



Norwich Western Link

Environmental Statement Chapter 11: Bats

Appendix 6e: Tree Felling Protocol

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Document Reference: 3.11.06e

Version Number: 00

Date: March 2024



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Appendix E – Tree Felling Protocol

1.1 Introduction

Overview

1.1.1 This document aims to manage risk and avoid impact to bats that may be present within trees at the time of clearance works. This protocol includes specific control measures, stipulated and included as part of the EPSML application. The measures detailed within this document, along with the pre-felling assessment approach apply to:

- confirmed roost trees (Appendix 10 Figures 11.8, 11.11, 11.14, 11.17, 11.20, 11.23, 11.24 (document reference: 3.11.10);
- precautionary approach (assumed roost) trees (Appendix 3a Figure A2.3 (document reference: 3.11.03a); and,
- high, moderate and low suitability trees within the woodland resource trees (Appendix 10 Figures 11.25, (document reference: 3.11.10).

1.1.2 This document does not include the exclusion of bat roosts from structures. Details relating to roost exclusion are provided within a method statement, which will form part of the EPSML application.

1.1.3 All tree-felling works covered by the bat EPSML will be undertaken under a watching brief provided by the Named Ecologist and / or their Accredited Agents: this includes all works which may affect confirmed roosts, precautionary approach (assumed roost) trees, and high / moderate/ low suitability trees within the Site Boundary. Accredited Agents will be suitably experienced ecologists with Natural England Level 2 Class (CL18) licences who have been approved by and will be working under the direction of the Named Ecologist.

1.1.4 All trees declared clear of bats and approved for felling by the accredited agents or Named Ecologist will be marked and recorded. The time periods associated with a tree being felled / sterilised, after a tree has been declared



free of bats, are dependent on the method used for the pre-felling assessment. Details are provided below.

- 1.1.5 Where capture and / or handling of bats is necessary, only the Named Ecologist, Accredited Agent or an Assistant directly supervised, may do so (unless bats are in immediate danger). Capture and / or handling of bats must only be undertaken in conditions suitable for bats to be active. If any licensed bat species are found and is accessible, each will be captured by a gloved hand or hand-held net, given a health check and then temporarily placed carefully into a draw-string calico cloth holding bat or similar. Once safely on the ground, any bats will be placed in a suitable hard-cased box for transport to the bat box locations/ release.

Timeframes

- 1.1.6 Timeframes for all tree-felling works covered by the bat EPSML will be set out in the work schedule component of the European Protected Species Mitigation Licence (EPSML).
- 1.1.7 Tree felling of confirmed roost trees and precautionary approach trees can only be undertaken during the bat active season, which is considered to be April to October (inclusive), dependent on temperature / weather. The temperature restrictions for felling works include restrictions such as works ceasing if night-time temperatures are consistently (four consecutive nights) 8 degrees or below). The Contractor and Named Ecologist will create a strategic felling programme at the time of works, to ensure that work is done an efficient / logical order that poses less risk for bats.
- 1.1.8 Trees supporting known maternity roosts will not be felled during the maternity season (taken to be May to August, inclusive, with local knowledge and annual fluctuations taken into account) and will have a retained buffer of surrounding trees and connective corridors (as retained trees and/or TFLs) over the maternity period (detailed below).
- 1.1.9 Where nearby works are occurring outside of this period, all confirmed roosts, precautionary approach (assumed roost) trees, and high, moderate and low



suitability trees will be marked out with suitable buffers. Additionally, connective corridors to foraging habitat outside of construction zones, will be temporarily retained and / or TFLs installed until felling can recommence in the bat active season. Buffers are as follows:

- 20m buffer - low conservation significance roosts (day / transitional roosts of common species), and high, moderate and low suitability trees included within the woodland resource; and
- 30 m buffer – high conservation significance roosts (all Annex II species, maternity, and hibernation roosts) and precautionary approach (assumed roosts) trees.

1.1.10 No known roosts will be felled during the hibernation period and will have a retained buffer of surrounding trees and connective corridors over the hibernation period.

1.1.11 For high, moderate and low suitability trees to be felled, if all features on a tree can be fully inspected to confirm the absence of hibernating bats (as detailed within climbed inspection surveys within the pre-felling assessment below), these trees may be felled during the hibernation period following review and guidance from the Named Ecologist / Accredited Agent. If a full search is not possible, or if bats and / or any evidence of bats are found during the pre-felling assessment, the tree must be buffered and left in situ until the bat active season.

Not Covered by Protocol

1.1.12 Felling methodologies for all negligible suitability trees (or those not specifically covered in the EPSML method statement) are not included within this document and will be covered by a Precautionary Working Method Statement (PWMS) for the Scheme and completed under direction of the Ecological Clerk of Works (ECoW).



Precautionary Approach (Assumed Roosts) Trees

- 1.1.13 Two precautionary approach (assumed roost) trees are due to be felled (Tree 04 and Tree 15 (Appendix 3a Figure A2.3 (document reference: 3.11.03a)), which are trees that were not subject to full survey effort, as per the BCT best practice guidance (Collins, 2016). This was due to Health and Safety restrictions. As these trees have not been subject to sufficient presence / likely absence surveys, a precautionary approach has been adopted to where confirmed barbastelle day roosts are assumed within these trees. This is considered to be a worst case scenario and suitable to inform valid impact assessment, and mitigation and compensation designs.
- 1.1.14 These trees are being included within the impact assessment through applying Licensing Policy 4 (LP4). However, at the time of application of the EPSML full assessment will be completed and these trees will either form part of the confirmed roost count (as per here) or part of the roost resource approach. It should be noted that these trees will be subject to the same mitigation requirements detailed within this document, no matter how they are classified as part of the final EPSML application. This is due to the fact that all confirmed trees and roost resource trees (high, moderate and low suitability) are all subject to the same level of mitigation.
- 1.1.15 Full surveys will be completed on each tree prior to the final licence application, to confirm the presence / likely absence of roosting bats. If these trees are confirmed as a bat roost during these surveys, they will be included within the method statement as a confirmed roost. If bats are found likely absent, the trees will be treated as per high, moderate and low suitability trees as part of the woodland resource (dependent on the roost suitability of the tree).

Reassessment

- 1.1.16 All trees will be reassessed at the time of felling to ensure that they are being treated under the correct felling approach. The results of these surveys will be provided in advance of any works commencing, and this document updated to



reflect any changes in regard to roost lost and / or potentially disturbed as part of the EPSML application.

1.1.17 Prior to any tree felling works commencing, a preliminary ground level roost assessment (GLTA) will be completed to confirm the presence or absence of Potential Roost Features (PRFs), using binoculars and a high-power torch as necessary. The GLTA will record the following:

- tree species and approximate age;
- description of any PRFs likely to support roosting bats (i.e. woodpecker holes, rot holes hazard beams, cracks, and splits); and
- the height and aspect of each feature.

1.1.18 This information will be used to class the tree as having low, moderate, or high suitability for roosting bats as per the bat roost potential classification listed within best practice guidance (Collins, 2016).

Pre-Felling Assessment and Felling Methods

1.1.19 The following pre-felling assessment methods are provided in order of preference:

1. Climbed inspection survey
2. Exclusion
3. Dusk emergence and dawn re-entry survey
4. Section / soft felling
5. Leave in-situ with buffer, connective corridor and re-assess

Climbed Inspection Surveys

1.1.20 For trees that are safe to climb, pre-felling climbing inspections (PCIs) immediately ahead of felling are the preferred method to confirm the absence of bats. Mobile Elevated Working Platforms (MEWPs) may also be used where access allows, where trees cannot be climbed.

1.1.21 All PRFs on the tree that can be reached / accessed will be inspected during the PCIs, undertaken on the same day as the planned tree-felling. All PCIs



will be undertaken by or under the supervision of the Named Ecologist and / or their Accredited Agents, equipped with an endoscope. If all PRFs can be fully inspected and the surveyor is confident a bat is not present, the tree can be felled and / or features sterilised.

- 1.1.22 To allow flexibility in the felling programme it is possible, over the short-term, for the PRFs to be made unusable for roosting bats via soft-blocking. However, any soft -blocked trees must be checked prior to felling, the feature should be inspected to ensure that the soft block is still in place and bats are unable to access the feature. Where a PRF contains bat(s), the bat will be captured / removed in line with Natural England capture and release procedures. This will only be undertaken in scenarios where the Named Ecologist deems it appropriate. Once the feature has been fully searched and it can be confirmed that no bats remain, the tree roost will be declared clear for felling by the Named Ecologist or Accredited Agent.
- 1.1.23 Where suitable features are present, and it is safe to do so, features may be temporarily blocked, removed without breaching any cavities, and translocated with bats present within. The roost feature will be taken to the woodlands identified for bat box installation and veteran feature creation, as shown on Appendix 10 Figure 11.26 (document reference: 3.11.10), attached to a retained tree and unblocked to allow for bats to emerge at dusk.
- 1.1.24 If it is not possible to conclude bat absence (for example where a long or complex PRF is present which precludes full endoscope inspection, or if parts of the tree are inaccessible due to fragility), and/or any recorded bat(s) cannot be removed by hand, the procedures below should be followed when bats are active (April to October, temperature / weather dependent as set out in Natural England procedures. This may require a combination of the methods below; the approach will be tree-specific and subject to confirmation with the Named Ecologist or Accredited Agent.



Exclusion

1.1.25 If the feature cannot be fully inspected (but is accessible) or a bat cannot be captured, a 'one-way' exclusion valve can be installed. The 'one-way' exclusion valve should be left in-situ for a minimum of 5 nights of suitable weather conditions prior to felling. Ahead of felling for PRFs that can be fully inspected but the bat couldn't be captured, a final inspection should be completed as per the PCI comments above. For features that cannot be fully inspected, a dusk emergence and/or dawn re-entry survey should be completed prior to felling, as per notes below.

Dusk Emergence and Dawn Re-Entry Survey

1.1.26 Where bats are present within a roost and cannot be safely captured or excluded using one-way exclusion valves, or where a tree is unable to be climbed and / fully inspected due to the features present, consideration will be given to the range of options available to the Named Ecologist or Accredited Agents to establish whether bats are present or absent and how best to fell the tree.

1.1.27 The options include undertaking additional emergence / re-entry surveys and section felling. A decision on the approach to be taken will be based on the nature of the PRFs, the associated safety considerations, the anticipated effectiveness of emergence / re-entry surveys given the time of year, and the ability to soft-fell safely.

1.1.28 Where emergence and re-entry surveys are undertaken, these will make use of night vision equipment (thermal imaging (TI) or Infra-Red (IR) cameras) in-line with BCT Guidelines (Collins, 2016) (BCT, 2022). The surveys must also be undertaken within weather conditions as per BCT Guidelines (Collins, 2016). If no evidence of bats is recorded during the process, the parts of the tree containing PRFs will then be soft and/or sectional felled within 24 hours of the preceding dusk survey/12 hours of the preceding dawn survey.



Section or Soft Felling

1.1.29 Unless a PRF can be fully searched during a climbed inspection survey to confirm the absence of bats, PRFs are to be section felled. Wherever possible, PRFs should be section felled in one piece avoiding any cavities under the guidance of the Named Ecologist or Accredited Agent. The section should be carefully lowered to the ground by rope. The feature should be re-inspected by the Named Ecologist or Accredited Agent and left in-situ on the ground, in an area of safety identified at the time of completing the works, for at least 24 hours before being removed, mulched or opened up.

1.1.30 Any bats found will be moved in line with Natural England capture and release procedures.

Remain In-Situ with Buffer and Reassess

1.1.31 If a bat remains in-situ and cannot be captured/removed, felling of that tree should be halted and the tree(s) plus the surrounding vegetation as a buffer left in situ. Buffers are as follows:

- 20m buffer – low conservation significant roosts (day / transitional roosts of common species), precautionary approach (assumed roost) trees, and high, moderate and low suitability trees included within the woodland resource; and
- 30 m buffer – high conservation high conservation significant roosts (all Annex II species, maternity, and hibernation roosts) and precautionary approach (assumed roost) trees.

1.1.32 The above process can be repeated (specific to that tree) in the following days, until it is confirmed that the bat has left the tree.

Capture of Bats

1.1.33 Following successful bat capture by Named Ecologist or Accredited Agent, a health check of the bat will be undertaken. If barbastelles are recorded, and the Named Ecologist / sufficiently experienced Accredited Agent present, the



bat will be ringed to gather data as part of the known ringing project within the wider area.

- 1.1.34 The bat will then either be transported immediately to a pre-installed bat box / roost mitigation feature in the woodland parcel which is detailed within Appendix 10 Figure 11.26 (document reference: 3.11.10) where access is possible or kept in a suitable hard-cased container until dusk and released near the site of capture. Bats kept in captivity and released at dusk will be cared for in line with the Bat Care Guidelines (Miller, 2016).

Felling Methods

- 1.1.35 Using forestry harvesters, lorry mounted grapple-saws or an excavator with mounted tree shears (or equivalent), trees can be felled once sterilised (or under the PWMS for negligible suitability trees).
- 1.1.36 For trees that cannot be climbed for health and safety reasons, these could be section-felled with the above equipment. However, the above protocol must be followed to clear the tree for felling first. If confidence cannot be assured, the tree should be secured at the stem by the machine and cut at the base before being carefully brought up to the ground (ensuring the tree remains upright) and then gently laid flat to the ground in the inspection area. The features would then be searched by the Named Ecologist and/ or Accredited Agent, who would confirm if the tree can be processed or requires to be left in-situ for 24 hours.
- 1.1.37 During the use of this equipment, every effort must be made to ensure retained trees (both temporary and permanently) and non-sterilised trees are not accidentally damaged by the works.

Reporting

- 1.1.38 A Site Log will be kept of all pre-felling procedure completed for licensed trees. These Site Logs should include the reassessment of tree categories/ upgrading/ downgrading, all licensable works, a record of bats captured and subsequent actions. This information must be compiled to complete any licence returns required.



1.2 References

BCT (2022) Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys. © Bat Conservation Trust. Available online at: [Open for BCT's Interim Guidance Note: Use of night vision aids for bat emergence surveys](#)

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

Miller, H. (ed.) (2016) Bat Care Guidelines (2nd edn). The Bat Conservation Trust, London. © Bat Conservation Trust 2016. Available online at: [Open for BCT's Bat Care Guidelines](#)

Mitchell-Jones, A. J. (2004) Bat mitigation Guidelines, English Nature, Peterborough. ISBN 1-85716-781-3