HABITAT WORKS

Vyrnwy Reserve

Bat Tree Surveys Report

12th November 2024

PREPARED BY: JOE TRAVIS BSc (Hons) MSc ACIEEM, SENIOR ECOLOGIST

Habitat Works Ltd

Issued By: Joe Travis BSc (Hons), MSc, ACIEEM
Senior Ecologist

Date: 12th November 2024

_____

Approved By: Nick Birkinshaw BSc (Hons), MSc, ACIEEM
Managing Director and Founder

Date: 9th December 2024

Contents

Executive Summary

Habitat Works Limited (Habitat Works) was commissioned in July 2024 by the Canal and River Trust (hereafter referred to as 'the Trust') to undertake further bat surveys of a mature oak tree located within the plot of the proposed Vyrnwy Reserve, located near, Llanymynech, Powys, Wales (hereafter referred to as 'the Site'), to inform proposals for creation of a nature reserve at the Site.

It is not anticipated that the tree will be lost as per the proposals, however there is potential for the tree to be subject to indirect impacts from the proposals which may impact local bats which may potentially utilise the feature for both roosting and foraging.

Following the Ground Level Tree Assessment (GLTA), the tree was considered to contain multiple PRF-M features that are suitable for multiple bats and therefore may be used by a maternity colony. As such, in line with good practice guidelines (Collins, 2023), further survey is required prior to removal of the tree. This was undertaken as a combination of aerial (close) inspection surveys and nocturnal emergence surveys.

Although not strictly in line with good practice guidelines (Collins, 2023) in order to make the most thorough assessment it was considered appropriate to employ a combination of aerial (close) inspection surveys in addition to a nocturnal emergence survey, rather than undertaking three nocturnal surveys. This was decision was made as the tree will be retained under current proposals, and the surveys were undertaken to understand the level of potential disturbance of the proposals should local bats be utilising the tree for either roosting or foraging. As such, it was deemed appropriate to include a nocturnal survey in place of an aerial (close) inspection survey to provide additional information on bat activity.

Current proposals comprise the retention of the tree at the proposed Vyrnwy reserve. No bats were recorded roosting within the tree during the nocturnal and aerial (close) inspection surveys and therefore, in line with good practice guidance (Collins, 2023) it is considered that roosting bats are likely absent from the tree

However, bats are highly transient, and as such, may be roosting at any suitable PRF at any time. As such, and as per the proposals, it is recommended that the tree is retained throughout the works. Works should be planned to minimise disturbance caused to the tree, such as restricting use of artificial lighting throughout the construction or operational phases. It is recommended, that where possible, the proposals are undertaken at a significant buffer from the tree (minimum 5 m) to limit the indirect disturbance which may be caused throughout the works (e.g. vibrations from excavation of nearby ground to create ponds/footpaths).

1. Introduction

1.1 *Background*

1.1.1 Habitat Works Limited (Habitat Works) was commissioned in July 2024 by the Canal and River Trust (hereafter referred to as 'the Trust') to undertake further bat surveys of a mature oak tree located within the plot of the proposed Vyrnwy Reserve, located near, Llanymynech, Powys, Wales (hereafter referred to as 'the Site'), to inform proposals for creation of a nature reserve at the Site.

1.1.2 It is not anticipated that the tree will be lost as per the proposals, however there is potential for the tree to be subject to indirect impacts from the proposals which may impact local bats which may potentially utilise the feature for both roosting and foraging.

1.1.3 Following the Ground Level Tree Assessment (GLTA), the tree was considered to contain multiple PRF-M features that are suitable for multiple bats and therefore may be used by a maternity colony. In these circumstances good practice guidelines (Collins, 2023) requires that further survey be undertaken prior to removal of the tree. This was done as a combination of aerial (close) inspection surveys and nocturnal emergence surveys.

1.1.4 This report details the findings of the nocturnal bat survey and aerial (close) inspection surveys. Methodologies employed during the surveys are described along with the survey findings, evaluation, assessment and recommendations for any further survey work and/or mitigation/enhancement as required.

1.1.5 Recommendations are made in terms of impacts of the proposed development through habitat losses/potential gains on the Site post-development and the retention and protection of key ecological features.

2. Methodology

2.1 *Nocturnal Bat Surveys*

2.1.1 A single nocturnal survey was undertaken on 1st August 2024 following good practice guidelines to confirm the presence/likely absence of roosting bats form the tree (Collins, 2023). The delivery of the surveys was managed and undertaken by experienced bat surveyors positioned to ensure coverage of all features of the tree which displayed suitability for roosting bats.

2.1.2 Surveyors used a combination of visual assessment and ultrasonic detection using industry-standard recordable bat detectors and night vision aids (NVAs) including NightFox NVA which have inbuilt infrared lighting. Surveyors recorded the species and number of bats using any roost features within the tree (where present) and recorded incidental bat activity observed in the locality during the survey period. The dusk emergence surveys commenced 15 minutes prior to sunset and finished 1.5 hours after sunset. The surveys were conducted during a period where the weather conditions were predominantly dry, with relatively low winds and temperatures in excess of 10°C.

2.1.3 The nocturnal surveys were digitally recorded to allow bat echolocation calls to be analysed using Kaleidoscope sound analysis software, with species identification confirmed with reference to bat call parameters presented in '*British Bat Calls: A Guide to Species Identification*' (Russ, 2021). Video recordings were also taken to give greater confidence in the results of the surveys, allowing the option to review in the event surveyors were unsure about the findings on the day due to the diminishing natural light. Darkest point photographs of the NVAs are provided within Appendix 1 as per good practice guidelines.

2.1.4 Survey details are shown in Table 1 below, with surveyor locations and bat activity findings illustrated in Figure 2.

Table 1 – Nocturnal Bat Survey Details

Date/Time	Surveyors	Air Temp (°C)	General Conditions	Detector Type
01.08.2024 20:50 – 22:35 hrs Sunset: 21:05 hrs	**JT**, CB	Start: 20 End: 18	Dry, 0% cloud cover, very light breeze (Beaufort Scale (BS): 0)	Echo Meter Touch 2 Pro

*Surveyors (Licenced bat surveyors in bold): **JT – Joe Travis ACIEEM (Bat Licence Ref. S094584/1);** CB – Chris Birkinshaw.

2.2 *Aerial (Close) Inspection Surveys*

2.2.1 Aerial (close) inspection survey was undertaken on two separate visits by Senior Ecologist Joe Travis BSc (Hons) MSc ACIEEM (Welsh Bat Survey Licence Ref: S094584/1) and Greg Parrot in line with industry good practice guidance (Collins, 2023). These surveys were separated by a minimum of three weeks, where possible, and were undertaken on 22nd August 2024 and 19th September 2024.

2.2.2 The trees were subject to an assessment for their suitability to support roosting bats during the survey.

2.2.3 An individual tree may have several features of potential interest to roosting bats associated with it and it is not always possible to confirm usage of a feature by bats due to their transient nature. Consequently, it is customary when undertaking such surveys to assign each feature to a defined category of roosting potential as follows: negligible; PRF-I (PRF is only suitable for individual bats or very small numbers of bats

either fur to size or lack of surrounding habitats); or PRF-M (PRF is suitable for multiple bats and therefore may be used by a maternity colony) (Collins, 2023).

2.2.4 Trees were subject to detailed survey, including endoscopic inspection to identify the potential for the features to support roosting bats.

2.3 *Assumptions and Limitations*

2.3.1 In line with CIEEM guidelines, this report is valid for a period of 12 months. In the event that works have not been commenced by November 2025, an update assessment should be undertaken.

2.3.2 Although not strictly in line with good practice guidelines (Collins, 2023) it was considered appropriate to employ a combination of aerial (close) inspection surveys in addition to a nocturnal emergence survey, rather than undertaking three nocturnal surveys. This was concluded as the tree will be retained as per the proposals, and the surveys were undertaken to inform proposals and understand the level of disturbance of the proposals may have on local bats utilising the tree not just for roosting, but also as a foraging resource. As such, it was deemed appropriate to include a nocturnal survey in place of an aerial (close) inspection survey to provide additional information.

3. Findings and Evaluation

3.1 *Site Description*

3.1.1 The Site is located southwest of LLanymynech, Powys and is located along the western bank of the the River Vyrnwy, as detailed in Figure 1.

3.1.2 The Site is mostly bounded by pastoral fields, with sections of hedgerow and pockets of woodland present across the wider landscape. The Montgomery Canal is also present within the wider landscape.

3.2 *Nocturnal Bat Survey*

1st August 2024

3.2.1 No roosting bats were recorded during the survey (Figure 2.1).

3.2.2 The earliest bat recorded was a noctule at 21:27 hrs (22 minutes after sunset), however this was not observed by the surveyors. Soprano pipistrelle *Pipistrellus pygmaeus* and noctule *Nyctalus noctula* were recorded throughout the survey. Whilst no bats were observed in flight by the surveyors, they are considered most likely associated with the nearby mature vegetation along the River Vyrnwy corridor. The final bat was recorded at 22:24 hrs (69 minutes after sunset) pertaining to a noctule which was not observed in flight by the surveyors.

3.3 *Aerial (Close) Inspections*

3.3.1 No evidence of roosting bats was recorded during either aerial (close) inspection survey. Photographs taken during the surveys are provided in Appendix 2.

3.3.2 Multiple PRFs are present within the tree. These include large hollow limbs, both living and dead, which offer suitability for multiple bats, and are therefore considered to be PRF-M features. These offer a range of variance in shelter, with some on dead limbs being relatively open to the elements, while others on live limbs contain smaller entrances which are less susceptible to impacts from the wind and rain. These are present on both sides of the tree, which splits into two distinct trunks at approximately 2 m in height.

3.3.3 Additional PRFs visible from the ground are often not suitable for bats upon closer inspection, including callous rolls which do not lead to any form of crevice suitable for supporting roosting bats.

4. Impact Assessment and Recommendations

4.1 *Proposals*

4.1.1 The proposals for the Site include the creation of a nature reserve including newly dug ponds, linear channel and footpaths. It is not anticipated that the tree will be lost as per the proposals, however there is potential for the tree to be subject to indirect impacts from the proposals which may impact any local bats should they use the tree or any of its features for roosting or foraging from time to time.

4.2 *Legislation*

4.2.1 All species of bat occurring within the UK are included in Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Under regulation 41 bats are protected from deliberate capture, injury or killing, from deliberate disturbance and from deliberate damage or destruction of a breeding site or resting place (roost).

4.2.2 All UK bats are also included on Schedule 5 of the WCA 1981 (as amended). However, their protection is limited to certain offences. Under the 1981 Act (as amended) it is an offence to intentionally or recklessly disturb bats while they are occupying a structure or place used for shelter or protection, or to obstruct access to any such place.

4.2.3 Barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, brown long-eared bat *Plecotus auritus*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros*, noctule and soprano pipistrelle bats are included as priority species under Section 41 of the NERC Act 2006.

4.3 *Assessment and Recommendations*

4.3.1 Current proposals comprise the retention of the tree at the proposed Vyrnwy reserve. No bats were recorded roosting within the tree throughout the nocturnal and aerial (close) inspection surveys, and in line with good practice guidance (Collins, 2023), it is considered that roosting bats are likely absent from the tree.

4.3.2 However, bats are highly transient and may use any crack or crevice for roosting or shelter from time to time and as such, may roost at any suitable PRF at any time. As such, and as per the proposals, it is recommended that the tree is retained throughout the works. Works should be planned to minimise disturbance caused to the tree, such as not implementing artificial lighting throughout the construction or operational phases. It is recommended, that where possible, the proposals are undertaken at a significant buffer from the tree (minimum 5 m) to limit the indirect disturbance which may be caused throughout the works (e.g. vibrations from excavation of nearby ground to create ponds/footpaths).

5. References

Collins, J. (2023) '*Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn)'. The Bat Conservation Trust, London.

Russ, J. (2021). '*Bat Calls of Britian and Europe: A Guide to Species Identification*'. Pelagic Publishing, London. ISBN 9781784272258.

Figure 1. Site Location

Legend

Tree Location

0 50 100 150 200 m

HABITAT WORKS

The Canal & River Trust

Vyrnwy Reserve

Figure 1
Site Location

Basemap: Copyright Google 2024 | November 2024 | Scale - 1: 5000 @ A4 | Drawing Reference: 241112/F1/JT

Figure 2. Nocturnal Bat Survey Results

Legend

Tree Location

XX Surveyor Location and Initials

No bats were observed in flight by the surveyors during the survey

0 10 20 30 40 m

HABITAT WORKS

The Canal & River Trust

Vyrnwy Reserve

Figure 2
Nocturnal Bat Survey Results

Basemap: Copyright Google 2024 | November 2024 | Scale - 1: 1000 @ A4 | Drawing Reference: 241112/F2/JT

Appendix 1. Darkest Point Photographs of Night Vision Aids (NVAs)

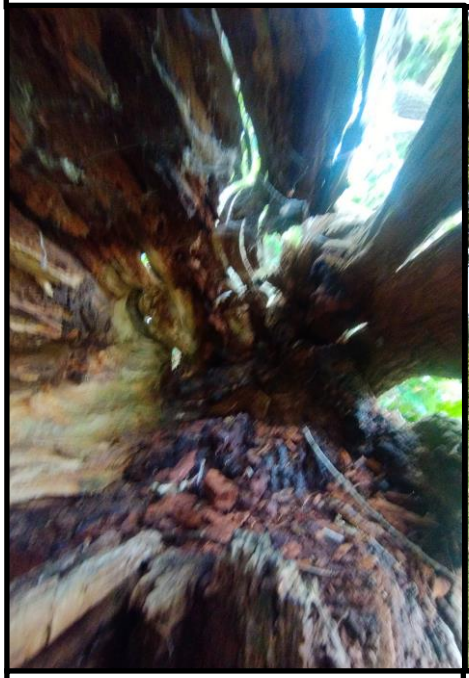
01/08/2024 - CB Location

01/08/2024 - JT Location

Appendix 2. Site Photographs

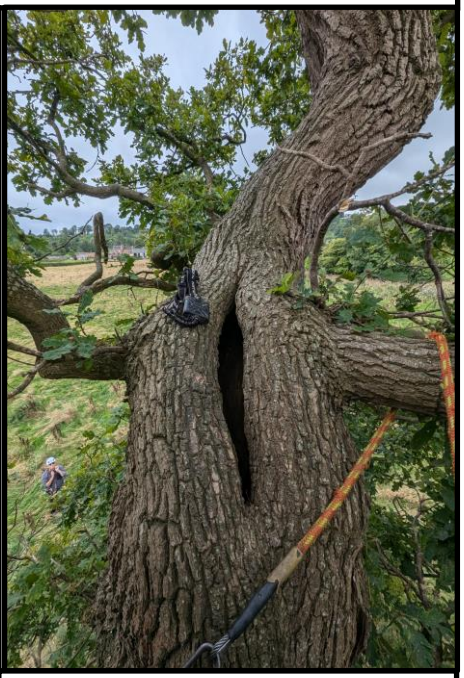
Photograph 1. Lone Oak tree within proposed reserve

Photograph 2. Example of hollow within dead limb



Photograph 3. Internal of dead limb hollow

Photograph 4. Example of callous roll with no PRF



Photograph 5. Example of hollow limb

Photograph 6. Example of sheltered PRF within hollow limb