbs between 8 and 15m high, south facing. Branch cavity between 9m and 12m high, south-east facing.	High
506	Unknown (dead tree)	Dead	20-50	10-15m	Dead tree with lifting bark at 10m high around all aspects of tree.	Moderate
507	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Broken limb with lifting bark at 10m high, south facing.	Moderate
508	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Dead limbs with lifting bark at 10m and 15m high, north facing.	High
509	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Lifted bark on trunk on all aspects, providing shelter for numerous bats behind. Dead limb with crevices at 10m high, south-east facing.	High
510	Oak species (*Quercus* sp.)	Mature	20-50	>15m	Broken limbs in canopy with lifting bark at 9m high, east facing.	Moderate
511	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Lifting bark on several limbs at various heights and aspects.	Low
512	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Branch cavity at 15m high, south facing.	Moderate
513	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Oak tree with broken limb at 15m high, south facing.	Moderate
514	Oak species (*Quercus* sp.)	Mature	> 100	>15m	Large tear out with lifted bark at 15m high, north-east facing	High
515	Oak species (*Quercus* sp.)	Mature	20-50	>15m	Lifting bark at broken limb at 12m high, south facing. Lifting bark on trunk at 15m high, south facing.	Moderate

Tree Reference	Tree Species	Age Class	DBH	Height (m)	Additional Information / description	Bat Suitability
516	Field maple (*Acer capestre*)	Mature	20-50	10-15m	Field maple with knothole on limb at 4m high south-east facing.	Moderate
517	Oak species (*Quercus* sp.)	Dead	50-100	10-15m	Large areas of lifting bark and trunk from 0m to 10m high, west, and south facing. Lifting bark on limbs from 8m to 10m high, north facing and 12m to 15m high north facing.	High
518	Field maple (*Acer capestre*)	Mature	> 100	10-15m	Cavity in exposed heartwood on trunk at 2m high, north facing.	Moderate
519	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Several broken limbs with cavities present between 6m and 12m high, north facing.	High
520	Oak species (*Quercus* sp.)	Dead	20-50	>15m	Dead oak lifting bark with low potential cracked limb at 15 m west facing.	Moderate
521	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Lifting bark around broken limb at 4m high, north-west facing.	Low
522	Oak species (*Quercus* sp.)	Mature	> 100	10-15m	Broken limb at 9m high, north-east facing. Tear out at 6m high, west facing.	Moderate
523	Unknown (dead tree)	Dead	50-100	10-15m	Cavity present at 1m high, east facing. Cracked limb at 4m high, west facing.	Moderate
524	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Dead branch with crevices at 5m high, west facing.	Moderate
525	Oak species (*Quercus* sp.)	Mature	20-50	10-15m	Dead limb with lifting bark in canopy at 15m high, west facing.	Low
526	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Dead limb with lifting bark at 6m high, south-east aspect.	Moderate
527	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Exposed heartwood with crevices on limb 15m high, south facing.	Low
528	Hornbeam (*Carpinus betulus*)	Mature	> 100	10-15m	Hollow trunk with several entry points from 2m to 3m high, from south-east and north-west aspect. Knot hole present at 2.5m high, south facing.	High
529	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Snapped limb with lifting bark at 10m high, south-west facing.	Moderate
530	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Broken limb at 9m high, north-east facing. Callus roll at 6m high, north-east facing. Both features do not appear to lead into a cavity.	Low
531	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Knot hole at 2.5m high, west facing.	Moderate
532	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Dead limb with crevices at 8m high, north facing, potentially leading into hollow.	Moderate

Tree Reference	Tree Species	Age Class	DBH	Height (m)	Additional Information / description	Bat Suitability
533	Oak species (*Quercus* sp.)	Mature	50-100	10-15m	Broken limb with cavity at 3m high, south facing.	Moderate
534	Oak species (*Quercus* sp.)	Mature	> 100	>15m	Cavity at pruning cut at 10m high, south-west facing. Knot hole at 11m high, south-west facing.	Moderate
535	Oak species (*Quercus* sp.)	Mature	50-100	>15m	Cracked limb with lifting bark at 15m high, north facing.	Moderate

4 References

Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).* London: Bat Conservation Trust.