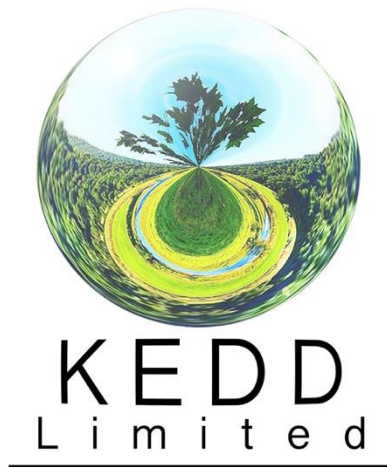




**Ballswood
Update Bat Roost Survey Report**

in respect of

***Planning Application For 2No. Changes to the Limits of Extraction within
the Existing Permitted Planning Boundary of Ballswood Quarry***

for

Cheshire and North Wales Sand and Gravel Ltd

Prepared By

Kedd Limited

July 2022

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1.0 INTRODUCTION

1.1 Kedd Limited have been commissioned to undertake update Bat Roost emergence/re-entry surveys at Ballswood Quarry, hereafter referred to as 'the site'.

1.2 These surveys are being undertaken as NRW and Wrexham Councils Ecologists have requested update surveys on the onsite horse chestnut (*Aesculus hippocastanum*). These surveys were requested as the previous survey information is now out of date.

Scope of Works

1.3 The scope of works is to determine:

- The presence/absence of bats roosting in the mature trees on site.

1.4 All UK bat species are fully protected under British law which makes it an offence to deliberately kill or injure individuals, damage their breeding or resting places, and/or obstruct access to their breeding or resting places.

1.5 Sufficient ecological information is required to fully inform the scheme design and the proposed works. Reports will enable the project to satisfy all current UK and European legal wildlife requirements, as well as national and local planning regulations. All public bodies have statutory obligations under the Nature Environment and Rural Communities Act 2006 to conserve and enhance biodiversity.

Site location and description

1.6 Ballswood Quarry is located at Gegin Lane, Wrexham, LL12 0NU, and is one of two active sand and gravel quarries in the County Borough of Wrexham. Ballswood Quarry is operated by Cheshire and North Wales Sand and Gravel Ltd.

1.7 The majority of the site is comprised of existing quarry, with areas of scattered scrub and tall ruderal vegetation located around existing soil bunds. The boundaries of the existing quarry are comprised of broad-leaved semi natural woodland and hedgerows. There are a number of waterbodies located within the existing quarry. The eastern section of the site is comprised of arable fields and heavily grazed improved grassland.

Proposed Development

- 1.8 The proposed development involves the 2 extensions (Area A and Area B) which are within the permitted red line boundary of the existing Ballswood Quarry, although outside the extraction area on the approved plans. Access to the site for the purpose of extending mineral extraction from the existing quarry to the west would best be supplied through the existing quarry site. The proposed development will release currently sterilised mineral within the permitted planning boundary of the site.

2.0 LEGISLATION

2.1 Bats are a European Protected Species under the EC Habitats Directive. In England and Wales all bat species are fully protected under The Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended).

2.2 Under this legislation, it is illegal to:

- intentionally or deliberately* kill, injure or capture (or take) bats
- deliberately disturb bats (whether in a roost or not)
- recklessly disturb roosting bats or obstruct access to their roosts
- damage or destroy bat roosts
- possess or transport a bat or any part of a bat, unless acquired legally
- sell or exchange bats, or parts of bats.

* In a court, 'deliberately' will probably be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence which his/her action will most likely have.

2.3 Some bat species are also included on the S41 list of UK Biodiversity Action Plan species. Under the Natural Environment and Rural Communities (NERC) Act 2006, local authorities must consider the conservation of these species in planning decisions.

2.4 In many cases, it should be possible to avoid harming the bats or damaging/blocking access to their habitat. If this cannot be avoided, a mitigation licence will need to be granted from Natural Resources Wales (NRW) prior to works commencing. Planning Permission will need to be granted prior to this application.

3.0 ASSESSMENT METHODOLOGY

Desktop Study

3.1 In order to compile background information on the site and its immediate surroundings, a desk study was undertaken in March 2020. The full results of the desk study can be found within the Preliminary Ecological Appraisal Report; pertinent records for bat species are included within the results section of this report.

3.2 Information on sites of nature conservation interest within a 2km radius of the centre of the site was obtained from the Countryside Council for Wales website. In addition, Cofnod (the local record centre for North Wales) was commissioned to undertake a data search for all protected and notable species and all sites of conservation importance within 2km of the site.

Roosting Habitat Assessment Criteria

3.3 Bats can use trees to rest, give birth, raise young and/or hibernate. Bat roosts may be found in the following features –

- Woodpecker holes, natural cracks and rot holes in trunks and branches
- Frost cracks
- Trunk and branch splits
- Hollow sections of trunk and branches
- Loose bark
- Cavities beneath old root buttresses and coppice stools
- Dense epicormic growth
- Dense ivy cover

3.4 Trees were surveyed from ground level using binoculars to assess the presence of any of the above features.

Tree Emergence/re-entry roost Surveys

3.5 The methodology for the bat emergence surveys broadly followed that described in the Bat Conservation Trust Good Practice Guidelines (3rd Ed 2016) for emergence surveys.

3.6 Three emergence survey were completed on the horse chestnut tree at the south side of the compound which had moderate roosting potential. Surveys commenced at

sunset and continued for 1.5 hours. Surveyors were equipped with EchoMeter Touch and Android devices with recording capability and also Duet Batbox detectors. Two surveys were undertaken at dusk for the allotted time and one additional survey was undertaken at dawn, 1.5 hours before sunrise.

Surveyors

- 3.7 Bat Surveys were conducted by Principal Ecologist S. Pagett (NE licence number 2018 – 34022-CLS-CLS).

Accurate Lifespan of Ecological Data

- 3.8 The majority of ecological data remains valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for approximately 2 years, notwithstanding any considerable changes to the Site conditions.
- 3.9 It should also be noted that bats are highly mobile species and will move throughout the landscape using multiple available habitats/roost spaces. Therefore, bats may be found in suitable roosting spaces during any part of the year.

Ecological Survey Constraints and Limitations

- 3.10 There were no limitations or constraints during survey efforts throughout the surveys conducted in May and June 2022.

4.0 RESULTS

Roosting Habitat

- 4.1 The horse chestnut tree located within the site was originally assessed as providing a moderate roosting potential due to a crack located underneath ivy within the tree. However, since the previous survey in 2020, there is now a large hole located within the centre of the tree which appears to have been created by grey squirrel (*Sciurus carolinensis*). Grey squirrel were observed nesting within the tree prior to the commencement of the 2022 surveys.

Species Records

- 4.2 COFNOD returned a number of records within 2km of the site boundary for common pipistrelle, noctule (*Nyctalus noctule*), natterer's bat (*Myotis nattereri*), soprano pipistrelle (*Pipistrellus pygmaeus*) and brown long-eared bat. The closest records for bats found to the site boundary were two counts of unknown bat species (*Chiroptera*) along the southern boundary of the site.
- 4.3 NBN returned all the same species as COFNOD, however also Brandt's bat (*Myotis brandtii*) was recorded in 2016, and lesser horseshoe bats (*Rhinolophus hipposideros*) in 2017. Both located south of the site boundary in the Gresford urban area.

Previous survey information from 2020 survey

- 4.4 Three bat roost surveys were undertaken on the 21st July 2020, 7th August 2020 and on the 13th August 2020. The survey visit on the 7th August was undertaken at dawn. Table 1 again outlines the weather conditions for all of the surveys undertaken. All of the roost surveys were undertaken on the mature horse chestnut Tree in the quarry compound.
- 4.5 A brown long eared bat was detected emerging from the tree on the final survey (Table 7), as well as soprano pipistrelles' emerging on two occasions on the initial survey (Table 5). Common pipistrelles' and noctules' were also detected foraging around the tree and the adjacent woodland belt.

Tree emergence/re-entry roost Surveys

- 4.6 A total of three surveys were conducted on the on the 05/05/2022 and the 24/05/2022 began at 15 minutes before sunset which last night and went until 1.5 hours after sunset. The survey on the 10/06/2022 began 2 hours before sunrise and continued

until 15 minutes after sunrise. All surveys were undertaken in suitable weather conditions.

- 4.7 An initial assessment was undertaken in order to identify the best position to view the tree during the survey. Due to the main roosting feature being a large crack in the trunk, the survey viewpoint was undertaken from the south-west of the tree.
- 4.8 During all three the surveys no bats were observed emerging from the tree. Species recorded foraging include early noctules foraging over the quarry from around 20.43 – 20.59. Other species observed foraging include common and soprano pipistrelles in low numbers foraging through the quarry courtyard. One brown-long eared bat was also observed.
- 4.9 Since the previous surveys conducted in 2020, grey squirrels have now taken over the centre tree and therefore it is assessed as highly unlikely that bats are present roosting within this tree. Figure 1 shows the photograph of the roosting feature taken from the emergence/re-entry position from the surveys. There were no other roosting features observed within the tree.

Figure 1 – A view of the roosting feature located in the horse chestnut tree onsite.



- 4.10 The full results of the surveys are found within Tables 1-3 below.

Table 1 – Bat Emergence Survey 1- Dusk					
Project/Location		Ballswood Quarry	Date		05/5/2020
Surveyors		SP			
Sunset		20:47	Sunrise		N/A
Survey Start		20.32	Survey End		22.47
Start Temperature		20.1 Degrees Celsius	End Temperature		17.8 Degrees Celsius
Other Weather Conditions (Beaufort Scale 1-14)		40% Cloud Cover, still - Beaufort Scale 1			
Time	Species	Emerging/re -entry	Level of Activity* (Rare, Occasional, Frequent, Constant)	Behaviour (eg foraging, commuting)	Details (eg. Location of emerging bat)
20.43	Noctule	No	Occasional	Foraging	In the distance above the main quarry
20.59	Noctule	No	Rare	Foraging	Foraging above quarry
21.21	Noctule	No	Rare	Foraging	Heard not seen
21.30	Soprano pipistrelle	No	Occasional	Foraging	Through quarry plant site
21.31	Soprano pipistrelle	No	Rare	Foraging	Heard not seen
21.41	Common pipistrelle	No	Rare	Foraging	Heard not seen
21.49	Common pipistrelle	No	Frequent	Foraging	Through quarry plant site
21.56	Noctule	No	Frequent	Foraging	HNS
22.01	Soprano pipistrelle	No	Rare	Commuting	Brief pass

*Levels of activity are defined as Rare (1 pass), Occasional (2-3 passes), Frequent (4-6 passes), Constant (constant).

Table 2 – Bat Emergence Survey 2 - Dusk					
Project/Location		Ballswood Quarry	Date		24/5/2022
Surveyors		SP			
Sunset		21:18	Sunrise		N/A
Survey Start		21.03	Survey End		23.18
Start Temperature		14.7 Degrees Celsius	End Temperature		13.3 Degrees Celsius
Other Weather Conditions (Beaufort Scale 1-14)		5% Cloud Cover, Moderate breeze – Beaufort scale 4			
Time	Species	Emerging/ re-entry	Level of Activity* (Rare, Occasional, Frequent, Constant)	Behaviour (eg foraging, commuting)	Details (eg. Direction of travel
21.51	Noctule	No	Occasional	Foraging	HNS – distant foraging
22.00	Soprano pipistrelle	No	Rare	Commuting	Observed flying past tree and into the quarry
22.15	Soprano pipistrelle	No	Rare	Commuting	HNS – distant brief pass
22.40	Common pipistrelle	No	Constant	Foraging	Foraging within quarry plant site
22.51	Soprano pipistrelle	No	Rare	Commuting	HNS – brief pass
23.00	Brow long-eared	No	Rare	Commuting	HNS – brief pass

* Levels of activity are defined as Rare (1 pass), Occasional (2-3 passes), Frequent (4-6 passes), Constant (constant).

Table 3 – Bat re-entry Survey 3 – Dawn					
Project/Location		Ballswood Quarry	Date		10/06/2022
Surveyors		SP			
Sunset		N/A	Sunrise		4.47am
Survey Start		3.00am	Survey End		5.02am
Start Temperature		13.2 Degrees Celsius	End Temperature		12.5 Degrees Celsius
Other Weather Conditions (Beaufort Scale 1-14)		10% Cloud Cover, Still – Beaufort scale 1			
Time	Species	Emerging/re-entry	Level of Activity* (Rare, Occasional, Frequent, Constant)	Behaviour (eg foraging, commuting)	Details (eg. Direction of travel)
4.09	Noctule	No	Rare	Commuting	HNS – brief pass

* Levels of activity are defined as Rare (1 pass), Occasional (2-3 passes), Frequent (4-6 passes), Constant (constant).

5.0 IMPACTS

- 5.1 The site proposals are to include the removal of the horse chestnut tree present within the existing quarry plant site.
- 5.2 Since the previous survey conducted in 2020, grey squirrels are nesting within the centre of the tree as this tree is hollow through the centre. Based upon this and the three new bat emergence/re-entry surveys, it is therefore assessed as unlikely that bats are currently roosting within the tree.
- 5.3 It is recommended that mitigation measures are provided in order to ensure further suitable roosting habitat for bats is present on the site.
- 5.4 The client 'Cheshire and North Wales Sand and Gravel Limited' has agreed to carry out the following mitigation measures in section 6 below.

6.0 MITIGATION

General Mitigation Measures

- 6.1 The ecological impact hierarchy requires that all steps are taken to avoid adverse impacts to habitats and species within the affected areas. Only where impacts cannot be avoided, steps should be taken to mitigate for any losses within the scheme boundary. In cases where all options for on-site mitigation are not possible, offsite compensatory measures can be considered.

Woodland Planting

- 6.2 The restoration proposals are to include the creation of additional areas of broad – leaved woodland. This should include the planting of native species to form a linear network for commuting bird species.

Roosting Bats

- 6.3 It is noted that the horse chestnut tree in the compound is to be removed, which was previously found to have both brown long eared bats and soprano pipistrelle bats emerging from the trunk hole, however no bats were observed using the tree during the 2022 surveys.
- 6.4 The data recorded for roosting bats in trees only valid for one year as roosting bats can frequently change roosting locations on a yearly basis. Therefore, it is recommended further surveys are conducted prior to the removal of this tree, closer to date when the tree is to be removed.
- 6.5 In the case no roosting bats are identified during later surveys, a climbing tree inspection should be completed by a suitably licenced bat ecologist within 48 hours prior to the tree's removal. This survey can be completed alongside the tree removal as part of a soft feeling technique.
- 6.6 In the event that roosting bats are identified during any of the above surveys, a Mitigation Licence for a European Protected Species Licence (EPSL) will be required from Natural Resource Wales (NRW) prior to the tree removal being completed.

Bat Boxes

- 6.7 As the horse chestnut tree within the site is to be removed, it is recommended that bat boxes are installed within the woodlands to be retained surrounding the site

boundary. Six bat boxes should be installed on trees located within established woodlands surrounding the site boundary prior to the removal of the trees. The bat boxes should be Schwegler types because of their durability and should include three 1FF type box (see Figure 1) and three 2FF type boxes (see Figure 2). The boxes should be installed facing south, high on the trees (above 4m) and should be positioned away from light sources.

Figure 2 - Schwegler 1FF type box suitable for roosting bats.



Figure 3 - Schwegler 2F type box suitable for roosting bats.

7.0 SUMMARY

- 7.1 Kedd Limited have been commissioned to undertake an update Bat Roost Survey at Ballswood Quarry. These surveys are being undertaken as the previous Bat Roost survey information is now out of date and therefore a further three bat roost surveys have been conducted on the horse chestnut tree located within the existing Ballswood Quarry.
- 7.2 The proposed development involves the 2 minor extensions which are within the permitted red line boundary of the existing Ballswood Quarry, although outside the extraction area on the approved plans. Access to the site for the purpose of extending mineral extraction from the existing quarry to the west would best be supplied through the existing quarry site. The proposed development will release currently sterilised mineral within the permitted planning boundary of the site.
- 7.3 Within Area B there is currently a horse chestnut tree which will be removed as part of the site proposals. Bat emergence/re-entry surveys have been conducted on this tree.
- 7.4 During all three the surveys no bats were observed emerging/re-entering the tree.
- 7.5 Species recorded foraging include early noctules foraging over the quarry from around 20.43 – 20.59. Other species observed foraging include common and soprano pipistrelles in low numbers foraging through the quarry courtyard. One brown-long eared bat was also observed.
- 7.6 The data recorded for roosting bats in trees only valid for one year as roosting bats can frequently change roosting locations on a yearly basis. Therefore, it is recommended further surveys are conducted prior to the removal of this this tree, closer to date when the tree is to be removed.
- 7.7 In the case no roosting bats are identified during later surveys, a climbing tree inspection should be completed by a suitably licenced bat ecologist within 48 hours prior to the tree's removal. This survey can be completed alongside the tree removal as part of a soft feeling technique.
- 7.8 In the event that roosting bats are identified during any of the above surveys, a Mitigation Licence for a European Protected Species Licence (EPSL) will be required from Natural Resource Wales (NRW) prior to the tree removal being completed.

- 7.9 Site enhancement recommendations have also been outlined to further improve the site for foraging and roosting bats.
- 7.10 As requested by NRW and Wrexham Councils Ecologist, bat Emergence/re-entry surveys have been undertaken in respect of the onsite horse chestnut tree. During three separate surveys No Bats were observed emerging/re-entering the tree. Since the previous surveys conducted in 2020, grey squirrels have now taken over the centre of the tree and therefore it is assessed as highly unlikely that bats are present roosting within this tree. Mitigation and enhancement for bats is proposed and the client 'North Wales and Cheshire Sand and Gravel Limited' have confirmed they will implement.

8.0 REFERENCES

1. Bats and Lighting in the UK version 3: Bat Conservation Trust 2018
2. Collins, J. (eds), 2016. Bat Surveys: Good Practice Guidelines, 3rd Edition. London: Bat Conservation Trust
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