



Norwich Western Link

Environmental Statement Chapter 11: Bats

Appendix 6f: Bat Box and Veteran Feature Placement Principles

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Appendix F – Bat Box and Veteran Feature Placement Principles

1.1 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 bat box installation and veteran feature creation. It provides guidance on the selection of suitable trees and principles to be followed during placement of the 46 bat boxes and 43 veteran features currently proposed (at the time of creation). Additionally, if any further bat boxes or veteran features are required to be installed as part of the roost resource approach, their placement will follow the same protocols. This protocol includes specific control measures, to be implemented as part of the EPSML application.

1.1.2 This approach will also be followed for the placement of any additional bat boxes following the roost resource licensing approach.

1.1.3 All installation and creation works covered by the bat EPSML will be undertaken under a watching brief by the Named Ecologist and / or their accredited agents. 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 bat box installation and / or creation of veteran features by the Named Ecologist and / or accredited agents will be marked (such as the use of tree tags) and recorded.

1.2 Timeframes

1.2.1 Access to the Compensation Extent will be subject to either legally binding landowner agreements and/ or a compulsory purchase order (CPO); for this reason, installation of bat boxes and creation of veteran features may only proceed once the necessary arrangement is in place. Bat boxes will be installed prior to the felling of any confirmed roosts and trees with moderate or high suitability.



1.2.2 Creation of veteran features will commence once access has been confirmed in the Compensation Extent woodlands and be completed by the end of Construction Year 1.

1.2.3 Ahead of these works, woodland assessments will be completed. The principles of this approach are detailed in **Section 1.4**.

1.3 Location

1.3.1 Bat boxes will be installed in woodlands located within the Compensation Extent to increase the density and range of roost resource available to bats (**Figure 11.26**).

1.3.2 Bat box installation and veteranisation features will be located within woodlands that are known to support the bat populations impacted, including the barbastelle maternity colonies utilising the Scheme Extent. A number of sites are located across the Proposed Scheme and the current maximum distance between a known roost and these locations is approximately 1km. This maximum distances relates to a single roost location centrally within the Proposed Scheme. All other known roosts are within 650m of the bat box and veteran feature proposed locations.

1.3.3 To aid future monitoring required by the EPSML, woodland areas have also been selected in locations where long-term access, management and maintenance can be achieved, avoiding close proximity to the Proposed Scheme. All boxes and veteran features will be installed a minimum of 50m away from the operational road.

1.3.4 The proposed locations of bat boxes and veteran features are informed by baseline data showing the pattern of bat activity within and adjacent to the Red Line Boundary. The proposed locations are well-connected to habitats known to be used by bats.



1.4 Principles of Approach

1.4.1 Bat roosts in trees are considered to be transient due to the natural changes which occur as trees develop, mature and decay, influenced by environmental factors, such as storms, lightning strikes, damage caused by other falling trees, etc.

1.4.2 Therefore, it is not suitable to prescribe a detailed and fixed approach to the bat box installation, as tree characteristics will likely change between the submission of the draft bat EPSML and the start of construction. To allow flexibility in approach, bat box locations will be chosen at the time of installation by the Named Ecologist and / or accredited agent.

1.4.3 The proposed approach includes flexibility in placement, locations and number of bat boxes per woodland block to ensure the most appropriate trees are utilised at the time of installation. There are approximately 17.5 hectares of woodland available for the provision of bat boxes (46 boxes) and veteran features (43 features), and any additional boxes/features identified as required, as part of the roost resource approach.

1.4.4 The following principles of placement will be followed:

- Bat box installation and veteranisation techniques will be targeted on suitable trees (selected by the Named Ecologist and / or accredited agent) within woodland within the Red Line Boundary (refer to **Figure 11.26** for locations and detail).
- No bat boxes will be installed, or veteran features created until a bat daytime walkover survey (DWS) has been completed (Approach detailed in **Section 1.5**). This DWS will select suitable trees for installation and feature creation and will aim to select mature trees which can be identified as suitable from this initial assessment (referred to as confirmed suitable trees). If a tree cannot be fully assessed from the ground, it will be considered as a 'potentially suitable tree' for the purpose of installation of bat boxes or feature creation. Once all woodlands have been assessed, if the number



and/ or spread of trees confirmed to be suitable for installation of bat boxes or feature creation does not meet the principles within this protocol, an at-height assessment of the trees potentially suitable for this purpose will be considered.

- Where further assessment is required, aerial assessments will be completed to either select suitable trees and / or locations on suitable trees for the installation or creation.
- Providing roosts in proximity to the road poses a risk, notably to lower flying species that are susceptible to traffic collision injury and mortality. For this reason, the majority of larger areas of woodland intended to provide roosting resources to the local bat population are set back from the road by at least 50m.
- No more than 10 bat boxes will be installed per hectare of woodland block, to ensure the roost resource is spread throughout the woodland habitat, and no one location is saturated with roosting resource.
- No more than 5 veteran features will be created per hectare of woodland block.
- No more than three bat boxes will be installed per tree. No more than 2 veteran features will be created on any one tree. If a tree is to hold both compensation approaches, no more than 2 bat boxes and 1 veteran feature will be installed/created.
- The bat box type located within each woodland will be matched to the closest roosts lost within that location (where possible), a bat box suitable for the species recorded or a general use bat box from the given total count.
- Typically, trees selected for the creation of veteran features will be semi-mature trees, assessed as unlikely to develop into high-quality mature specimens. Existing high-quality mature trees and existing veteran trees will not be veteranised.



- All trees identified to hold the compensation features will be tagged for future identification purposes, to ensure correct identification during the EPSML monitoring period. Additionally, the GPS and What3Words location will be noted, as will a detailed description of each tree and compensation feature. A plan will be produced of all boxes and features provided within each woodland block.
- Bat boxes will be installed on suitable mature trees at approximately 3-4m high, with clear flight access. The bat boxes will be placed on different tree aspects (of that tree) to provide a variety of temperatures within boxes.

1.5 Daytime Walkover Survey

1.5.1 All trees within the Compensation Extent will be reassessed at the time of box installation and /or feature creation. The results of these surveys will be produced in advance of any loss of roost and trees included as part of the roost resource commencing and a summary document produced, to be issued to Natural England as part of the EPSML return.

1.5.2 A preliminary ground level tree 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;
- absence or presence of PRFs;
- location within the woodland, taking note of available spread of potential locations;
- 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.



- 1.5.3 This information will be used to class the tree as having no features (None), or potential roosting features (PRFs) and if they can be classified as PRF -I or PRF – M as per the bat roost potential classification listed within best practice guidance (Collins, 2023).
- 1.5.4 This information will be utilised to assess whether the trees are suitable for the installation of bat boxes and/or creation a veteran feature. If PRFs are identified, the location of the PRFs will be taken into account if boxes are installed or features created.
- 1.5.5 The assessment will also include risks to disturbance of roosting bats (and where required an assessment of presence) if they could be present at the time of installation and/ or creation.

1.6 References

Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6