Bat Emergence Survey

Land at Hooklands Farm,

Pulborough

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

1.1 The Ecology Partnership was commissioned by Ashdown Planning to undertake a bat emergence survey of a tree on land Hooklands Farm, RH20 3BA.

1.2 This follows a Preliminary Ecological Appraisal (PEA) of the site on 6th May 2022, which assessed tree T38 as having 'moderate' bat roost potential due to a number of features (pruning wounds) which could be suitable for roosting bats (Ecology Partnership, 2022).

1.3 This report presents the results of The Ecology Partnership's emergence surveys conducted on the tree on 3rd and 28th August 2022, and how the results may affect the proposed development.

Site Context and Status

1.4 The site is located north east of the town of Ashington, immediately north of the A24 and lies within the Horsham district of West Sussex (TQ1407 1727). The proposed development site covers approximately 5.9ha and consists predominantly of grassland, with treelines, a hardstanding access track, and deciduous woodland. The entire survey area is covered by an Environmental Stewardship Agreement and is bordered by priority habitat deciduous woodland to the south, north and west, with a treeline to the east. The wider landscape is comprised of agricultural land and woodland parcels with hedgerows and treelines.

1.5 It should be noted that the site lies just outside of the Sussex 12km Bat SAC wider foraging area, with the proposed development site *c.* 12.65km from these protected areas.

1.6 The aerial photograph in Figure 1 shows the site and its immediate surroundings, with the approximate location of the tree subject to further bat surveys. Figure 2 shows the bat features (pruning wounds subject to surveys).

Figure 1: Approximate location of the site survey area (red line) and tree to be surveyed (yellow dot) taken using Google Earth Pro (16th May 2022).

Figure 2: Bat features surveyed, image from infrared camera on tree T38.

Description of Proposed Development

1.7 Site proposals are for a new haul road to connect the eastern extent of London Road to Hooklands farm, avoiding the A24. The fields will also be re-graded (Figure 3). The proposals will involve the temporary removal of a large area of grassland, albeit this will be re seeded post re-grading. In addition, low numbers of trees within the treeline will be lost, some of which are ash trees due to ash die back, including the tree subject to further bat surveys (T38 as identified in the arboreal report). A small section of deciduous woodland is to be lost to allow for the road to be re-routed.

Figure 3: Site development proposals, provided by Penfold Verral 2022.

Legislation

1.8 Bats are covered by the following relevant legislation: the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010).

1.9 Under the WCA 1981 it is an offence to:

- intentionally, recklessly or deliberately disturb a roosting or hibernating bat i.e. disturbing it whilst it is occupying a structure or place used for shelter or protection)
- intentionally or recklessly obstruct access to a roost (i.e. a structure or place used for shelter or protection).

1.10 Under the CHSR 2010 it is an offence to:

- deliberately capture (or take), injure or kill a bat
- intentionally, recklessly or deliberately disturb a bat, in particular (i) any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) any disturbance which is likely to impair their ability in the case of hibernating or migratory species, to hibernate or migrate; or (iii) any disturbance which is likely to affect significantly the local distribution or abundance of the species to which they belong
- damage or destroy a breeding site or resting place (roost) of a bat.

2.0 Methodology

Bat Surveys

2.1 Following the Bat Conservation Trust guidelines (Collins 2016), the 'moderate' potential bat roost tree required two emergence surveys to be undertaken, within the optimal time period between May and August.

2.2 The aim of the surveys is to identify the potential use of the tree by bats, and if confirmed; identify the type of roost, access/egress points and the numbers of bats present within the building. The results of the survey will inform the application for a Natural England licence, if required.

2.3 Dusk emergence surveys commence at least 15 minutes before sunset until up to 2 hours after sunset, during which time, bats are identified and recorded. Bat surveys are required to be undertaken during suitable weather conditions, when conditions are relatively dry and mild with little/no wind. The approximate location of the surveyor is shown in Figure 2 below.

2.4 The Ecology Partnerships ecologists Aimee Littlechild BSc (Hons) conducted the survey, positioned on the access track facing the potential roost features (Figure 4). The surveyor was equipped with a Batlogger M, with a video recorder and infra-red light also used as a visual aid.

Figure 4: Approximate location of the surveyor and infrared camera around the bat features on tree T38.

Limitations

2.5 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment.

2.6 Light rain was present during the second survey and this is discussed in more detail in point 4.3.

3.0 Results

Dusk survey 3rd August 2022

3.1 The emergence survey was carried out on the tree on 3rd August 2022. Sunset was at 20:45 and the survey started at 20:30. The temperature at the start of the survey was 22°C, dropping to 19°C by the end of the survey. Conditions throughout the survey were dry and clear with a mild breeze (2 on the Beaufort scale).

3.2 The first activity of the survey was a common pipistrelle (*Pipistrellus pipistrellus*) heard but not seen at 20:55, closely followed by two pipistrelle bats at 20:57 observed commuting south down the parallel treeline from the farm towards the priority habitat woodland. A soprano pipistrelle (*Pipistrellus pygmaus*) was also observed commuting down the treeline at 21:02. Frequent foraging passes were recorded by both species until around 21:30, when foraging activity died down.

3.3 A noctule (*Nycatlus noctula*) was heard but not seen foraging over site at 21:07 for two minutes, then later on for a total of seven minutes between 21:13 and 21:25. Even though noctule was not seen due to the treeline canopy, it is considered that it was foraging over the eastern and western fields. A serotine (*Eptesicus serotinus*) was observed commuting south down the eastern grassland field, close to the treeline at 21:20.

3.4 Most notably, the rare Annexe II bat species barbastelle (*Barbastellus barbastellus*) was heard but not seen commuting at 21:21and 21:26, then observed commuting up the centre of the treeline at 21:28. A myotis (*Myotis sp.*) bat species was also heard but not seen at 21:40.

3.5 No bats were recorded emerging from the tree at any point during the survey and no other species were recorded foraging or commuting throughout the survey.

Dusk survey 22nd August 2022

3.6 The second emergence survey was carried out on the tree on 22nd August 2022. Sunset was at 20:10 and the survey started at 19:55. The temperature at the start of the survey was 18°C, dropping to 17°C by the end of the survey. Light rain (spitting) was present at the

beginning of the survey, which was off and on until 20:30, accompanied by a slight breeze (1 on the Beaufort scale).

3.7 The first activity of the survey was a common pipistrelle at 20:15, observed commuting south down the treeline, which then foraged up and down the western grassland field and treeline. Two soprano pipistrelle bats were observed foraging along the treeline at 20:31, whilst a noctule was heard foraging over site at 20:28, 20:58 and 21:03. Frequent foraging passes were then recorded until the end of the survey, largely by common pipistrelle.

3.8 Four barbastelle passes were heard but not seen between 20:44 and the end of the survey. A myotis was heard but not seen at 21:00, followed by a brown long eared bat (*Plecotus auritus*) at 21:10, then a Leislers bat (*Nycatlus leislerii*) at 21:14.

3.9 No bats were recorded emerging from the tree at any point during the survey and no other species were recorded foraging or commuting throughout the survey.

4.0 Discussion

4.1 The PRA revealed that T38 supported a few potential bat roost features, old pruning wounds. As such, the tree was assessed as having 'moderate' bat roost potential and two emergence surveys were required.

4.2 Across both surveys, no bats were observed emerging from the tree at any point, either by the surveyor or by watching back the infra-red video footage. Activity was considered moderate across both surveys, from at least eight bat species: common pipistrelle, soprano pipistrelle, noctule, serotine, Leislers, brown long eared, myotis species and the rare Annex II species Barbastelle.

4.3 Whilst light rain was present during the first 35 minutes of the second survey, this is considered not to have affected the results of the survey, as evidenced by the presence of common pipistrelle bat first recorded only five minutes after sunset, with the species first recorded ten minutes after sunset during the first survey, which was completely dry. Additionally, bat activity levels were similar on both surveys.

4.4 As T38 was not found to support any bat roosts during the emergence surveys, no further surveys are required and its removal is not constrained by the species. Furthermore, it is considered that the development will not impact the favourable conservation status of bats in the local area.

4.5 The parallel treeline feature was proven to provide good foraging opportunities for bats in the locality, and optimal commuting opportunities as it links priority habitat woodland north and south of the site. No artificial lighting is expected as part of the plans, and it is important that the parallel treelines remain unlit so foraging and commuting bats in the area can continue using this feature.

4.6 The site lies just outside of the Sussex 12km Bat SAC wider foraging area, and as such habitat removal does not have to take the SAC sites into consideration.

4.7 Notwithstanding this, it is considered that the removal of six trees within the treeline for the new haul road would result only in a small gap, which is not considered to significantly affect the treeline feature or break up the linear feature. The exiting mature trees and their canopy spread would still provide 'hop over' points so bats could still utilise the feature as a commuting route and foraging area. If the retained tree crowns do not provide this, it is recommended that newly planted trees are planed either side of the haul road, ensuring the bats can still fly within the site, including barbastelle.

Ecological enhancements

4.8 It is always recommended that enhancements for wildlife are included within any new works where possible.

4.9 Bat boxes can be hung on mature trees around the site to provide additional roosting opportunities. Recommended boxes include:

- Vivara Pro WoodStone Bat Box – A general purpose bat box that supports a range of species (Figure 5). These can be hung on trees in a variety of heights and aspects in order to provide a variety of micro-climates.

- Large Multi Chamber WoodStone Bat Box – This is a multipurpose box designed for larger colonies and a range of bat species including pipistrelles, noctules and brown long-eared bats. These should be hung on mature trees around the site (Figure 5).

Figure 5: Vivara Pro WoodStone Bat Box (left) and Large Multi Chamber WoodStone Bat Box (right)

4.10 The siting of bat boxes is important and have the best rate of occupancy when they are situated within or adjacent to bat-friendly features, such as native hedgerows, broadleaved woodland or mature tree-lines, providing connectivity to the wider landscape. The bat boxes should be situated where they are sheltered from strong winds and should be exposed to the sun for most of the day, therefore southern aspects are favourable. Multiple boxes may be hung on one large tree, facing different aspects. Bat boxes should be hung as high as possible, preferably around 5m high.

4.11 Trees removed as per site plans could be compensated by new trees planted across site. These should include native species of value to wildlife such as oak (*Quercus sp.*), ash (*Fraxinus excelsior*), hazel (*Corylus avellana*), beech (*Fagus sylvatica*), cherry (*Prunus sp.*), hornbeam (*Carpinus betulus*) and rowan (*Sorbus aucuparia*), wayfaring tree (*Viburnum lantana*), yew (*Axus baccata*) and privet (*Ligustrum vulgare*). Fruit trees could also be planted with species such as apples, pears and damsons. Fallen fruit also provides good foraging opportunities for a range of species, including birds, badgers and hedgehogs.

4.12 Wildflower meadows can contain a high diversity of plant species which support many species of insects and therefore provide food for small mammals, birds and bats. Not only is this habitat important for biodiversity but it provides benefits in terms of aesthetics, air quality, carbon sequestration, drainage, health and well-being and reduced management frequency and costs.

4.13 The new graded field and landscaped soil areas is proposed to be established as a wildflower meadow. To establish successfully, it is important that the soil imported should be sub soil, to ensure less nutrient rich soil and lower chance of undesirable species outcompeting wildflower species.

4.14 The following should be considered when creating wildflower meadows:

- Use an appropriate seed mix from local native species stockists and tailor them to the soil type present.
- Before sowing, the ground needs to be prepared through ploughing or rotovating.
- Seeds are best thrown in March-April or August-September.
- Plug plants can be used for species that are difficult to establish from seed such as meadow cranesbill (*Geranium pratense*), field scabious (*Knautia arvensis*) and clustered bellflower (*Campanula glomerata*). These should be planted in weed-free soil in late March-April and should be well-watered.
- Ensure yellow rattle (*Rhinanthus minor*) is included withing the seed mix as this will help to reduce competition from rigorous grass species.
- A lot of management is required until establishment but after this the meadows only need to be cut once or twice a year.

4.15 Planting the base of the treelines and woodland edge with herbaceous plants and bulbs will attract bees, butterflies and other insects as well as providing ground cover for smaller animals. Seeds that are tolerant of semi-shade and are suitable for sowing beneath newly planted or established hedges should be used. The following species can include the mix:

- Yarrow (*Achillea millefolium*)
- Agrimony (*Agrimonia eupatoria*)
- Garlic mustard (*Alliaria petiolata*)
- Common knapweed (*Centurea nigra*)

- Wild basil (*Clinopodium vulgare*)
- Hedge bedstraw (*Galium album*)
- Wood avens (*Geum urbanum*)
- Oxeye daisy (*Leucanthemum vulgare*)
- Ribwort plantain (*Plantago lanceolata*)
- Cowslip (*Primula veris*)
- Selfheal (*Prunella vulgaris*)
- Red campion (*Silene dioica*)
- Bladder campion (*Silene vulgaris*)
- Hedge woundwort (*Stachus sylyatica*)
- Upright hedge parsley (*Torilis japonica*)
- Tufted vetch (*Vicia cracca*)

4.16 Log piles can be established within the site, particularly along the woodland edge. These are important for saprophytic insects such as beetles that noctules and serotines forage for. Log piles can be further enhanced by growing flowering climbers over them, for example clematis and honeysuckle. These nectar-rich plants are also an important food source for invertebrates, including moths.

5.0 Conclusions

5.1 Two emergence surveys were required for T38, which was previously assessed as having 'moderate' bat roost potential. The surveys were undertaken on 3rd and 22th August 2022 in suitable conditions.

4.17 No bats were recorded emerging from the tree at any point during the surveys. General bat activity on site was considered to be moderate by a minimum of eight UK bat species: common pipistrelle, soprano pipistrelle, noctule, serotine, Leislers, brown long eared, myotis species and the rare Annex II species Barbastelle.

5.2 Tree T38 was not found to support any bat roosts during the emergence surveys, and as such, no further surveys are required and the removal of the tree is not constrained by the species.

5.3 The parallel treeline feature was proven to provide good foraging opportunities for numerous bat species in the locality, and optimal commuting opportunities linking priority habitat woodland north and south of the site. It is important that the treeline remains unlit so foraging and commuting bats in the area can continue using this feature.

5.4 It is considered the development works will not have a significant impact on the habitat features on site and will not impact the favourable conservation status of bats in the local area, including barbastelle.

6.0 References

Bat Conservation Trust., (2018)., *Bats and artificial lighting in the UK.* Guidance Note 08/18, London.

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Lintott, P., & Mathews, F. (2018). *Reviewing the evidence on mitigation strategies for bats in buildings informing best-practice for policy makers and practitioners.*

Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.

The Ecology Partnership., (2022)., *Preliminary Ecological Appraisal, Land at Hooklands Farm.* The Ecology Partnership, Leatherhead.

Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

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