BAT SURVEY REPORT

LAND NORTH OF RECTORY FARM, YATTON

OFF-SITE LAND

carried out by

CLARKSON & WOODS
ECOLOGICAL CONSULTANTS

commissioned by

PERSIMMON SEVERN VALLEY

FEBRUARY 2024

BAT SURVEY REPORT

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CONTENTS

Project title:	Land North of Rectory Farm, Yatton		
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1 INTRODUCTION

1.1.1 Clarkson and Woods Ltd. was commissioned by Persimmon Severn Valley Ltd to carry out bat surveys of the proposed off-site mitigation land associated with Land to the North of Rectory Farm, Yatton, BS49 4EU.

1.1.2 This Bat Survey Report details the methodology and results of bat activity surveys completed on the off-site mitigation land between April – October 2023, and should be read in conjunction with the Landscape Ecological Management Plan (LEMP) prepared for the off-site land and the development site. These documents detail the measures proposed to enhance the value of the site for greater and lesser horseshoe bats, as well as other bat species and ensure the favourable conservation status of both lesser and greater horseshoe bats is maintained.

1.1.3 This report has been prepared by Henry Sturgess, an experienced senior ecologist, who is a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). The report has been subjected to a two-stage quality assurance review by appropriately experienced senior consultants who are full members of CIEEM.

1.1.4 Unless the client indicates to the contrary, information on the presence of species collected during the surveys will be passed to the county biological records centre in order to augment their records for the area. This is in line with the CIEEM code of professional conduct[1].

1.2 Off-site Land Description

1.2.1 The off-site mitigation land is proposed to compensate for the loss of foraging habitats within the application Site. It comprises two fields to the west of the Strawberry Line, adjacent to the western edge of the application Site boundary.

1.2.2 The approximate centre of the off-site land is at Ordnance Survey Grid Reference SST 42189 65451, and the location of the site is shown in Figure 1 below. The entire area of the two off-site fields proposed for use as compensation is approximately 5.2 hectares (ha) in size. The red line boundary of the Land North or Rectory Farm application (Planning reference: 23/P/0664/OUT) Site is provided below. The area of off-site compensation land, which will be utilised by this application and the original Rectory Farm application (Planning ref: 23/P/0238/RM), is indicated below in blue. Figure 2 shows the habitat mapping for the off-site land including field and boundary references.

1.2.3 The fields were characterised as sheep-grazed modified pasture during the latest site appraisal in 2022 which contained a very high proportion of perennial rye grass. This indicated it was regularly fertilised or improved. Communication with the farmer regarding the management of the field in 2022 revealed that the field was also cut intermittently for silage production and livestock are treated with Ivermectin (i.e. reducing the potential for dung beetles to use sheep droppings as part of their lifecycle).

1.2.4 Since late 2022 the fields have been managed less frequently with grazing stopped and occasional management via a silage cut being noted. This has the potential to have reduced the current foraging value for habitat for horseshoe bats.

1.2.5 The northern field (Field 1) is surrounded by ditches, with several featuring poor water quality. The ditches form part of the Biddle Street SSSI designation and are likely to contain a wide array of invertebrates in addition to a wide variety of aquatic vegetation. The Strawberry Line cycle path and associated hedgerow vegetation runs adjacent to the eastern boundary of the field, and a group of mature oak trees are present on the southern boundary of Field 1.

1.2.6 The southern field (Field 2) is also a highly improved modified grassland habitat surrounded by ditches of varying quality. The Biddle Street Rhyne forms the southern boundary of the site. This is a wide ditch with relatively varied aquatic vegetation. To the east there is another ditch associated with a well-developed hedgerow containing trees. The northern ditch is well vegetated being dominated by a thick fringe of common reed.

[1] Code of Professional Conduct. CIEEM, January 2019.

Figure 1: Aerial photograph of off-site compensation land (blue) and Site development boundary (red) (©2024 Google Maps)

Figure 2: Habitat mapping of Off-site Land

1.3 Development Proposals

1.3.1 The Outline Planning Application for the development of up to 190 homes (including 50% affordable homes), 0.13ha of land reserved for Class E uses, allotments, car parking, earthworks to facilitate sustainable drainage systems, open space and all other ancillary infrastructure and enabling works with means of access from Shiners Elms for consideration. All other matters (means of access from Chescombe Road, internal access, scale, layout, appearance and landscaping) reserved for subsequent approval.

1.3.2 The proposals will retain the fields within the west of the red line boundary to provide a buffer to the Strawberry Line and the Biddle Street SSSI. This retained and enhanced habitat will provide mitigation for horseshoe bats and a range of other species.

1.3.3 The proposals will result in the loss of modified pasture fields currently primarily used for sheep grazing. These fields lie within the east of the RLB and sit adjacent to existing dwellings which form the western settlement boundary of Yatton. Hedgerows and ditches will be primarily retained with the exception of short sections to accommodate the access road. All of the ditches will be culverted under these features to ensure they continue to function.

1.3.4 To address the impacts from the loss of habitat on greater horseshoe bats *Rhinolophus ferrumequinum*, land to the west of the strawberry line will also be enhanced to compensate for the loss of habitat and ensure the favourable conservation status of this protected species can be maintained locally.

1.3.5 Any changes to the building design and layout and landscaping made subsequent to publication of this report should be issued to Clarkson and Woods Ltd. for review. Ecological impacts and mitigation opportunities may be affected by any such changes.

1.4 Quality Assurance

1.4.1 All ecologists employed by Clarkson and Woods are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow the Institute's Code of Professional Conduct[2] when undertaking ecological work.

1.4.2 The competence of all field surveyors has been assessed by Clarkson and Woods with respect to the CIEEM Competencies for Species Survey (CSS)[3].

1.4.3 This report has been prepared in accordance with the relevant British Standard: *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development*[4]. It has been prepared by an experienced ecologist who is a member of CIEEM. The report has also been subject to a two-stage quality assurance review by appropriately experienced ecologists who are full members of CIEEM.

2 METHODOLOGY

2.1 Walked Bat Transect Surveys

2.1.1 The transect surveys involved walking pre-determined transects at a consistent speed using hand-held broad spectrum bat detectors and recording devices. The route was designed to provide a balanced overview of bat activity across the off-site land parcel. The surveys were also specifically aimed at identifying if greater and lesser horseshoe bats were foraging in the off-site land to ensure the Habitat Evaluation Procedure (HEP) calculations completed in support of the proposals remain valid. Three-minute stop points were included at various pre-determined locations throughout the transects.

2.1.2 Seven full transects of the off-site land were undertaken, with a transect completed every month between April – October 2023. The starting point during each transect survey was varied to avoid spatial biases during the surveys and lasted for a period of at least three hours after sunset.

[2] CIEEM (2013). *Code of Professional Conduct*. www.cieem.net/professional-conduct.
[3] CIEEM (2013). *Competencies for Species Survey (CSS)*. www.cieem.net/competencies-for-species-survey-css-
[4] The British Standards Institution (2013*). BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development*. BSI Standards Ltd.

2.1.3 The surveys were carried out during suitable weather conditions (low wind, little to no rain and temperatures of at least 10°C). All of the surveys were undertaken at dusk, commencing at sunset and continuing until three hours after sunset.

2.1.4 Surveyors were equipped with handheld bat detectors Echo Meter Touch with an iPad Mini (wildlife acoustics), Anabat Scout or Anabat walkabout (Titley Scientific) both of which feature integrated recorders.

2.1.5 The survey recordings were later analysed on a computer using Audition (Adobe) or Kaleidoscope (Wildlife Acoustics) software to confirm or identify species. Table 1 below provides the dates, weather conditions, sunset times, survey start and end times and ecologist details for each of the walked transects.

Table 1: Walked Bat Transect Survey Details

Survey Date	Weather Conditions	Start time	End time	Ecologist details
25/04/2023	Dry, 12-10˚C, Wind 2, Cloud 4.	20:27	23:27	Henry Sturgess Alfie Dickens
10/05/2023	Dry, 14-12˚C, Wind 3, Cloud 2-3.	20:48	23:48	Peter Timms Alfie Dickens
07/06/2023	Dry, 19-14˚C, Wind 1, Cloud 1.	21:24	00:24	Chris Poole Miranda Jones
12/07/2023	Dry, 18-15.5˚C, Wind 2-3, Cloud 1.	21:27	00:27	Henry Sturgess Sarah Richards
09/08/2023	Dry 22-19˚C, Wind 2, Cloud 6-8	21:12	00:12	Harry Fox Alex Hebdon
06/09/2023	Dry, 24-20˚C, Wind 0, Cloud 3.	19:46	22:46	Peter Timms Adéle Remazeilles
17/10/2023	Dry, 13-11˚C, Wind 2, Cloud 8.	18:13	21:17	Henry Sturgess Chris Poole

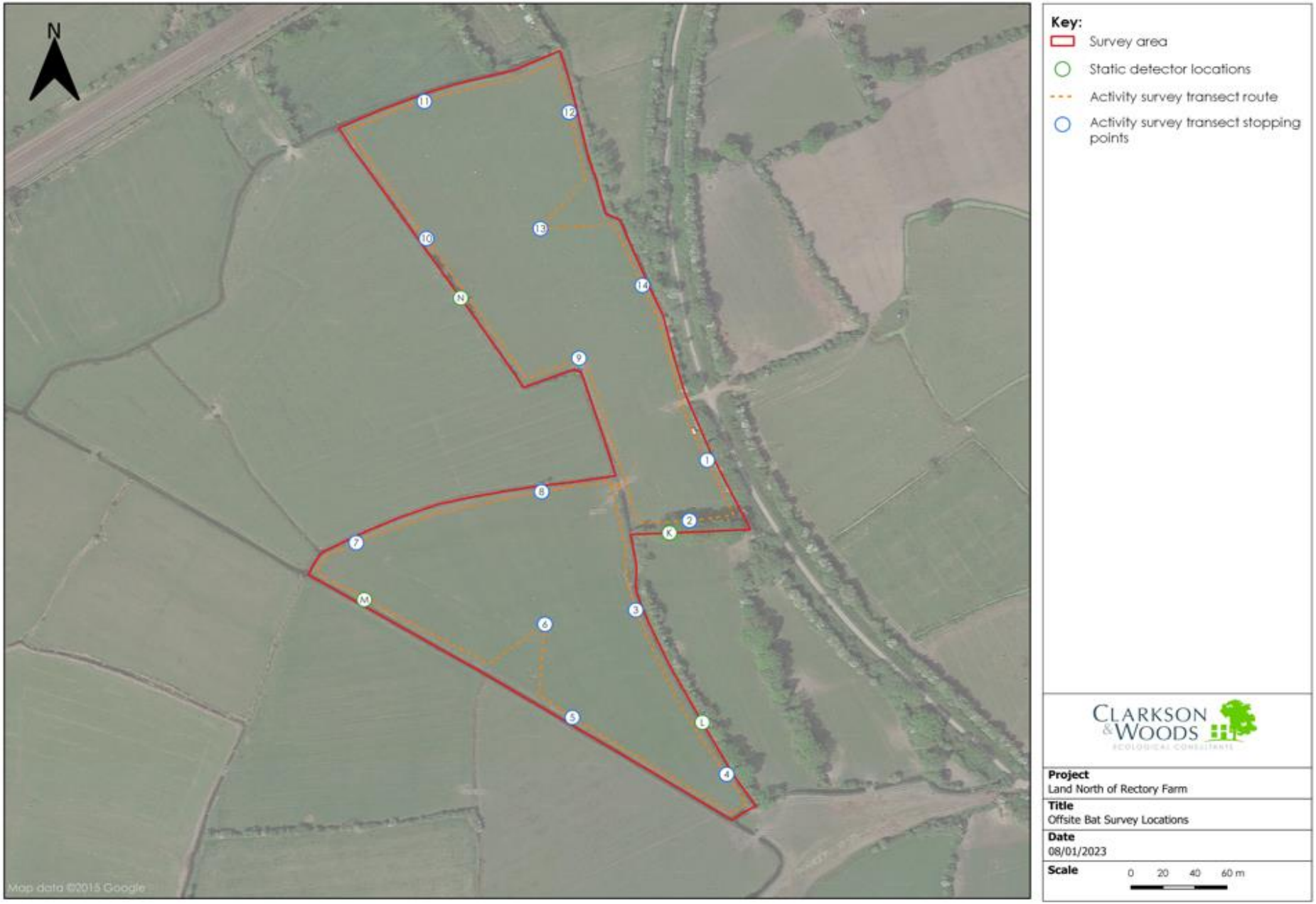

Figure 3: Walked Bat Transect Route And Static Detector Deployment Locations

2.2 Static Detector Surveys

2.2.1 Four automated full-spectrum static detectors (Anabat Swifts) were deployed within the off-site land for a period of at least 7 nights per deployment. Deployment locations are provided in Figure 3 above. The detectors were programmed to begin recording at least 30 minutes before sunset and finish recording 30 minutes after sunrise each night and logged bat passes in each static detector location. In total the static detector surveys covered 52 survey nights at each deployment location. This is over the 50-night minimum number of nights of static detector deployment stipulated in the North Somerset and Mendip Bat Special Area of Development, Guidance on Development: Supplementary Planning Document[5]

2.2.2 The deployment dates are provided in

2.2.3 The static detector data was analysed Kaliedoscope to classify the bat calls to genus and in some instances species level. Manual verification was then applied to the bat calls with any No I.D. files classified and a percentage of the noise files were inspected and, where found to contain bat calls, classified. The main purpose of the static detector surveys was to identify the levels of use of the off-site land by lesser and greater horseshoe bats and identify if foraging in line with the Miller's (2001) Foraging Index as outlined in the North Somerset and Mendip Bat SAC Technical Guidance[5] was reached.

2.2.4 The Miller's foraging index threshold is reproduced from the guidance below 'Call sequences with a negative minute on either side (i.e. a minute in which the species was not recorded) are judged to be commuting contacts, whereas contacts in two consecutive minutes or more are judged to be foraging contacts.' 'Foraging' is defined as 6 or more such minutes over any three nights in the five nights on any one automated detector during the recording period.' As such lesser and greater horseshoe calls were summarised from each deployment and detector with any repeated foraging behaviour in line with the definition given in the guidance identified.

~~2.2.2~~2.2.5 Table 2~~Table 2~~ below and the detailed weather conditions for each deployment are summarised.

~~2.2.3~~2.2.6 The static detector data was analysed Kaliedoscope to classify the bat calls to genus and in some instances species level. Manual verification was then applied to the bat calls with any No I.D. files classified and a percentage of the noise files were inspected and, where found to contain bat calls, classified. The main purpose of the static detector surveys was to identify the levels of use of the off-site land by lesser and greater horseshoe bats and identify if foraging in line with the Miller's (2001) Foraging Index as outlined in the North Somerset and Mendip Bat SAC Technical Guidance[5] was reached.

~~2.2.4~~2.2.7 The Miller's foraging index threshold is reproduced from the guidance below 'Call sequences with a negative minute on either side (i.e. a minute in which the species was not recorded) are judged to be commuting contacts, whereas contacts in two consecutive minutes or more are judged to be foraging contacts.' 'Foraging' is defined as 6 or more such minutes over any three nights in the five nights on any one automated detector during the recording period.' As such lesser and greater horseshoe calls were summarised from each deployment and detector with any repeated foraging behaviour in line with the definition given in the guidance identified.

Table 2: Static Detector Deployment Summary

Date Deployed/Date Collected	No of Nights Surveyed	Weather Summary
18.04.2023 – 25.04.2023	7	2-16˚C, dry , strong winds on the 23rd of April.
10.05.2023 – 18.05.2023	8	8-18 ˚C, dry, higher than average winds on the 10th of May
07.06.2023 – 14.06.2023	7	11-28˚C, Dry. Higher than average winds on the 9th and 13th of June.

[5] North Somerset and Mendip Bat Special Area of Development, Guidance on Development: Supplementary Planning Document, North Somerset, Adopted January 2018

12.07.2023 - 19.07.2023	7	13-23˚C, Dry throughout, higher than average winds on the 12th and 16th of July
09.08.2023 – 17.08.2023	8	12-24˚C, Dry throughout, wind higher than average on 14th
06.09.2023 - 14.09.2023	8	10-27˚C, dry throughout, wind higher than average on 11th-13th
11.10.2023 – 18.10.2023	7	2-19˚C, Dry throughout, higher than average winds on the 13th and high winds on the 17th of October.

2.3 Limitations

2.3.1 Due to the varying days recorded due to the additional night of recording in May, August and September the monthly totals of all static detectors are not directly comparable. Where a detector had additional nights of recording this is indicated in the evaluation of results.

2.3.2 The audio data for the May survey did not record on the handheld bat detector. As a result, the bat activity could not be plotted on the heatmaps produced to illustrate the activity survey. The overall number of bat passes was discerned from the survey notes and as such it is not considered to be a serious limitation to the survey results or the conclusions of this report. No horseshoe bats were recorded during this activity survey.

2.3.3 Seven bat activity transects were undertaken to inform this assessment, this is lower than the ten transects (including a dawn transect) suggested as best practice in the North Somerset and Mendip Bat SAC guidance for development. This is not considered a significant limitation to the survey work or this assessment due to the use of static detector surveys alongside the transect surveys and the additional survey of Filed 1 in 2022. It is considered unlikely three additional transects would have provided significant additional information about the use of the site by foraging horseshoe bats. Overall, it is considered the survey effort applied is appropriate particularly given the assessment is to inform the level of use of compensation land by horseshoe bats rather than future development of the land surveyed.

3 RESULTS

3.1 Walked Bat Transect Surveys

3.1.1 The off-site land had a very similar level of use by bats during the activity surveys when compared with the Land North of Rectory Farm site, with at least 9 species recorded during the walked transect surveys. This is a conservative estimate, as Myotis and long-eared bat passes were only identified to genus level and as such may represent more than one species.

3.1.2 Common and soprano pipistrelles were the most frequently recorded species, with common pipistrelle and soprano pipistrelle recorded during every survey. Common pipistrelle had 263 passes attributed to this species with the majority recorded foraging across the site particularly along the boundary vegetation and ditches. Soprano pipistrelle had 147 passes across all of the surveys and was generally associated with foraging along the open ditches.

3.1.3 Noctule was the third most frequently recorded species, with calls recorded during five surveys from May to September, with 22 calls in total recorded across the surveys. When observed, this species was foraging high over the wider off-site land.

3.1.4 Serotine were recorded during four surveys. These included April, July, August and September. A total of 18 passes were attributed to this species with the species generally seen foraging along the ditches or hedgerows, although some were commuting along (H1/D1) the eastern boundary of Field 1 which bounds the strawberry line.

3.1.5 The remaining species recorded all had between 6 and 3 passes recorded each across all of the surveys undertaken.

3.1.5.1 Lesser horseshoe had the highest number of passes with 6 passes attributed to this species. These were recorded during the October survey with all passes attributed to foraging bats alongside (H1/D1) the Strawberry Line in Field 1.

3.1.5.2 Long-eared bats were recorded on two occasions in August and September. On both occasions long-eared bats were foraging along the boundaries. In August an individual was foraging along (D7) the Biddle Street Rhyne in Field 2 and in September an individual was recorded on the southern boundary of Field 1.

3.1.6 Greater horseshoe bats were recorded occasionally during the transect surveys, with a call recorded on three separate surveys (in April, June, and August). This is a slightly higher level of activity than was recorded during the activity surveys completed on the application site in 2022 (where a total of 3 passes were recorded across 9 surveys). Given the low detectability of this species, the levels of activity recorded in the off-site land was still considered significant. On two occasions, greater horseshoe bats were recorded foraging adjacent to the Strawberry Line (H1/D1) on the eastern boundary of Field 1. The other call recorded was attributed to a commuting individual at stopping point 4, where it was observed commuting along the vegetated boundary to the east (D8/H3) of Field 2.

3.1.7 Bat activity within the off-site land was generally concentrated on the southern (D2/H2) and eastern ((D1/H1) boundaries of Field 1 and along the eastern boundary of Field 2 (D8/H3). The relative levels of activity are shown in Figure 4 below. A number of other minor peaks in activity were noted associated with stopping points. Hotspots of activity in Field 1 included listening points 1 and 2 with relatively high levels of activity recorded at listening points 9, 10, 11 and 14. Figure 4 shows the relative use of the western boundary of Field 1 (D3 & D4) was low in comparison to the north (D5), east and southern boundaries with a conspicuous lack of bat calls recorded along the open portion of the western rhyne along D4 (a location which is very exposed to the prevailing winds). The centre of the field was less extensively sampled as a result of the transect route but activity from foraging bats was reasonably low in the centre of Field 1.

3.1.8 Field 2 was used by foraging and commuting bats more evenly than Field 1 with all of the boundaries receiving a relatively even level of use by commuting and foraging bats. This field was particularly well used by soprano pipistrelles foraging along the open rhynes. The highest levels of activity were recorded in the southern corner alongside the eastern ditch and hedgerow (D8/H3). This spot was relatively sheltered by the hedgerow and is close to a point where several ditches converge. This was the only location in the Field 2 where horseshoe bats have been recorded during an activity survey. The southwest and northern boundaries of this field had similar levels of relative use with foraging pipistrelles predominantly recorded along these features.

3.1.9 Figure 5 provides a summary of horseshoe call registrations associated with the activity surveys. In general, horseshoe activity recorded during the activity surveys was concentrated on the eastern boundary of Field 1 (H1/D1) particularly where it adjoins the strawberry line path. This is likely due to the use of this feature as a key commuting route for bats in the local area. Foraging by lesser horseshoe was recorded along this boundary during the October survey indicating this boundary is used within the site as a foraging habitat for this species. Calls from greater horseshoe bats were recorded alongside the eastern boundary of Field 1 (H1/D1) but also alongside the eastern boundary of Field 2 (D8/H3). Lesser horseshoes were observed foraging within Field 1 during the most recent surveys undertaken greater horseshoe were recorded in both fields but no definitive foraging behaviour was observed. During the 2022 surveys, greater horseshoes were recorded foraging in the centre of Field 1 on two occasions.

3.1.10 In general, bat activity was considered moderate throughout the off-site land with an average of 67 passes recorded per activity survey.

3.1.11 Although some parts of the Site were used by a relatively restricted assemblage of bat species, all parts of the Site are currently used by foraging and commuting bats. It should also be noted that the proportion of calls attributed to greater horseshoe bats was relatively high given the difficulty of detection of this species, with greater horseshoe passes accounting for 0.63% of the total recorded passes across all of the surveys within the off-site land. lesser horseshoe accounted for 1.28% of the total calls.

Table 3: Walked Bat Transect Survey Summary of Results (Off-Site Land Only)

Bat Species	*April*	*May*	*June*	*July*	*August*	*September*	*October*	Total Calls

Common pipistrelle	16	22	27	77	46	12	63	**263**
Soprano pipistrelle	2	4	13	29	67	10	22	**147**
Noctule	0	5	4	7	3	3	0	**22**
Greater Horseshoe	1	0	1	0	1	0	0	**3**
Lesser Horseshoe	0	0	0	0	0	0	6	**6**
Myotis sp.	0	0	0	1	2	1	0	**4**
Serotine	1	0	0	8	5	4	0	**18**
Leisler's bat	0	0	0	0	2	2	0	**4**
Long-eared bat	0	0	0	0	3	2	0	**5**
Total Calls	**20**	**31**	**45**	**122**	**129**	**34**	**91**	**472**

Figure 4: Bat Transect Heatmap All Bat Species (Off-Site Land)

Figure 5: Bat Transect Heatmap Horseshoe Bats Only (Off-Site Land)

3.2 Static Detector Surveys

3.2.1 The detailed static detector survey results are included in Appendix A, with each month's static detector results reported separately. Static detector location references are shown in Figure ~~Figure 2~~. A summary of the number of passes per bat species is included in Figure 6 below and a summary of the total number of passes displayed by month from all detectors is provided in Table 4.

3.2.2 Overall, at least 10 species of bat were recorded during the automated static detector surveys, as shown below in Figure 6. This is a conservative estimate, as the Myotis and long-eared sp. passes may have pertained to more than one species each.

3.2.3 All of the species recorded during the transect surveys were picked up by the static detectors, with the exception of Leisler's (although inconclusive *Nyctalus sp*. passes were recorded which may have pertained to Leisler's bats).

3.2.4 The static detector surveys recorded similar relative levels of activity across species to the manned activity transects. Common and soprano pipistrelles were again the two most frequently recorded species, accounting for 64% and 26% of the total recorded activity respectively across all static detector surveys. Nyctalus Sp. was the third most frequently recorded species, with a total of 1967 passes being recorded, accounting for 4.4% of the total recorded activity. Serotine accounted for 2.65% of the total calls across the deployments.

3.2.5 Myotis and Plecotus Sp. were both recorded frequently and across all detectors. Plecotus sp. accounted for 1.2% of the total calls and Myotis species accounted for 1.1% of the total calls.

3.2.6 Lesser horseshoe bats were recorded relatively frequently during the static detector survey, with the vast majority of the passes being recorded at Location K (on the southern boundary of Field 1), where 49% of the 153 lesser horseshoe passes were recorded. This indicates that the well vegetated southern boundary is likely to be a key foraging habitat for this species within the survey area. Locations L and N had similar levels of calls attributed to lesser horseshoe bats of between 21.5-26.7% of the total calls. Location M was poorly used with only 2.6% of lesser horseshoe calls being detected at this location. The levels of lesser horseshoe activity recorded within the off-site land also met the foraging threshold level defined by the Millers Foraging Index in at Location K in August and October and at Location N in October. This indicates that the Field 1 is used periodically for foraging by this species

3.2.7 Greater horseshoe bats were also recorded relatively frequently but in low numbers, with a total of 86 passes recorded across the deployment periods. Greater horseshoe activity was highest during the maternity season with the greatest level of use recorded in June, July and August. Activity was relatively evenly split between the four detector locations, with 26 passes recorded at Location N (30.2%) and 27 passes at Location L (31.4%), 20 passes at location K (26.7%) and 13 at Location M (15.1%). The greater horseshoe bat activity recorded by the static detectors met the foraging criteria defined by the Millers Foraging Index on a single occasion in June at Location L with 6 foraging contacts recorded over three nights within a five night period (in the southern portion of Field 2). In addition, greater horseshoe bats have been observed during previous activity surveys undertaken in 2022 repeatedly foraging within the centre of Field 1 during a single survey. Given the level of use recorded it is considered likely that the site supports a low number of greater horseshoe bats which forage on the site occasionally.

3.2.8 Calls attributed to both Nathusius Pipistrelle and Barbastelle were rare. Three Barbastelle calls recorded across all deployments, one of these calls was recorded in July at Location M with two additional calls recorded In August at Location K. Nathusius Pipistrelle were recorded later in the season during August and October. 9 of the 10 calls attributed to this species were recorded in August across all detectors except Location M with a single call from this species being recorded al Location L in October.

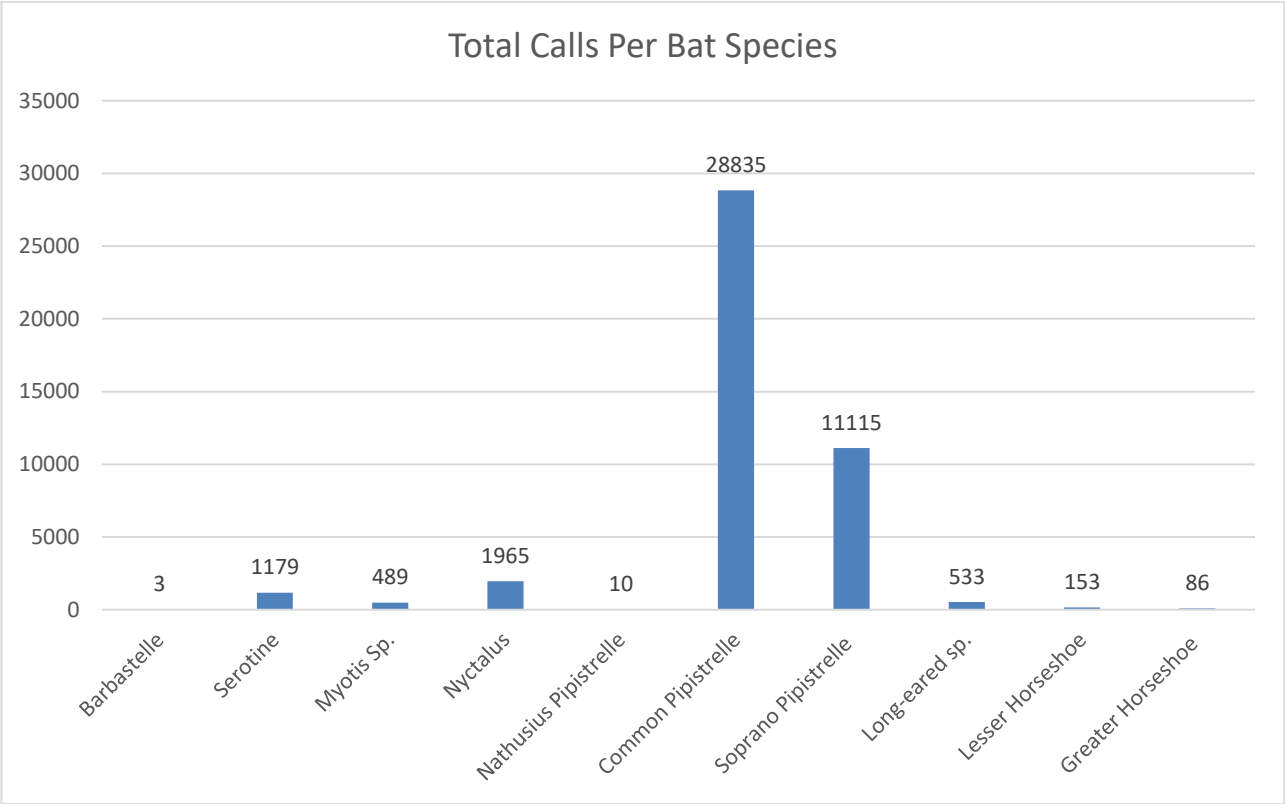

Figure 6: Total Number of Bat Passes Recorded Across Static Detector Surveys (April – October)

Table 4: Total Bat Calls Per Location

Location/Month	April	May	June	July	August	September	October	Total per location
K	845	2626	1133	9473	2029	613	677	17396
L	40	580	1543	1032	1471	768	164	5598
M	43	1001	793	3134	4006	1097	162	10236
N	26	531	988	882	7310	395	1006	11138
Totals Per Month	954	4738	4457	14521	14816	2873	2009	44368

4 EVALUATION

4.1.1 The off-site land has been confirmed to support foraging greater and lesser horseshoe bats (through either the Millers index or through direct observation of foraging behaviour during the completed surveys). Considering the general abundance/assemblage of foraging/commuting bat activity recorded, the off-site land is therefore considered to be of a similar level of importance to the application Site for bats.

4.1.2 The differences in the static detector survey results between the surveys undertaken within the red line boundary in 2022 and the off-site land surveys undertaken in 2023 were most notably a slightly higher proportion of greater horseshoe calls and slightly lower proportion of lesser horseshoe calls recorded in the off-site land. However, the assemblages of bats recorded in both parcels of land were similar. The lower overall levels of activity recorded on the off-site land is potentially attributable to the prevailing south-westerly winds across the site, which likely reduce the suitability of the land for night-flying invertebrates, which are blown towards the Strawberry Line.

4.1.3 Another factor which is considered likely to reduce the suitability of the off-site land for greater horseshoe bats was the lack of grazing applied to the fields during 2023 which would reduce the availability of dung beetles which are a key foraging resource for greater horseshoe bats.

4.1.4 Overall, it is considered that the off-site land is of **District** importance to bats.

4.1.5 The surveys of the off-site land aimed to establish whether horseshoe bats were present and foraging within the off-site mitigation land. The survey data collected suggests that both horseshoe bat species utilise the site for foraging, and also that the Strawberry Line present on the eastern side of Field 1 is well used as a commuting route, particularly by lesser horseshoe bats. In a national context, the horseshoe bat activity recorded within the off-site land is significant, given the limited national distribution of horseshoe bats, and the proximity of the off-site land to the internationally designated North Somerset and Mendip Bats Special Area of Conservation (SAC).

4.1.6 The level of use of the off-site land recorded suggests that there is significant capacity through habitat enhancement and creation of shelter features to enhance the field significantly for foraging horseshoe bats.

4.1.7 Two Landscape Ecological Management Plans (LEMP) will be prepared, which will detail how the application site and the off-site land will be enhanced to improve foraging habitat value for horseshoe bats, specifically greater horseshoes. Measures implemented will be informed by the survey data presented in this report and will include the creation of highly valuable foraging habitats such as neutral grassland and scattered locally-appropriate scrub planting to provide additional shelter from the prevailing winds, and the construction of a night roost/feeding perch structure. These documents and the landscaping will accord with the Habitat Evaluation Procedure calculations undertaken in support of the proposals and ensure that the favourable conservation of horseshoe bats associated with the Site and North Somerset and Mendip Bat SAC. The LEMP for the off-site land and the LEMP for the Land North of Rectory Farm Site alongside this Bat Survey Report, should be submitted to North Somerset Council to inform the Shadow Habitat Regulations Assessment already submitted in support of the proposals.

APPENDIX A: DETAILED STATIC BAT DETECTOR RESULTS

Month	Detector	Barbastelle	Serotine	Myotis Sp.	Nyctalus	Nathusius Pipistrelle	Common pipistrelle	Soprano pipistrelle	Long-eared sp.	Lesser horseshoe	Greater horseshoe	
April	K	0	2	4	4	0	320	508	1	6	0	845
April	L	0	0	3	3	0	16	16	0	0	2	40
April	M	0	0	3	2	0	26	10	0	0	2	43
April	N	0	0	4	1	0	14	6	0	0	1	26
May	K	0	0	12	24	0	2180	396	9	2	3	2626
May	L	0	0	17	24	0	436	88	8	4	3	580
May	M	0	3	10	10	0	566	408	3	0	1	1001
May	N	0	1	6	12	0	458	41	11	2	0	531
June	K	0	27	15	81	0	905	85	13	2	5	1133
June	L	0	25	37	70	0	929	411	34	22	15	1543
June	M	0	8	52	38	0	242	448	2	0	3	793
June	N	0	13	20	62	0	716	162	10	4	1	988
July	K	0	37	9	226	0	7658	1513	21	5	4	9473
July	L	0	146	8	167	0	633	64	10	1	3	1032
July	M	1	30	5	57	0	1525	1508	6	0	2	3134
July	N	0	25	13	82	0	464	283	6	1	8	882
August	K	2	68	26	164	4	1269	429	20	42	5	2029
August	L	0	218	75	258	2	632	223	58	2	3	1471
August	M	0	194	23	239	0	991	2519	38	2	0	4006
August	N	0	169	27	148	3	5851	938	156	5	13	7310
September	K	0	16	9	21	0	452	87	28	0	0	613
September	L	0	65	26	101	0	438	104	31	2	1	768
September	M	0	100	35	86	0	235	613	21	2	5	1097
September	N	0	28	24	77	0	169	72	20	3	2	395
October	K	0	1	11	1	0	575	60	8	18	3	677
October	L	0	0	7	1	1	131	17	5	2	0	164
October	M	0	1	6	4	0	65	76	10	0	0	162
October	N	0	2	2	2	0	939	30	4	26	1	1006
		3	1179	489	1965	10	28835	11115	533	153	86	

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