

A46 Coventry Junctions (Walsgrave) Scheme number: TR010066

6.3 Environmental Statement Appendices Appendix 8.6 Bat Activity Report

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Planning Act 2008

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**The Infrastructure Planning
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ENVIRONMENTAL STATEMENT APPENDICES
Appendix 8.6 Bat Activity Report

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1. Introduction

1.1. Scheme overview

- 1.1.1. The A46 is part of the strategic road network forming a significant trade and export route between the east and west Midlands. As part of the Government's Road Investment Strategy (RIS2) 2020-2025, the A46 Walsgrave Junction (the 'Scheme') is being improved with the realignment of the carriageway and a new grade separated junction. This aims to increase the road's capacity to cater for future developments across the region and promote safety by separating local and long-distance traffic and reducing congestion.
- 1.1.2. The bat activity surveys detailed within this report were undertaken in advance of the commencement of preliminary design and as such the surveys were based upon the Scheme design as it was at the time of surveying.
- 1.1.3. Sweco were commissioned by Octavius Infrastructure on behalf of National Highways to undertake bat activity surveys for the Scheme.

1.2. Site description

- 1.2.1. The Scheme extent, hereafter referred to as 'the site,' comprises an area of approximately 25ha of natural habitat located to the east of Coventry (see Figures 9 - 15 in Appendix A).
- 1.2.2. The habitats within the site comprise woodland, scrub, arable farmland and hedgerows.

1.3. Previous surveys

- 1.3.1. Surveys previously undertaken in relation to bats and reported on within the Environmental Assessment Report (EAR) (National Highways, 2022) include a desk study undertaken in 2020 which identified no Special Areas for Conservation (SACs) designated for bats within 30km of the site. The desk study included the purchase of species records within 2km of the site from Warwickshire Biological Records Centre (WBRC). There were records returned for;
 - common pipistrelle (*Pipistrellus pipistrellus*)
 - soprano pipistrelle (*P. pygmaeus*)
 - Nathusius' pipistrelle (*P. nathusii*)
 - brown long-eared bat (*Plecotus auritus*)

- Daubenton's bat (*Myotis daubentonii*)
- Natterer's bat (*M. nattereri*)
- noctule bat (*Nyctalus noctula*)
- serotine bat (*Eptesicus serotinus*)
- whiskered bat (*M. mystacinus*).

1.3.2. Additionally, the desk study reported a record of a roost located at national grid reference (NGR) SP 38500 79500 which is approximately 35m east of Hungerley Hall Farm. There was no further information provided on the type of roost or which species inhabited it.

1.4. Purpose

- 1.4.1. This bat activity report has been prepared by Sweco for National Highways and details bat activity surveys undertaken between April and October 2022, the results of which will be used to inform the Environmental Statement (ES) biodiversity chapter at preliminary design for the A46 Coventry Junctions (Walsgrave) Scheme.
- 1.4.2. All bats are protected in the UK under the Conservation of Habitats and Species Regulations 2017 (as amended), as European protected species (EPS), and Schedule 5 of the Wildlife & Countryside Act 1981 (as amended).

2. Methodology

2.1. Activity surveys

- 2.1.1. The foraging habitat preferences of UK bat species that have the potential to be impacted by the proposed scheme (those species which have been recorded on site during the surveys and other species whose known distribution suggests they may be present) are summarised in Table 2.1, based upon Collins (2016).

Table 2-1 : The foraging habitat preferences of different UK bat species

Species	Foraging habitat preferences
Daubenton's bat	Over water, favouring riverine habitats, but also known to forage in woodland.
Whiskered/Brandt's bat	Mixed woodland and riparian vegetation as core foraging habitat, with arable and rough grassland habitats also utilised. Whiskered bats select pasture with hedgerow, areas near rivers and more open habitats with hedges and more open habitats, whereas Brandt's bat favours woodland.
Natterer's bat	Semi natural broadleaved woodland, tree-lined river corridors and ponds. Also utilises mixed agricultural areas and grassland. Avoids coniferous plantation woodland.
Noctule	Forages out in the open, often over trees, and with a strong affinity with water. Reported as selecting broadleaved woodland and pasture.
Leisler's bat	Woodland edge, scrub or woodland-lined roads and over pasture. Recorded as selecting parkland/amenity grassland, deciduous woodland edge and rivers/canals but avoiding improved grassland.
Common pipistrelle	Shows preference for deciduous woodland but is a generalist utilising a wide range of habitats.
Soprano pipistrelle	Selects riparian habitats over other available habitat types.
Nathusius' pipistrelle	Riparian habitats, broadleaved and mixed woodland and parkland, occasionally found in farmland but always near water. Found over lakes and rivers and lake-edge habitats.
Serotine	Cattle pasture, playing fields, village greens, white streetlights, tree-lined hedgerows and woodland edge.
Brown long-eared	Strongly associated with tree cover, prefers woodland with cluttered understorey containing native species, particularly deciduous. Also forages in woodland edge and among conifers. Use of hedgerows increases through the active season.

- 2.1.2. The Environmental Assessment Report (EAR) (National Highways, 2022) recommended that "bat activity surveys are undertaken, focusing on habitats that may be temporarily lost/disturbed by the scheme up to 50m from the proposed boundary to further determine the impacts the proposed scheme will have on foraging and commuting bats (based on Table 2.1). These would comprise monthly transects with associated static detector monitoring points

between April and October inclusive in accordance with Bat Conservation Trust (BCT) survey guidelines (Collins, 2016) based on an overall classification of moderate for the habitats on site". The site plus a 50m buffer is hereafter referred to as 'the study area' with regards to bat activity.

- 2.1.3. Monthly transects were therefore undertaken by Sweco personnel between April and October 2022. The transects followed the same route with different variations for each survey so that there would be no bias in the results. The routes of the transects can be seen on Figures 1 – 8 in Appendix A and discussed further in Section 3. One of the transects comprised a dusk and pre-dawn survey within a 24 hour period in accordance with guidelines (Collins, 2016). The dusk surveys started at sunset and finished 2 hours after and the dawn surveys started 2 hours before dawn and finished at dawn.
- 2.1.4. Two surveyors walked each transect route for health and safety reasons. They were equipped with a full spectrum bat detector (Batlogger M) to aid detection of bats and made notes of the times and locations of bat calls and any bat activity that had been seen or heard (commuting, foraging or social calls). The locations of the origins of the bat calls were plotted on a map. Bat calls were recorded in full spectrum format for later analysis using BatExplorer analysis software. The recordings and the field notes were used to help build a picture of bat use across the site and to identify areas of higher use.
- 2.1.5. Surveys were undertaken by [REDACTED] MSc (Senior Ecologist), [REDACTED] MSc ACIEEM (Senior Ecologist), [REDACTED] BSc MCIEEM (Senior Ecologist), [REDACTED] BSc (Graduate Ecologist), [REDACTED] MSc (Graduate Ecologist), [REDACTED] MSc (Assistant Ecologist), [REDACTED] BSc (Graduate Ecologist), and [REDACTED] (Graduate Ecologist).
- 2.1.6. Following each survey, bat call data were imported into BatExplorer (version 2.1.10.1) for call analysis to determine the species of origin of the call and any behavioural observations that can be made from the call (including social calling and foraging).

2.2. Automated surveys

- 2.2.1. With reference to Collins (2016), automatic bat detectors (Anabat express and Anabat Swift) were deployed at five locations across the study area, for five consecutive nights monthly between April and October 2022.
- 2.2.2. The locations of the automated recorders were in positions away from disturbance from the public and secured to trees (see Figures 9 – 15 in Appendix A). Static 5 was located close to the edge of Coombe Abbey Park woodland in April but was moved further into the woodland close to the Smite

Brook culvert from May due to the potential impacts of the Scheme on the woodland edge close to Smite Brook. The detectors were set to record from 30 minutes before sunset until 30 minutes after dawn. The recorded data were analysed using Analook and Kaleidoscope software to determine the species recorded and any behavioural observations that can be determined (including social calling and foraging).

2.3. Survey limitations

- 2.3.1. The survey timing for transect survey four in July differed from that set out in the methodology (see Section 2.1.3). The survey started fourteen minutes after sunset and finished 1 hour and 56 minutes after sunset. The survey timing for transect survey five in August differed from that set out in the methodology. The survey started fifteen minutes prior to sunset and finished one hour and 45 minutes after sunset. As there were a total of eight surveys undertaken and these are minor changes to the methodology they are not considered to be a significant limitation.
- 2.3.2. There were technical issues associated with faulty equipment with some of the static detectors placed within the study area which meant that data could not be collected for certain periods. Static 1 did not record any data in April, static 4 did not record any data in May and static 5 did not record any data in August and October.
- 2.3.3. There was partial data (not the five consecutive nights stated within Section 2.2.1) collected for static 2 in September and October, static 3 in August and October, static 5 in June. As the aim of static detector surveys is to provide an overall picture of bat activity across a site, identifying those habitats that may be of higher importance to the local bat assemblage, given the number of static detectors deployed each month these missing data are considered unlikely to have significantly altered the overall picture of seasonal bat activity across the year. As such these issues are not considered to represent a significant limitation in the interpretation of the data.
- 2.3.4. The results of these surveys will remain valid until March 2024. Beyond this period, if works have not commenced, it is recommended that a new review of the ecological conditions is undertaken (CIEEM 2019).

3. Results

3.1. Activity surveys

- 3.1.1. The weather conditions recorded during each activity survey are summarised in Table 3.1.

Table 3-1 : Weather conditions during each activity survey

Transect No.	Date	Survey time	Sunset/sunrise time	Temp °C	Cloud cover %	Wind (Beaufort)	Rain
1	26/04/2022	20:18-22:18	20:18	10-10	20	0	None
2	10/05/2022	20:47-22:47	20:47	15-13	85	4	None
3	06/06/2022	21:23-23:23	21:23	14-12	100	2	Light
4	13/07/2022	21:37-22:19	21:23	19-15	40	2	None
5	15/08/2022	20:14-22:14	20:29	23-21	50	2	None
6	14/09/2022	19:23-21:23	19:23	16-14	25	2	None
7	15/09/2022	04:40-06:40	06:40	16-14	90	2	None
8	13/10/2022	17:16-19:16	17:16	13-12	65	2	None

- 3.1.2. The results of each survey are summarised below. Full results can be found in Table 3-2 and locations of bats recorded and transect routes are presented in Appendix A.

Transect 1 – 26 April 2022

- 3.1.3. Two bat calls were recorded during the survey, both common pipistrelle. The first call was at 21:01, 43 minutes after sunset.

Transect 2 – 10 May 2022

- 3.1.4. Eighty eight bat calls were recorded during the survey. The first call was made at 21:26, 39 minutes after sunset. At least three species were recorded which were common pipistrelle, soprano pipistrelle and *Nyctalus* sp. Commuting and foraging behaviour was recorded.

Transect 3 – 6 June 2022

- 3.1.5. Thirty nine bat calls were recorded during the survey. The first call was made at 21:30, seven minutes after sunset. At least four species were recorded which were common pipistrelle, soprano pipistrelle, noctule and *Myotis* sp. Commuting and foraging behaviour was recorded.

Transect 4 – 13 July 2022

- 3.1.6. Eighteen bat calls were recorded during the survey. The first call was made at 22:30, 67 minutes after sunset. Three species were recorded which were common pipistrelle, soprano pipistrelle and *Myotis* sp. Commuting and foraging behaviour was recorded.

Transect 5 – 15 August 2022

- 3.1.7. Eighty nine bat calls were recorded during the survey. The first call was made at 21:00, 31 minutes after sunset. At least five species were recorded which were common pipistrelle, soprano pipistrelle, noctule, *Nyctalus* sp. and *Myotis* sp. Commuting and foraging behaviour was recorded.

Transect 6 – 14 September 2022

- 3.1.8. Thirty nine bat calls were recorded during the survey. The first call was made at 20:00, 37 minutes after sunset. Three species were recorded which were common pipistrelle, soprano pipistrelle and *Myotis* sp. Commuting and foraging behaviour was recorded.

Transect 7 – 15 September 2022

- 3.1.9. Three bat calls were recorded during the survey. The first call was made at 04:59, 19 minutes after commencement of the survey. The only species recorded was soprano pipistrelle.

Transect 8 – 13 October 2022

- 3.1.10. Forty bat calls were recorded during the survey. The first call was made at 18:40, 84 minutes after sunset. Three species were recorded which were common pipistrelle, soprano pipistrelle and *Myotis* sp. Commuting and foraging behaviour was recorded.

Table 3-2 : Activity survey results showing total number of calls per species

Transect No.	Date	Common pipistrelle	Soprano pipistrelle	Noctule	<i>Nyctalus</i> sp.	<i>Myotis</i> sp.
1	26/04/2022	2	-	-	-	-
2	10/05/2022	75	11	-	2	-
3	06/06/2022	26	6	3	-	4
4	13/07/2022	11	6	-	-	1
5	15/08/2022	34	37	11	6	1
6	14/09/2022	35	3	-	-	1

Transect No.	Date	Common pipistrelle	Soprano pipistrelle	Noctule	<i>Nyctalus</i> sp.	<i>Myotis</i> sp.
7	15/09/2022	-	3	-	-	-
8	13/10/2022	32	7	-	-	1

3.2. Automated surveys

3.2.1. Sections 3.2.2 to 3.2.6 summarise the data obtained from the static detectors that were deployed at five locations across the study area (as shown in Figures 9 – 15 in Appendix A). Appendix B includes the full data for the automated surveys.

Static 1

3.2.2. The static detector was located to the southeast of Hungerley Hall Farm close to the existing A46 Walsgrave roundabout. The static detector recorded a large number of pipistrelle passes with common pipistrelle being the most common species with 2,565 passes followed by soprano pipistrelle with 1,878 passes. There was a peak number of pipistrelle passes in June with 1,605 common pipistrelle and 426 soprano pipistrelle recorded. There were small numbers of passes for Noctule (223), Leisler's bat (15), Daubenton's (2) and brown long-eared bat (1) recorded. There was no data collected in April due to equipment failure.

Static 2

3.2.3. The static detector was located to the east of Hungerley Hall Farm on the boundary of the A46 dual carriageway. The static detector recorded a large number of pipistrelle passes with common pipistrelle being the most common species with 4,712 passes followed by soprano pipistrelle with 1,461 passes. There was a peak number of common pipistrelle passes in June with 2,811 recorded. There were small numbers of passes for Noctule (215), Daubenton's (29), Nathusius' pipistrelle (10) and Leisler's bat (1) recorded. There were no bat calls recorded in April despite the detector being operational.

Static 3

3.2.4. The static detector was located to the west of the A46 on a hedgerow that will be removed for the proposed dumbbell junction. The static detector recorded a large number of pipistrelle passes with common pipistrelle being the most common species with 6,676 passes followed by soprano pipistrelle with 2,457 passes. There was a peak number of pipistrelle passes in June with 3,866 common pipistrelle and 1,405 soprano pipistrelle recorded. There were small

numbers of passes for noctule (162), brown long-eared bat (7) and Leisler's bat (4) recorded.

Static 4

- 3.2.5. The static detector was located to the east of the A46 on a hedgerow that will be removed for the proposed dumbbell junction. The static detector recorded a large number of pipistrelle passes with common pipistrelle being the most common species with 2,441 passes followed by soprano pipistrelle with 570 passes. There was a peak number of common pipistrelle passes in July with 1,014 recorded. There were small numbers of passes for noctule (110), Leisler's bat (5), Nathusius' pipistrelle (3) and brown long-eared bat (1) recorded. There was no data collected in May due to equipment failure.

Static 5

- 3.2.6. The static detector was located close to the woodland edge in April but was moved further into the woodland close to the Smite Brook culvert from May. The detector was moved due to the potential impacts of the Scheme on the woodland edge close to Smite Brook. The static detector recorded a large number of pipistrelle passes with soprano pipistrelle being the most common species with 3,437 passes followed by common pipistrelle with 1,439 passes. There was a peak number of soprano pipistrelle passes in April with 2,858 recorded. There were small numbers of passes for noctule (224), Daubenton's bat (4), brown long-eared bat (2) and Leisler's bat (1) recorded. There was no data collected in August and October and partial data collected in June due to equipment failure.

4. Discussion and recommendations

4.1. Bat activity

- 4.1.1. The activity surveys have revealed a total of at least five species commuting and foraging across the site. The majority of these are common species (common and soprano pipistrelle, noctule and *Nyctalus* sp.), but calls from bats of the rarer genus *Myotis* were also recorded. Due to the similarity of calls between species, the latter could not be identified to species level. There were four *Myotis* calls recorded during transect 3 in June, with a single call recorded during transects 4, 5, 6 and 8. Common pipistrelle was the most frequently recorded species. The habitat preferences of the species recorded on site are detailed in Table 2.1.
- 4.1.2. The numbers of individual bats of these commoner species occurring across the site in the walked activity surveys is not considered to be high.
- 4.1.3. The automated surveys recorded a large number of bat calls (see Section 3.2) and have revealed a total of at least nine species, giving a view of where the more species diverse areas of the site were. The automated surveys showed that static 5 recorded the highest level of bat calls. The static was located close to the woodland edge in April which is a preferred foraging habitat for many bat species. There were at least eight bat species recorded at statics 1, 2, 3 and 4. The lowest diversity was at static 5 once the detector was moved further into the woodland close to the Smite Brook culvert, which recorded a maximum of six species.
- 4.1.4. There were small numbers of Nathusius' pipistrelle, Leisler's bat, brown long-eared bat and Daubenton's bat recorded during the automated surveys. The small number of these species are considered to be of value at the local level.
- 4.1.5. The populations of the bats recorded on site during the activity transects and the automated surveys are assessed as valuable at the local level.

4.2. Impact assessment

- 4.2.1. The current Scheme plans indicate that the Hungerley Hall Farm overpass bridge will be demolished and a new link road connecting the B4082 to the proposed dumbbell junction will be constructed, creating an 'island' of habitat between this new link road and the existing A46 carriageway.
- 4.2.2. The loss of the bridge and fragmentation of habitat may result in the avoidance and abandonment of habitats and roosts and may result in increased mortality should bats still attempt to cross the existing A46 road or new link road without the height of the overpass to guide them above traffic.

- 4.2.3. The construction of the proposed dumbbell junction will result in the permanent loss of commuting and foraging habitat and may also result in increased mortality.
- 4.2.4. The current Scheme plans show an increase in lighting with proposed central reservation lighting along stretches of the A46 to the north and south of the existing junction which are not lit prior to the Scheme. This has the potential to impact light averse species, such as *Myotis* sp. deterring bats from foraging near the road or crossing it.

4.3. Recommendations

- 4.3.1. It is recommended that any trees removed to facilitate works should be replaced on at least a like-for like basis with fast growing, semi-mature, native species. Trees planted along field margins will provide a feeding resource and aid in commuting. The siting of the trees at field margins will not impact the current use of the fields as arable farmland. Replacement trees should be located as close to the location of the lost trees as possible, to provide compensation foraging opportunities close to the location of the lost opportunity and increase the likelihood of bats finding and utilising the new opportunities.
- 4.3.2. It is recommended that any habitat loss required for the Scheme is kept to a minimum. In particular any hedgerows removed should, where feasible, be replaced with species-rich hedgerows to ensure that commuting routes throughout the Scheme are not permanently impacted.
- 4.3.3. It is recommended that a sensitive lighting scheme is designed in consultation with a suitably experienced ecologist and lighting engineer to ensure that important foraging and commuting areas remain undisturbed during the construction and operational phases of the Scheme. Where lighting is necessary, the following measures should be considered to reduce adverse impacts:
- consideration of hood design, lamp height and angle, to reduce upward and backward light spill; particularly avoiding illuminating retained foraging and commuting habitat within the Scheme such as mature trees, tree lines and hedgerows
 - use of less ultra-violet (UV) light emitting bulbs such as metal halide or high-pressure sodium
 - minimising hours of lighting to those absolutely necessary for safety and security purposes, where lighting should avoid key periods of bat activity (i.e. sunset and sunrise). It should be considered how new technologies can be used to control lighting levels (e.g. dimming lights at certain times).

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- 4.3.4. Further technical details in regard to lighting are given in the BCT and the Institute of Lighting Professionals' *Guidance Note 08/18 Bats and Artificial Lighting in the UK* (2018) and *Artificial Lighting and Wildlife: Interim Guidance: Recommendations to help minimise the impact of artificial lighting* (BCT, 2014).
- 4.3.5. The landscaping should be designed to provide shelter, foraging opportunities and connected dark corridors throughout the Scheme. It is recommended that a suitably qualified ecologist is consulted during the design of the landscaping scheme to advise on the creation and enhancement of habitats for bats (and other wildlife).

5. References

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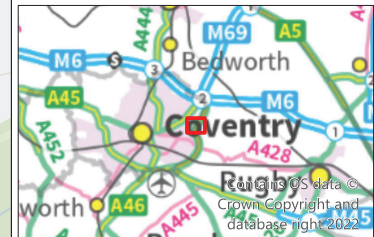
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Appendix A. Figures



- Legend**
- Bat Activity Survey Transect
 - Bat Activity Survey Transect: Start
 - Bat Activity Survey Transect: End
 - Species Recorded**
 - Pipistrellus pipistrellus



P01	23.05.2023	FIRST ISSUE	AC	AN	LMM
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Designer

Contractor



Project Title
A46 COVENTRY JUNCTIONS (WALSGRAVE)

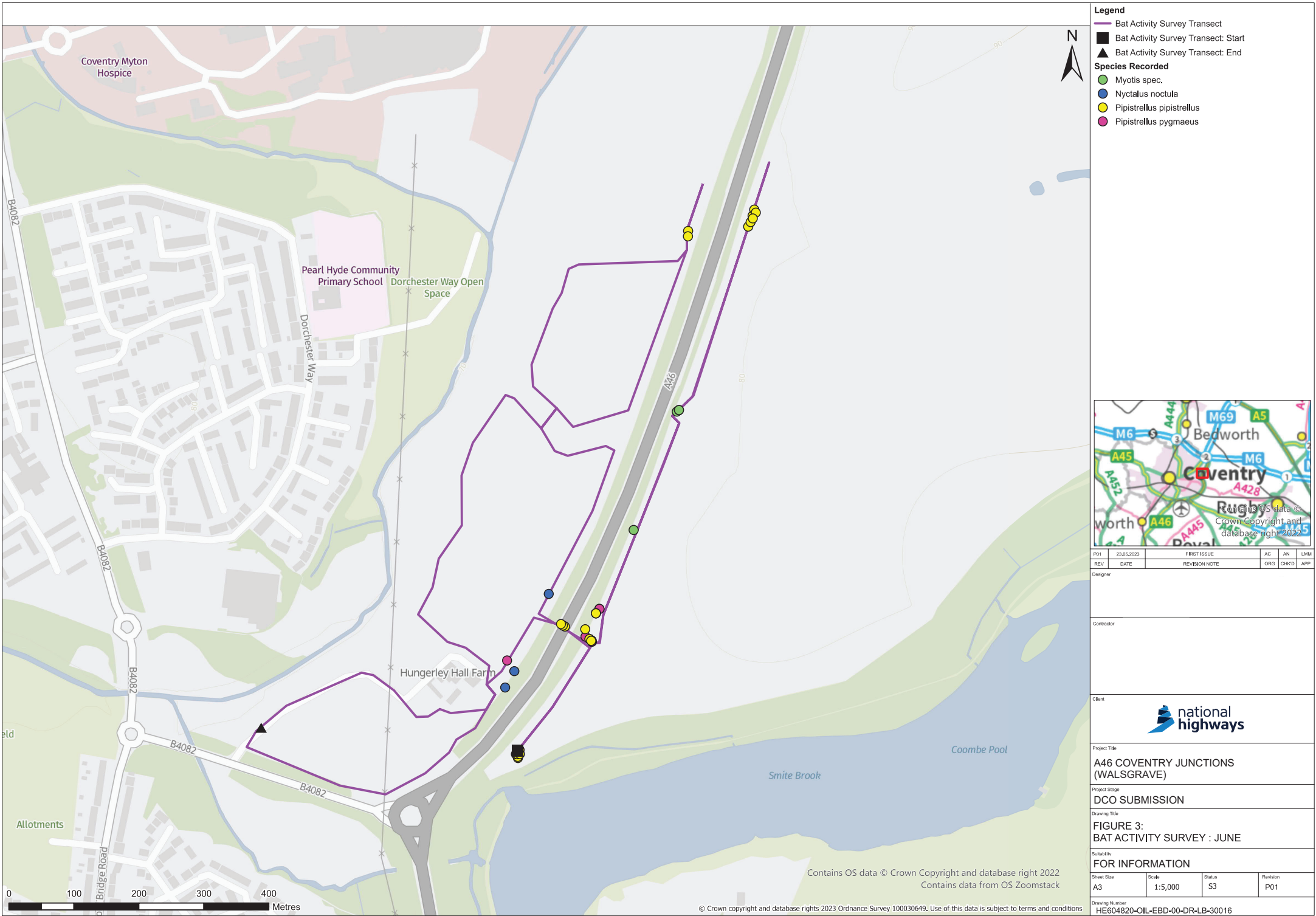
Project Stage
DCO SUBMISSION

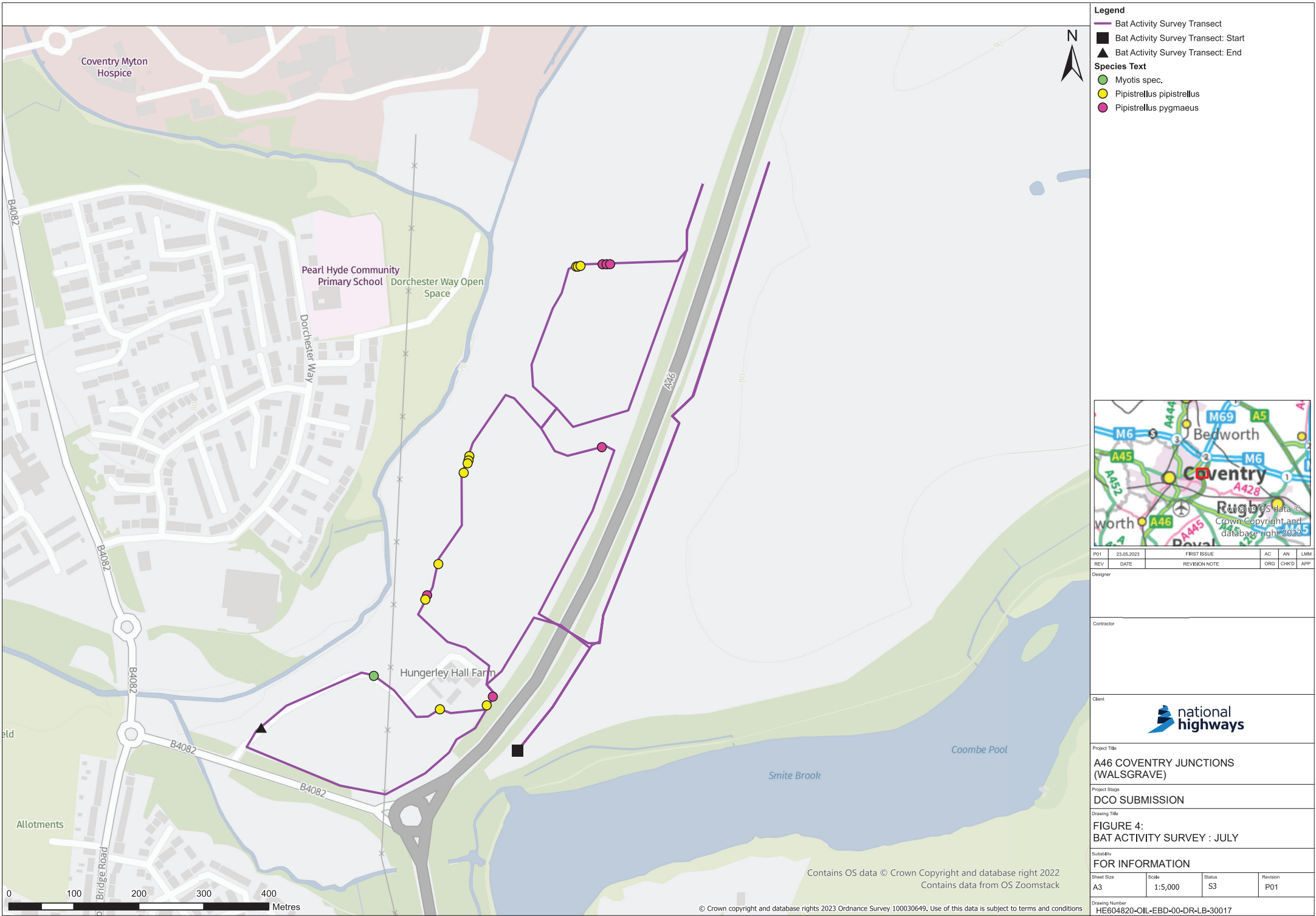
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**FIGURE 1:
BAT ACTIVITY SURVEY : APRIL**

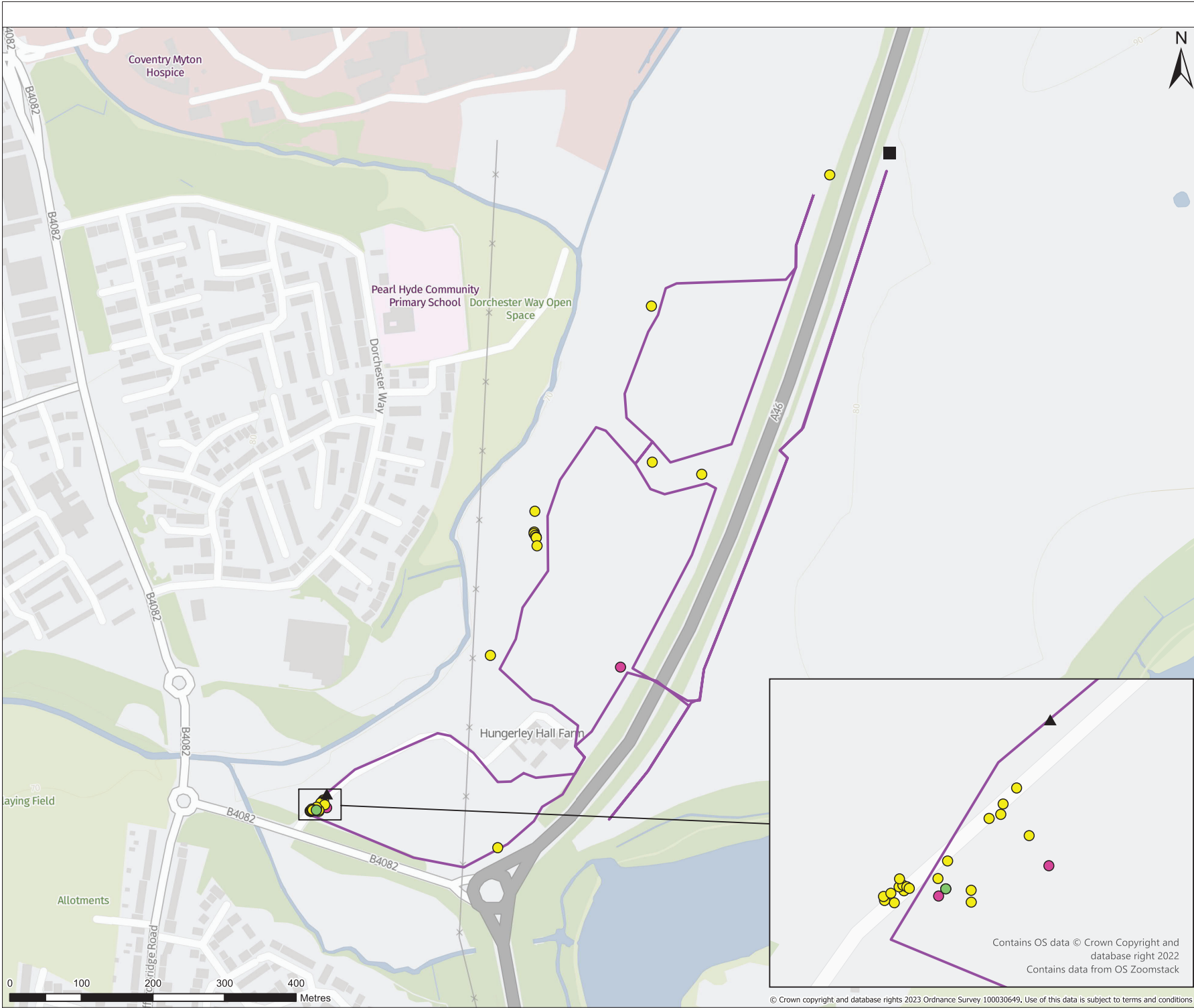
Submittal
FOR INFORMATION

Sheet Size A3	Scale 1:5,000	Status S3	Revision P01
Drawing Number HE604820-OIL-EBD-00-DR-LB-30014			

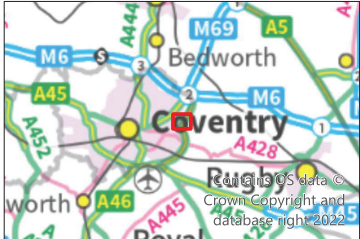
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- Legend**
- Bat Activity Survey Transect
 - Bat Activity Survey Transect: Start
 - Bat Activity Survey Transect: End
 - Species Recorded**
 - Myotis spec.
 - Pipistrellus pipistrellus
 - Pipistrellus pygmaeus



P01	23.05.2023	FIRST ISSUE	AC	AN	LMM
REV	DATE	REVISION NOTE	ORG	CHKD	APP

Designer

Contractor



Project Title
A46 COVENTRY JUNCTIONS (WALSgrave)

Project Stage
DCO SUBMISSION

Drawing Title
**FIGURE 6:
BAT ACTIVITY SURVEY : SEPTEMBER DUSK**

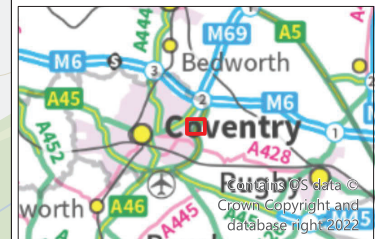
SubTitle
FOR INFORMATION

Sheet Size	Scale	Status	Revision
A3	1:5,000	S3	P01

Drawing Number
HE604820-OIL-EBD-00-DR-LB-30019



- Legend**
- Bat Activity Survey Transect
 - Bat Activity Survey Transect: Start
 - Bat Activity Survey Transect: End
 - Species Recorded**
 - Pipistrellus pygmaeus



P01	23.05.2023	FIRST ISSUE	AC	AN	LM
REV	DATE	REVISION NOTE	ORG	CHKD	APP

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Project Title
A46 COVENTRY JUNCTIONS (WALS GRAVE)

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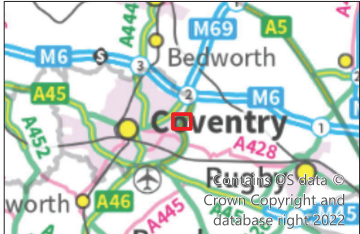
Drawing Title
**FIGURE 7:
BAT ACTIVITY SURVEY : SEPTEMBER DAWN**

Submittal
FOR INFORMATION

Sheet Size A3	Scale 1:5,000	Status S3	Revision P01
Drawing Number HE604820-OIL-EBD-00-DR-LB-30020			



- Legend**
- Bat Activity Survey Transect
 - Bat Activity Survey Transect: Start
 - Bat Activity Survey Transect: End
 - Species Recorded**
 - Myotis spec.
 - Pipistrellus pipistrellus
 - Pipistrellus pygmaeus



P01	23.05.2023	FIRST ISSUE	AC	AN	LMM
REV	DATE	REVISION NOTE	ORG	CHKD	APP

Designer

Contractor



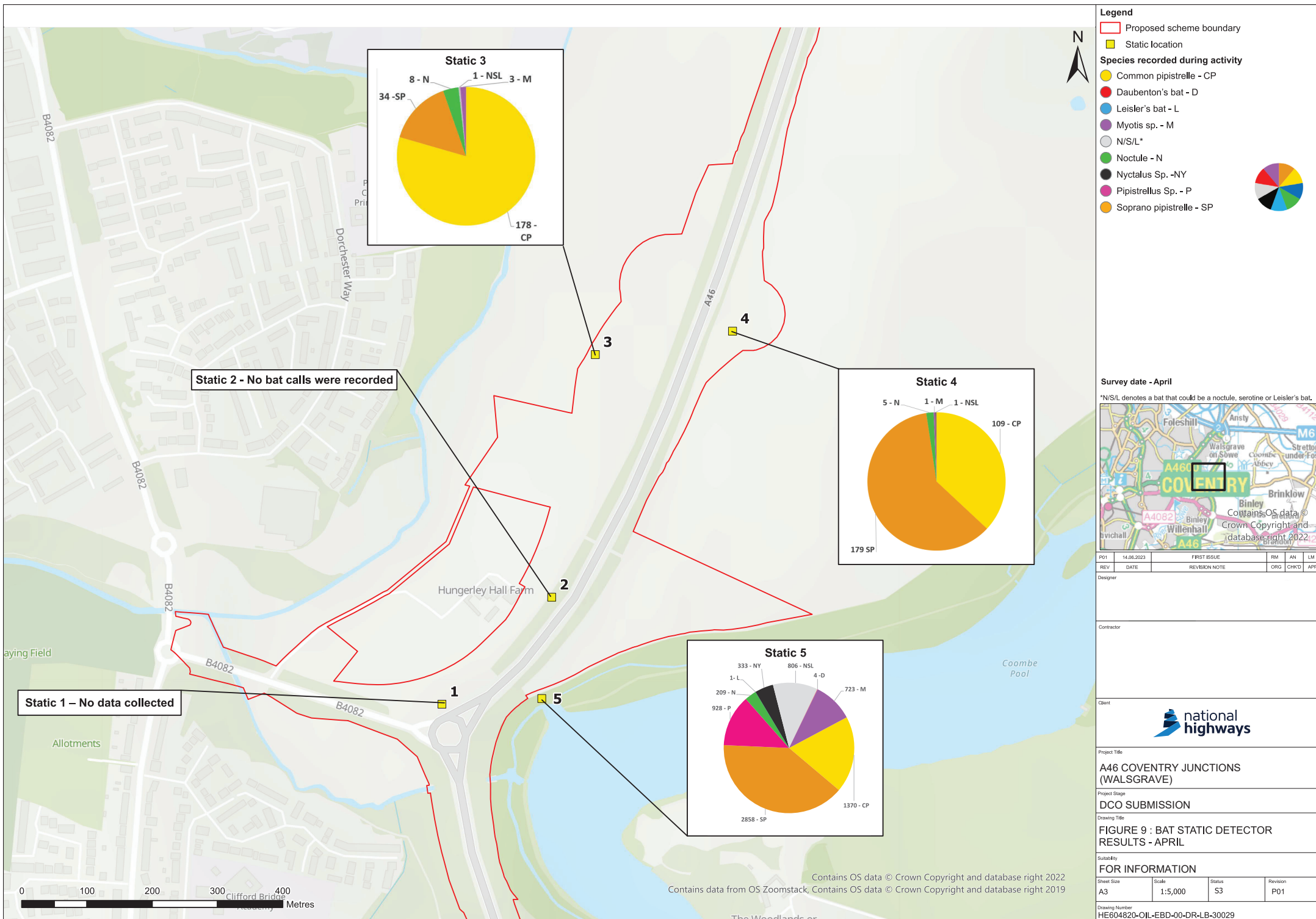
Project Title
A46 COVENTRY JUNCTIONS (WALSGRAVE)

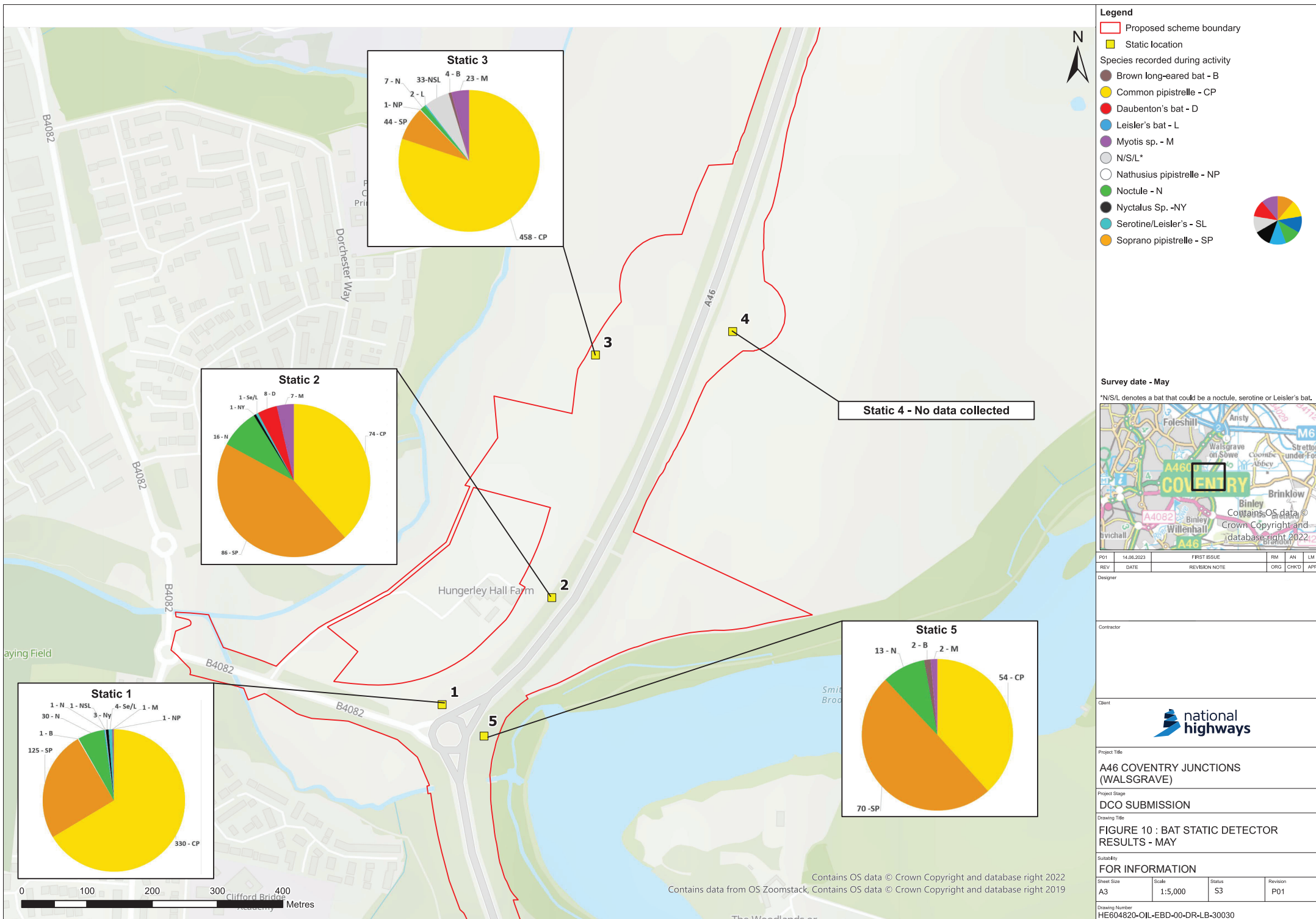
Project Stage
DCO SUBMISSION

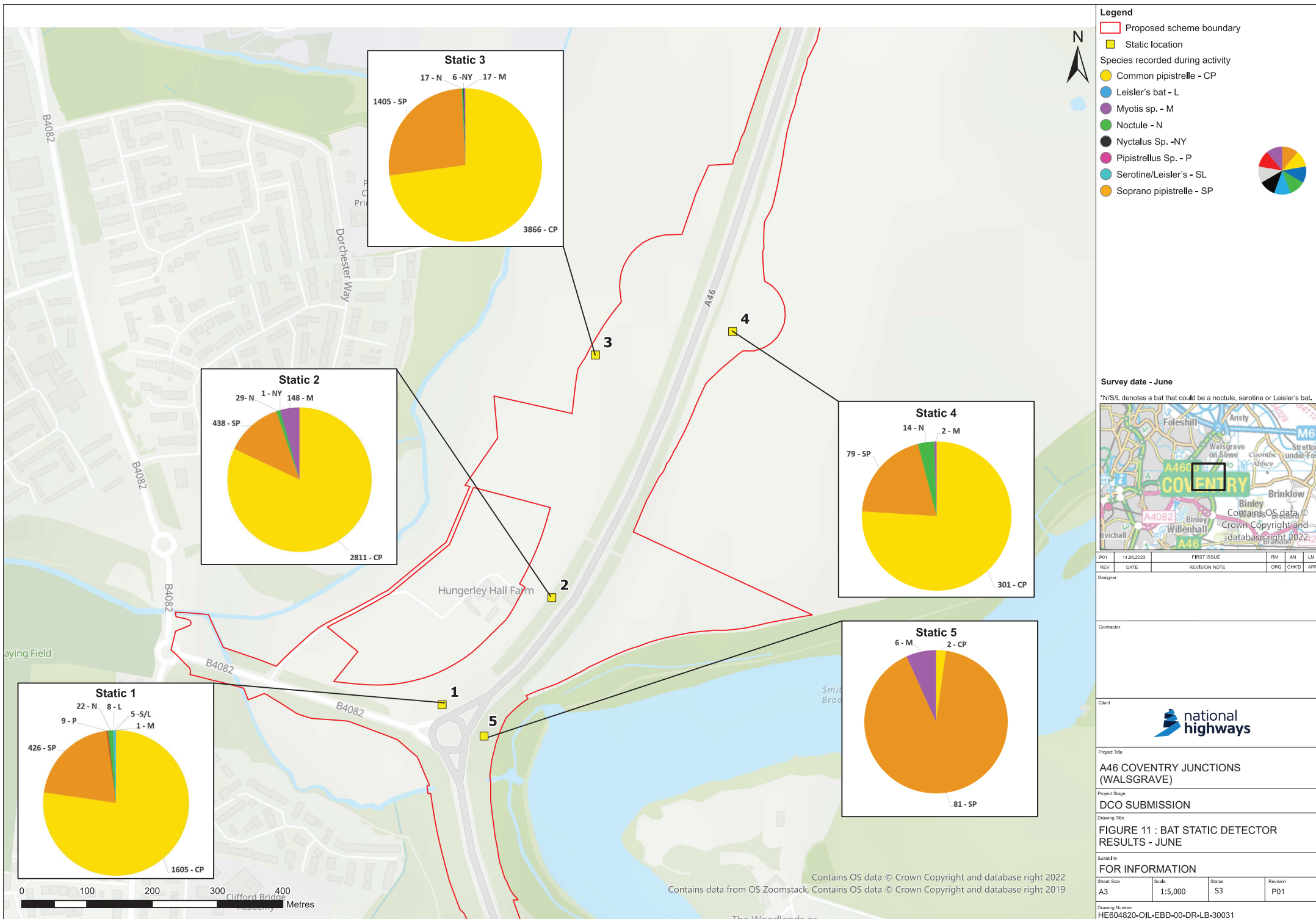
Drawing Title
**FIGURE 8:
BAT ACTIVITY SURVEY : OCTOBER DAWN**

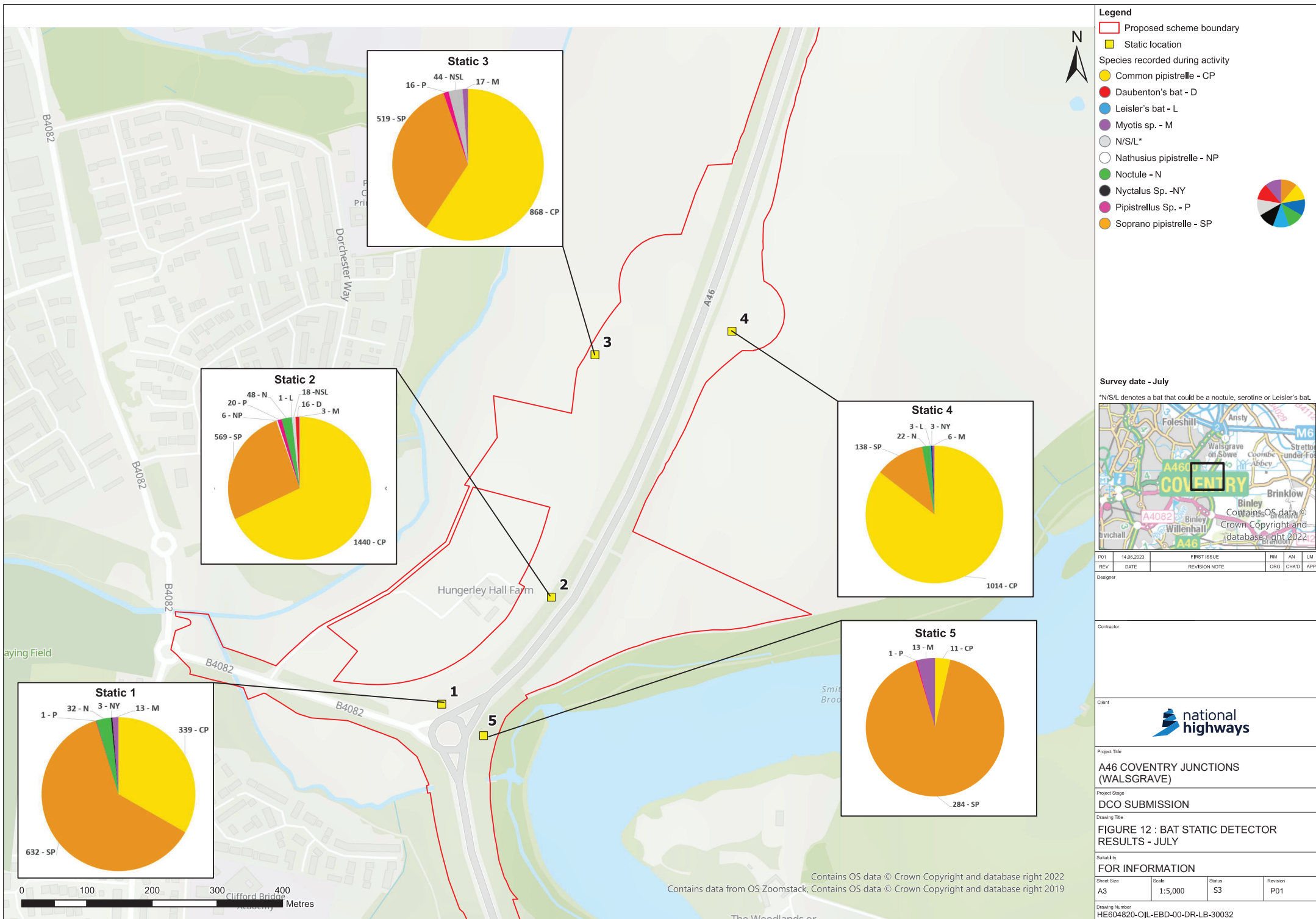
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FOR INFORMATION

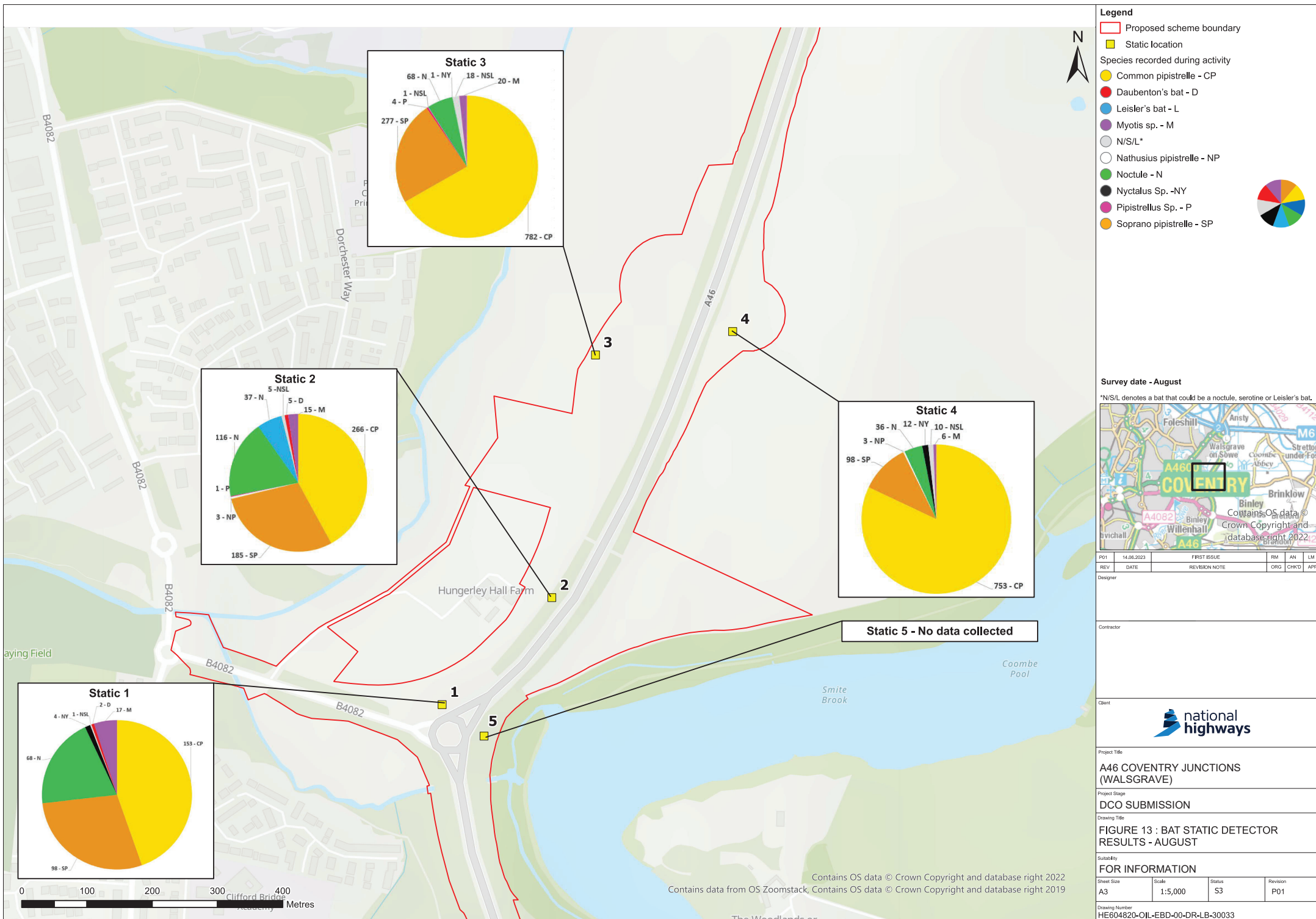
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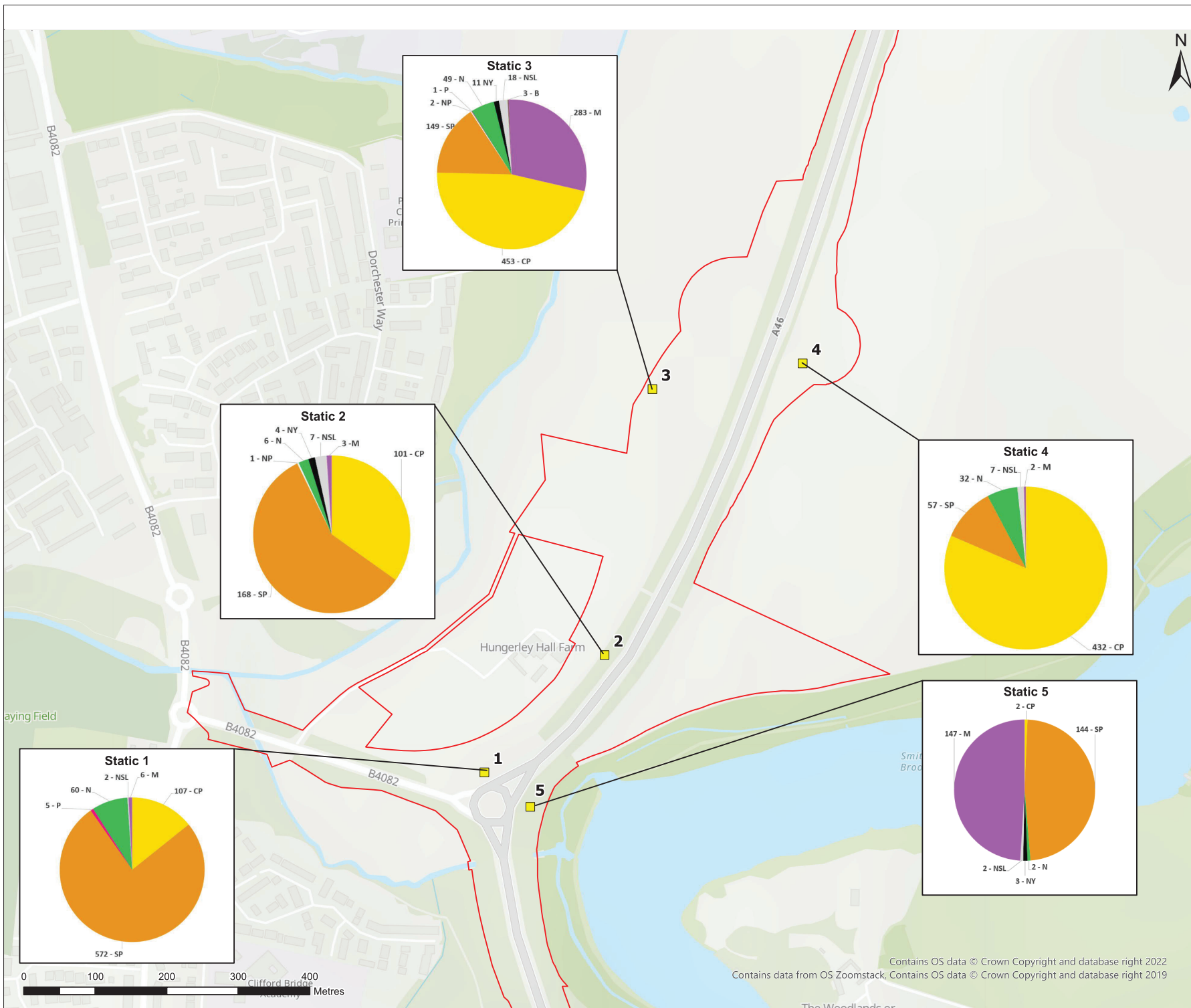












Legend

- Proposed scheme boundary
- Static location
- Species recorded during activity
 - Brown long-eared bat - B
 - Common pipistrelle - CP
 - Myotis sp. - M
 - N/S/L*
 - Nathusius pipistrelle - NP
 - Noctule - N
 - Nyctalus Sp. - NY
 - Pipistrellus Sp. - P
 - Soprano pipistrelle - SP

Survey date - September

*N/S/L denotes a bat that could be a noctule, serotine or Leisler's bat.

REV	DATE	REVISION NOTE	ORG	CHKD	APP
P01	14.08.2023	FIRST ISSUE	RM	AN	LM

Designer

Contractor

Client

Project Title

A46 COVENTRY JUNCTIONS (WALSGRAVE)

Project Stage

DCO SUBMISSION

Drawing Title

FIGURE 14 : BAT STATIC DETECTOR RESULTS - SEPTEMBER

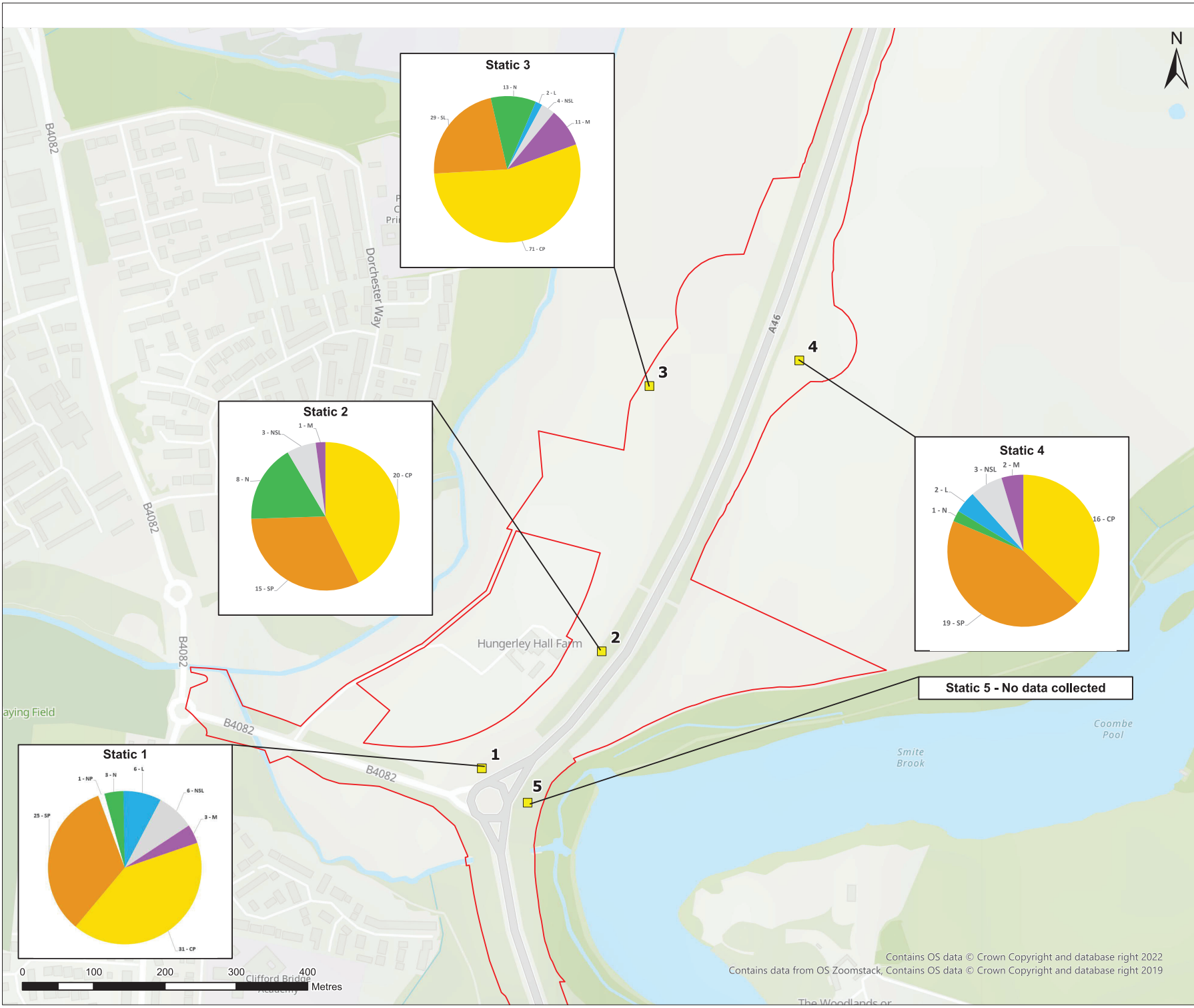
SubTitle

FOR INFORMATION

Sheet Size	Scale	Status	Revision
A3	1:5,000	S3	P01

Drawing Number

HE604820-OIL-EBD-00-DR-LB-30034



Legend

- Proposed scheme boundary
- Static location
- Species recorded during activity
 - Common pipistrelle - CP
 - Daubenton's bat - D
 - Leisler's bat - L
 - Myotis sp. - M
 - N/S/L*
 - Nathusius pipistrelle - NP
 - Noctule - N
 - Nyctalus Sp. -NY
 - Pipistrellus Sp. - P
 - Soprano pipistrelle - SP

Survey date - October

*N/S/L denotes a bat that could be a noctule, serotine or Leisler's bat.

P01	14.08.2023	FIRST ISSUE	RM	AN	LM
REV	DATE	REVISION NOTE	ORG	CHKD	APP

Contractor

Client

Project Title

A46 COVENTRY JUNCTIONS (WALSGRAVE)

Project Stage

DCO SUBMISSION

Drawing Title

BAT STATIC DETECTOR RESULTS - OCTOBER

SubTitle

FOR INFORMATION

Sheet Size	Scale	Status	Revision
A3	1:5,000	S3	P01

Drawing Number

HE604820-OIL-EBD-00-DR-LB-30035

Appendix B. Automated Survey Data

This Appendix includes the full automated survey data, in which the data is presented as the number of passes recorded of each species per night.

There were some bat calls analysed as either noctule, serotine or Leisler's (N/S/L) due to the overlapping call characteristics of these three species, it is not always possible to determine the origin of their calls to species level.

April

Table 5-1 : Static 3

Date	Common pipistrelle	Soprano pipistrelle	Noctule	N/S/L	Myotis sp.
26/04/2022	10	-	1	-	1
27/04/2022	-	-	-	-	-
28/04/2022	-	1	-	-	-
29/04/2022	4	-	2	-	1
30/04/2022	164	33	5	1	1
Total	178	34	8	1	3

Table 5-2 : Static 4

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Myotis sp.	Brown long eared
26/04/2022	2	7	-	-	-
27/04/2022	-	-	-	-	-
28/04/2022	-	7	1	-	-

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Myotis sp.	Brown long eared
29/04/2022	1	4	-	1	-
30/04/2022	106	161	4	-	1
Total	109	179	5	1	1

Table 5-3 : Static 5

Date	Common pipistrelle	Soprano pipistrelle	Pipistrellus Sp.	Noctule	Leisler's bat	Nyctalus Sp.	N/S/L	Daubenton's bat	Myotis sp.
26/04/2022	401	917	277	-	-	-	129	-	106
27/04/2022	20	284	256	-	-	-	153	1	114
28/04/2022	100	463	126	21	1	333	-	2	50
29/04/2022	174	238	158	2	-	-	253	1	167
30/04/2022	675	956	111	186	-	-	271	-	286
Total	1370	2858	928	209	1	333	806	4	723

May

Table 5-4 : Static 1

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Noctule	Leisler's bat	N/S/L	Nyctalus Sp.	Serotine/L eisler's	Brown long-eared bat	Myotis sp.
24/05/2022	35	5	1	10	-	-	-	-	-	-
25/05/2022	231	19	-	9	-	-	-	-	-	-
26/05/2022	40	88	-	1	1	1	3	3	-	1
27/05/2022	13	9	-	-	-	-	-	-	-	-
28/05/2022	11	4	-	10	-	-	-	1	1	-
Total	330	125	1	30	1	1	3	4	1	1

Table 5-5 : Static 2

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Nyctalus Sp.	Serotine/Leisler's	Daubenton's bat	Myotis sp.
24/05/2022	11	1	7	-	-	5	-
25/05/2022	5	2	-	-	-	3	1
26/05/2022	8	3	1	-	-	-	2
27/05/2022	9	5	-	1	-	-	1
28/05/2022	41	75	8	-	1	-	3
Total	74	86	16	1	1	8	7

Table 5-6 : Static 3

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Noctule	Leisler's bat	N/S/L	Brown long-eared bat	Myotis sp.
24/05/2022	82	4	1	1	-	5	-	5
25/05/2022	100	11	-	-	-	3	-	4
26/05/2022	88	16	-	3	-	12	-	4
27/05/2022	45	2	-	-	1	4	2	6
28/05/2022	143	11	-	3	1	9	2	4
Total	458	44	1	7	2	33	4	23

Table 5-7 : Static 5

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Brown long-eared bat	Myotis sp.
24/05/2022	6	2	4	2	-
25/05/2022	3	-	-	-	-
26/05/2022	6	1	1	-	-
27/05/2022	8	3	-	-	--
28/05/2022	31	64	8	-	2
Total	54	70	13	2	2

June

Table 5-8 : Static 1

Date	Common pipistrelle	Soprano pipistrelle	Pipistrellus Sp.	Noctule	Leisler's bat	Serotine/Leisler's	Myotis sp.
25/06/2022	123	56	-	5	-	1	-
26/06/2022	272	99	-	2	6	-	1
27/06/2022	68	54	1	1	1	4	-
28/06/2022	448	130	6	8	-	1	-
29/06/2022	694	87	2	6	1	-	-
Total	1605	426	9	22	8	5	1

Table 5-9 : Static 2

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Nyctalus Sp.	Myotis sp.
25/06/2022	342	49	7	-	20
26/06/2022	622	58	3	-	46
27/06/2022	1270	180	5	1	59
28/06/2022	290	98	8	-	4
29/06/2022	287	53	6	-	19
Total	2811	438	29	1	148

Table 5-10 : Static 3

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Nyctalus Sp.	Myotis sp.
25/06/2022	1043	522	4	-	6

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Nyctalus Sp.	Myotis sp.
26/06/2022	1251	225	3	-	1
27/06/2022	613	253	1	5	1
28/06/2022	706	362	4	-	-
29/06/2022	253	43	5	1	9
Total	3866	1405	17	6	17

Table 5-11 : Static 4

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Myotis sp.
25/06/2022	-	-	2	-
26/06/2022	3	1	-	-
27/06/2022	22	9	2	2
28/06/2022	159	48	2	-
29/06/2022	117	21	8	-
Total	301	79	14	2

Table 5-12 : Static 5

Date	Common pipistrelle	Soprano pipistrelle	Myotis sp.
28/06/2022	-	-	-
29/06/2022	2	81	6
Total	2	81	6

July

Table 5-13 : Static 1

Date	Common pipistrelle	Soprano pipistrelle	Pipistrellus Sp.	Noctule	Nyctalus Sp.	Myotis sp.
27/07/2022	47	93	-	5	-	2
28/07/2022	43	140	-	13	-	3
29/07/2022	46	264	-	9	-	4
30/07/2022	161	111	1	3	3	1
31/07/2022	42	24	-	2		3
Total	339	632	1	32	3	13

Table 5-14 : Static 2

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrellus Sp.	Noctule	Leisler's bat	N/S/L	Daubenton's bat	Myotis sp.
27/07/2022	622	164	4	3	14	-	5	4	-
28/07/2022	713	338	1	8	18	1	3	4	2
29/07/2022	43	37	1	8	8	-	2	2	-
30/07/2022	22	7	-	-	3	-	4	-	-
31/07/2022	40	23	-	1	5	-	4	6	1
Total	1440	569	6	20	48	1	18	16	3

Table 5-15 : Static 3

Date	Common pipistrelle	Soprano pipistrelle	Pipistrellus Sp.	N/S/L	Myotis sp.
27/07/2022	136	134	2	10	3
28/07/2022	193	163	4	7	3

29/07/2022	213	111	7	14	7
30/07/2022	205	42	3	7	1
31/07/2022	121	69	-	6	3
Total	868	519	16	44	17

Table 5-16 : Static 4

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Leisler's bat	Nyctalus Sp.	Myotis sp.
27/07/2022	210	46	3	-	1	-
28/07/2022	114	21	2	-	1	-
29/07/2022	233	53	8	-	-	1
30/07/2022	378	7	3	3	1	-
31/07/2022	79	11	6	-	-	5
Total	1014	138	22	3	3	6

Table 5-17 : Static 5

Date	Common pipistrelle	Soprano pipistrelle	Pipistrellus Sp.	Myotis sp.
27/07/2022	2	38	-	1
28/07/2022	2	58	1	7
29/07/2022	4	62	-	-
30/07/2022	3	66	-	2
31/07/2022	-	60	-	3
Total	11	284	1	13

August

Table 5-18 : Static 1

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Nyctalus bat	N/S/L	Daubenton's bat	Myotis sp.
10/08/2022	22	16	6	-	-	-	-
11/08/2022	40	26	18	-	-	2	-
12/08/2022	19	6	10	4	-	-	1
13/08/2022	33	32	16	-	1	-	16
14/08/2022	39	18	18	-	-	-	-
Total	153	98	68	4	1	2	17

Table 5-19 : Static 2

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrellus Sp.	Noctule	Nyctalus Sp.	N/S/L	Daubenton's bat	Myotis sp.
10/08/2022	56	32	-	1	6	3	-	1	2
11/08/2022	50	25	1	-	15	11	-	-	2
12/08/2022	40	41	2	-	15	11	-	1	1
13/08/2022	42	38	-	-	44	12	2	-	6
14/08/2022	78	49	-	-	36	-	3	3	4
Total	266	185	3	1	116	37	5	5	15

Table 5-20 : Static 3

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrellus Sp.	Noctule	Nyctalus bat	N/S/L	Myotis sp.
10/08/2022	82	56	3	1	7	1	3	5
11/08/2022	267	134	1	-	35	-	11	9
12/08/2022	433	82	-	-	24	-	4	6
13/08/2022	-	5	-	-	2	-	-	-
Total	782	277	4	1	68	1	18	20

Table 5-21 : Static 4

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Noctule	Nyctalus Sp.	N/S/L	Myotis sp.
10/08/2022	42	13	1	2	1	-	-
11/08/2022	125	17	2	6	3	8	-
12/08/2022	239	32	-	2	5	1	1
13/08/2022	301	29	-	4	3	-	3
14/08/2022	46	7	-	22	-	1	2
Total	753	98	3	36	12	10	6

September

Table 5-22 : Static 1

Date	Common pipistrelle	Soprano pipistrelle	Pipistrellus Sp.	Noctule	N/S/L	Myotis sp.
10/09/2022	7	29	1	9	-	-
11/09/2022	81	482	4	33	-	2
12/09/2022	11	35	-	11	1	3
13/09/2022	-	16	-	4	-	-
14/09/2022	8	10	-	3	1	1
Total	107	572	5	60	2	6

Table 5-23 : Static 2

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Noctule	Nyctalus bat	N/S/L	Myotis sp.
10/09/2022	23	18	-	1	-	4	1
11/09/2022	77	149	1	3	1	3	1
12/09/2022	-	1	-	2	1	-	-
13/09/2022	-	-	-	-	-	-	-
14/09/2022	1	-	-	-	2	-	1
Total	101	168	1	6	4	7	3

Table 5-24 : Static 3

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrellus Sp.	Noctule	Nyctalus bat	N/S/L	Brown long-eared bat	Myotis sp.
10/09/2022	42	26	1	-	27	-	1	3	7
11/09/2022	205	60	-	1	10	-	2	-	7

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrellus Sp.	Noctule	Nyctalus bat	N/S/L	Brown long-eared bat	Myotis sp.
12/09/2022	120	37	-	-	11	11	-	-	145
13/09/2022	59	14	-	-	-	-	6	-	114
14/09/2022	27	12	1	-	1	-	9	-	10
Total	453	149	2	1	49	11	18	3	283

Table 5-25 : Static 4

Date	Common pipistrelle	Soprano pipistrelle	Noctule	N/S/L	Myotis sp.
10/09/2022	42	12	10	3	-
11/09/2022	172	25	12	-	-
12/09/2022	204	10	6	-	-
13/09/2022	14	10	4	4	2
14/09/2022	-	-	-	-	-
Total	432	57	32	7	2

Table 5-26 : Static 5

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Nyctalus bat	N/S/L	Myotis sp.
10/09/2022	-	20	1	-	-	39
11/09/2022	-	35	1	3	-	12
12/09/2022	-	39	-	-	2	16
13/09/2022	1	21	-	-	-	38
14/09/2022	1	29	-	-	-	42
Total	2	144	2	3	2	147

October

Table 5-27 : Static 1

Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Noctule	Leisler's bat	N/S/L	Myotis sp.
10/10/2022	1	-	-	-	1	-	-
11/10/2022	2	-	-	-	-	2	-
12/10/2022	14	11	1	2	4	2	-
13/10/2022	4	1	-	-	1	1	-
14/10/2022	10	13	-	1	-	1	3
Total	31	25	1	3	6	6	3

Table 5-28 : Static 2

Date	Common pipistrelle	Soprano pipistrelle	Noctule	N/S/L	Myotis sp.
10/10/2022	-	-	-	-	-
11/10/2022	-	-	-	-	-
12/10/2022	11	13	6	1	1
13/10/2022	9	2	2	2	
14/10/2022	-	-	-	-	-
Total	20	15	8	3	1

Table 5-29 : Static 3

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Leisler's bat	N/S/L	Myotis sp.
10/10/2022	-	-	-	-	-	-
11/10/2022	-	-	-	-	-	-

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Leisler's bat	N/S/L	Myotis sp.
12/10/2022	58	21	5	2	1	6
13/10/2022	12	5	6	-	3	1
14/10/2022	1	3	2	-	-	4
Total	71	29	13	2	4	11

Table 5-30 : Static 4

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Leisler's bat	N/S/L	Myotis sp.
10/10/2022	-	2	-	-	-	1
11/10/2022	2	1	1		2	1
12/10/2022	-	-	-	-	-	-
13/10/2022	11	4	-	-	1	-
14/10/2022	3	12	-	2	-	-
Total	16	19	1	2	3	2