

MONA OFFSHORE WIND PROJECT

Environmental Statement

Volume 7, Annex 3.10: Bat activity survey technical report

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Image of an offshore wind farm

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Glossary

Term	Meaning
Expert Working Group (EWG)	Expert working groups set up with relevant stakeholders as part of the Evidence Plan process.

Acronyms

Acronym	Description
BTO AP	British Trust for Ornithology's Acoustic Pipeline
BLE	Brown long eared
CP	Common pipistrelle
GHS	Greater horseshoe bat
L	Leisler's bat
LHS	Lesser horseshoe bat
LE	Long-eared bat
MLWS	Mean Low Water Springs
My	Myotis sp.
NP	Nathusius' pipistrelle
N	Noctule bat
S	Serotine
SP	Soprano pipistrelle
TCC	Temporary Construction Compound

Units

Unit	Description
km	Kilometres
m	Metres
%	Percentage

1 Bat activity survey technical report

1.1 Introduction

- 1.1.1.1 This document forms Volume 7, Annex 3.10: Bat activity survey technical report of the Environmental Statement for the Mona Offshore Wind Project.
- 1.1.1.2 This technical report presents the results of the bat activity surveys undertaken between April and October 2023 to inform Volume 3, Chapter 3: Onshore ecology of the Environmental Statement.
- 1.1.1.3 Two separate areas have been defined for the purposes of this technical report. These include the 'study area', which describes the geographical extent subject to desk based research, and the 'survey area', which describes the area of land subject to site-specific surveys. The extent of the study area and the survey area were selected to ensure data was collected for the Mona Onshore Development Area and the surroundings that may support this species group and may reasonably be affected by the Mona Offshore Wind Project. The extent of the study area and the survey area were discussed and agreed with the onshore ecology Expert Working Group (EWG).

1.2 Study area

- 1.2.1.1 The study area comprises the Mona Onshore Development Area, landward of Mean Low Water Springs (MLWS) and a 2 km buffer ('the bat activity study area').
- 1.2.1.2 The location and geographical extent of the bat activity study area is presented in Figure 1.1 of this technical report.

1.3 Survey area

- 1.3.1.1 Following the commencement of the bat activity surveys, the Mona Onshore Development Area was refined and now occupies a smaller geographical area. As such, the area of land subject to bat activity surveys ('the bat activity survey area') extends beyond the current iteration of the Mona Onshore Development Area. The results from surveys undertaken beyond the Mona Onshore Development Area (i.e. surveys undertaken based on an earlier design iterations) have been included in this technical report because they provide context regarding the ecological sensitivity of the wider area and to inform Volume 3, Chapter 3: Onshore ecology of the Environmental Statement (where relevant). All the ecological data collected as part of the Environmental Statement for the Mona Offshore Wind Project has been made publicly available through the relevant data records centre.
- 1.3.1.2 Adopting a survey area that is greater in extent than the Mona Onshore Development Area is in accordance with the precautionary approach. It ensures that the Environmental Statement is accurately informed with data from within the Mona Onshore Development Area (i.e. that may be subject to direct impacts) and data from outside the Mona Onshore Development Area (i.e. that may be subject to indirect impacts).
- 1.3.1.3 The location and geographical extent of the bat activity survey area is presented in Figure 1.1 of this technical report.

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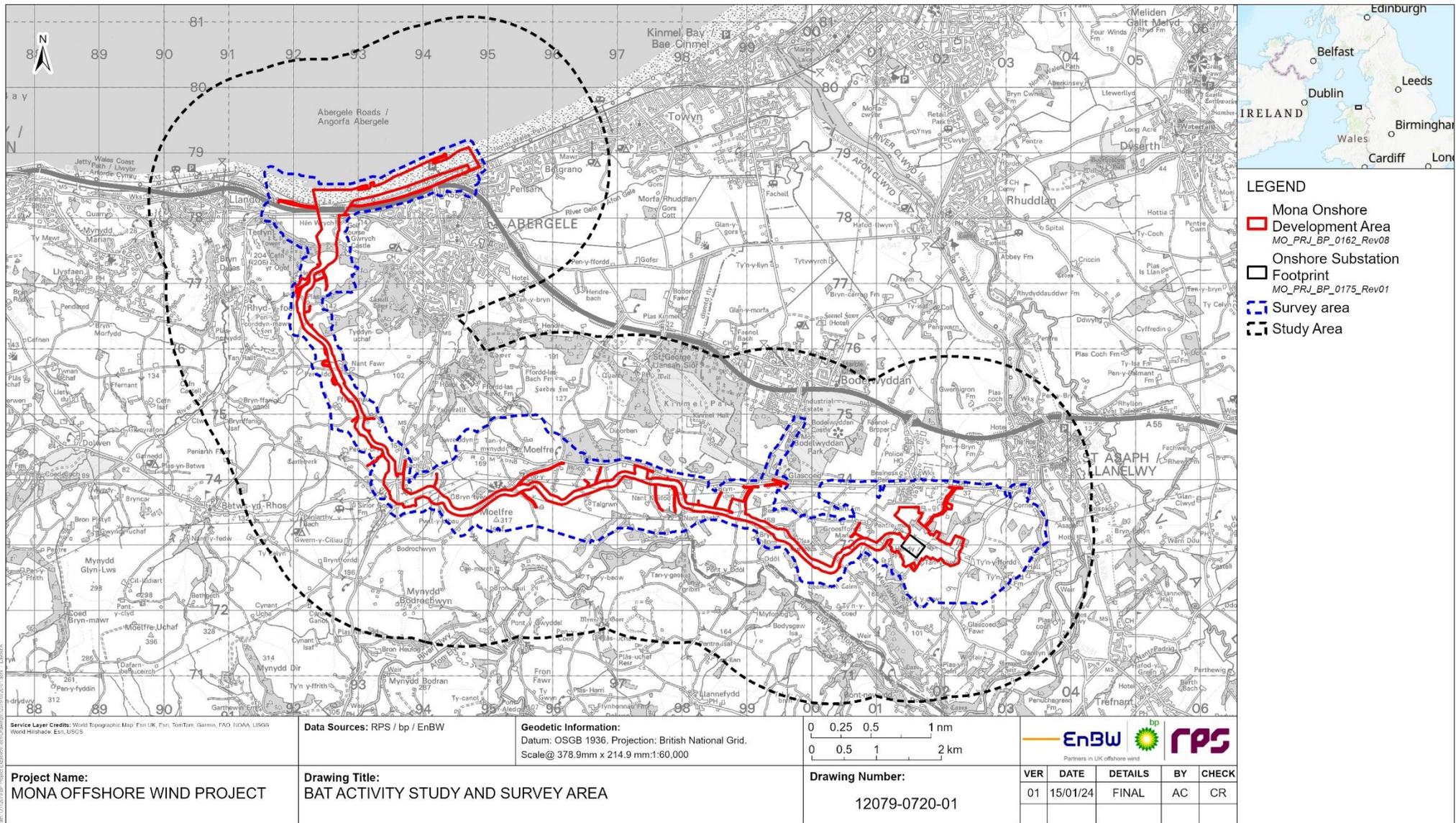


Figure 1.1: Bat activity study area and survey area.

1.4 Relevant legislation

1.4.1.1 Three key pieces of legislation are relevant for bats under Welsh and UK law: the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations), the Wildlife and Countryside Act 1981 (as amended) and the Environment (Wales) Act 2016.

1.4.1.2 All bat species are listed under Schedule 2 of the Habitats Regulations. As such, they are European protected species. This makes it an offence to:

- Deliberately capture, injure or kill a bat
- Deliberately disturb a bat
- Damage or destroy a breeding site or resting place of a bat.

1.4.1.3 All bat species are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under Section 9 of the Wildlife and Countryside Act 1981 (as amended). it is an offence to:

- Intentionally kill, injure or take a bat
- Possess or control any live or dead specimen or anything derived from a bat
- Intentionally or recklessly damage, destroy or obstruct any structure or place used for shelter or protection by a bat
- Intentionally or recklessly disturb a bat while it is occupying a structure or place, which it uses for that purpose.

1.4.1.4 In Wales Section 7 of the Environment (Wales) Act 2016 affords certain bat species due regard in the planning system. Section 7 lists barbastelle *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum*, and lesser horseshoe bat *Rhinolophus hipposideros*. All species listed under Section 7 of the Environment (Wales) Act 2016 are Species of Principal Importance (SPI), giving public bodies and local planning authorities a legal duty to have regard for conserving a SPI when exercising their duties.

1.5 Consultation

1.5.1.1 The scope, methodology and findings of the bat activity surveys, including those undertaken beyond the current Mona Onshore Development Area, were discussed, and agreed with stakeholders via regular Onshore Ecology EWG Meetings. Further detail regarding consultation undertaken with to respect onshore ecology, including bat activity surveys can be found in Volume 3, Chapter 3: Onshore ecology of the Environmental Statement and the Consultation Report (Document reference: E3).

1.6 Methodology

1.6.1 Overview

1.6.1.1 A combination of desktop studies and site-specific surveys were undertaken to establish the presence or likely absence of different species of bat within the bat activity study area.

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1.6.1.2 The results of the desktop studies are described in Volume 7, Annex 3.1: Onshore ecology desk study of the Environmental Statement and summarised in section 1.7.1 of this technical report. The results of the bat activity surveys undertaken between April and October 2023 are detailed in section 1.7 of this technical report.

1.6.2 Desk study

1.6.2.1 Information on bats within the bat activity study area was collected from existing studies and datasets. These are summarised in Table 1.1.

Table 1.1 Summary of key desktop sources

Title	Source	Year	Author
Historical biological records	Cofnod	2023	Cofnod
DataMapWales	Welsh Government	2023	Welsh Government
Multi-Agency Geographic Information for the Countryside (MAGIC)	Department for the Environment, Food & Rural Affairs (Defra)	2023	JNCC
UK Protected Area Joint Nature Conservation Committee (JNCC)	JNCC website	2023	JNCC
UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats	CIEEM	2023	Reason and Wray

1.6.3 Site-specific surveys

1.6.3.1 The results of the extended phase 1 habitat surveys (see Volume 7, Annex 3.2: Extended phase 1 habitat survey technical report of the Environmental Statement) and an understanding of where the greatest impacts would occur (based on the most up to date proposals at the time of the survey), were used to inform the location of bat activity surveys within the bat activity survey area. The bat activity surveys comprised:

- Automated static bat detector surveys
- Kinmel Hall activity surveys.

1.6.3.2 The surveys were undertaken in accordance with the Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition (Collins, 2016). It is acknowledged that this guidance document was updated in October 2023, after the bat activity surveys had been completed. However, upon review of the updated guidelines, the methods used for the bat activity surveys are unchanged and the data collected remains valid for the purposes of the assessment.

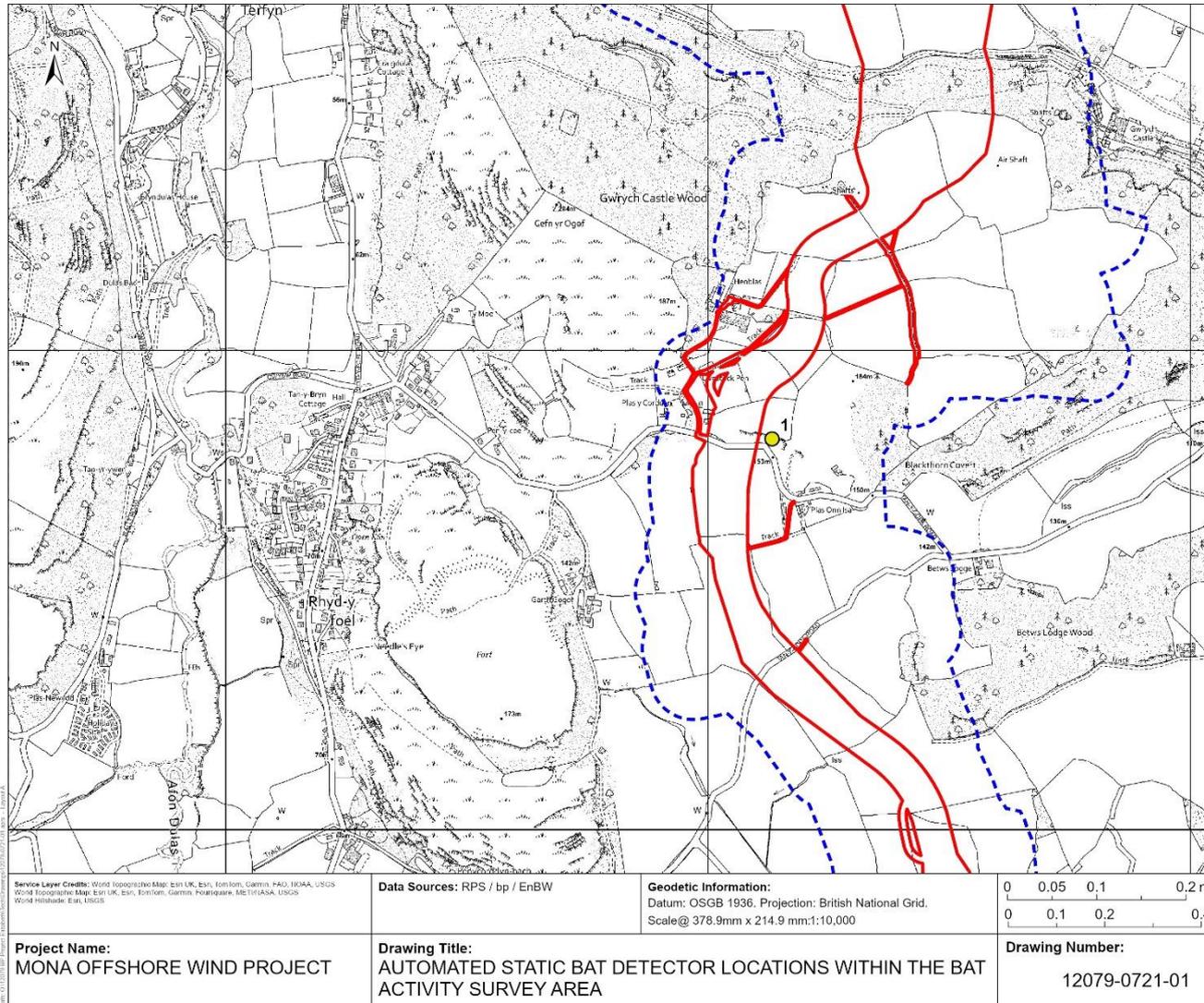
1.6.3.3 All field surveyors were suitably trained and experienced in undertaking the survey methodologies set out in the following sections of this report.

Automated static bat detector surveys

1.6.3.4 Automatic static bat detector surveys were undertaken at 14 strategic locations, specifically in areas of suitable habitat such as woodland and hedgerows, within the bat activity survey area and where the impacts are likely to be greatest. For example,

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suitable habitats located around the Onshore Substation and Temporary Construction Compounds (TCCs). Due to changes to the design of the Onshore Substation and TCCs during the bat activity surveys, and the subsequent changes to expected areas of impacts, the locations of the automated static detectors varied slightly through the survey period. Locations are shown in



1.6.3.5 Figure 1.2 to Figure 1.5 of this technical report below.

1.6.3.6 One automatic static bat detector, Elekon Batlogger S2, was placed at each survey location. Each detector was placed within habitat suitable for bats (e.g. along a hedgerow) and secured in place. Surveyors ensured that the microphones were facing out into the open landscape. Detectors were deployed for a minimum of five nights, twice a month between April and October 2023, inclusive. The detectors were set to record overnight and programmed to commence recording approximately 15 minutes before sunset and terminate recording 15 minutes after sunrise. Detectors were set to record a maximum length of five seconds per detection event, i.e. when bats passed.

1.6.3.7 A summary of all the survey nights, including the month and session number, at each location is shown in Table 1.2. The commencement of the automated static bat detectors surveys was dependent on when access was granted, as discussed in section 1.6.4 of this technical report below.

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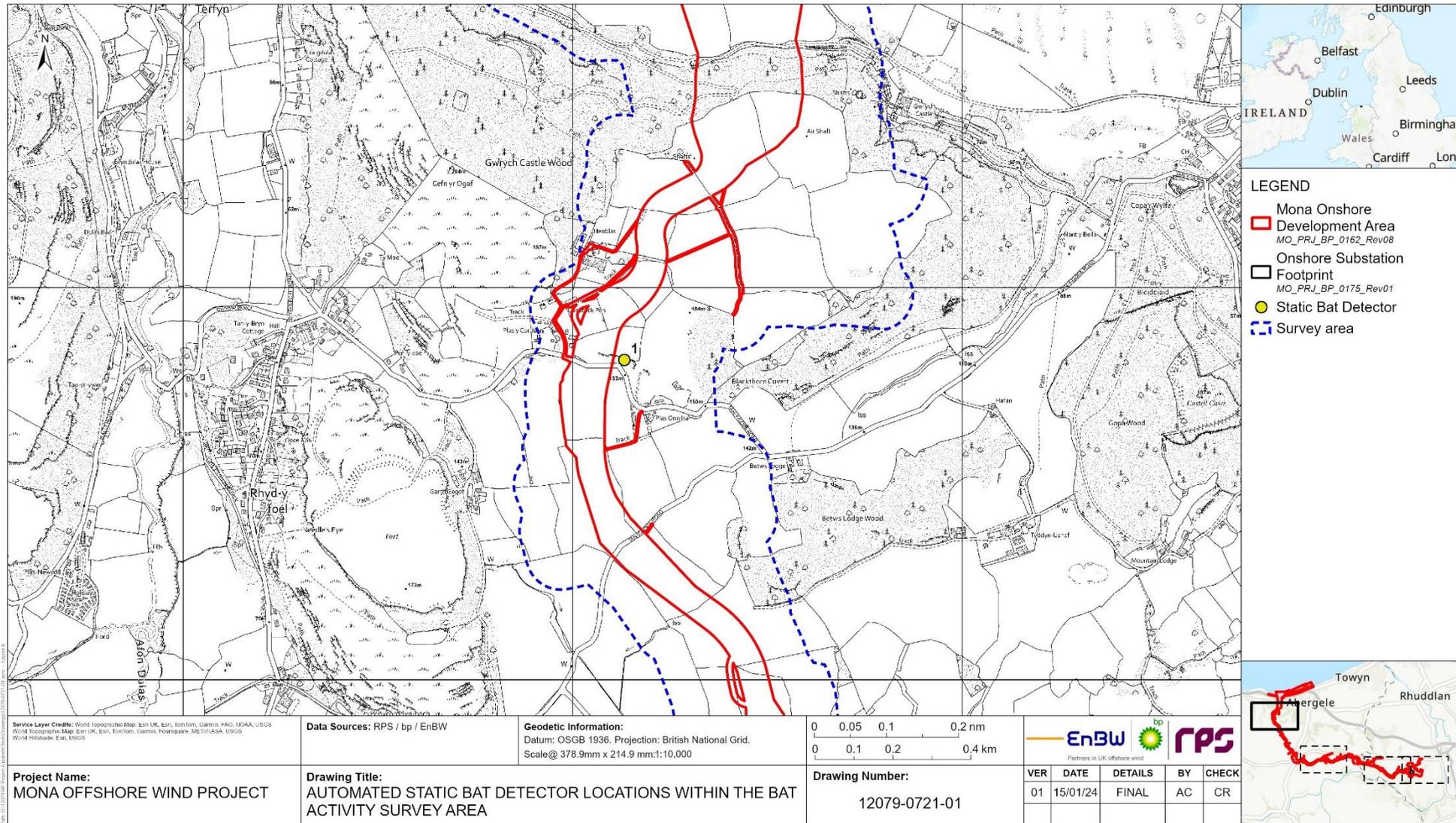


Figure 1.2: Automated static bat detector locations within the bat activity survey area.

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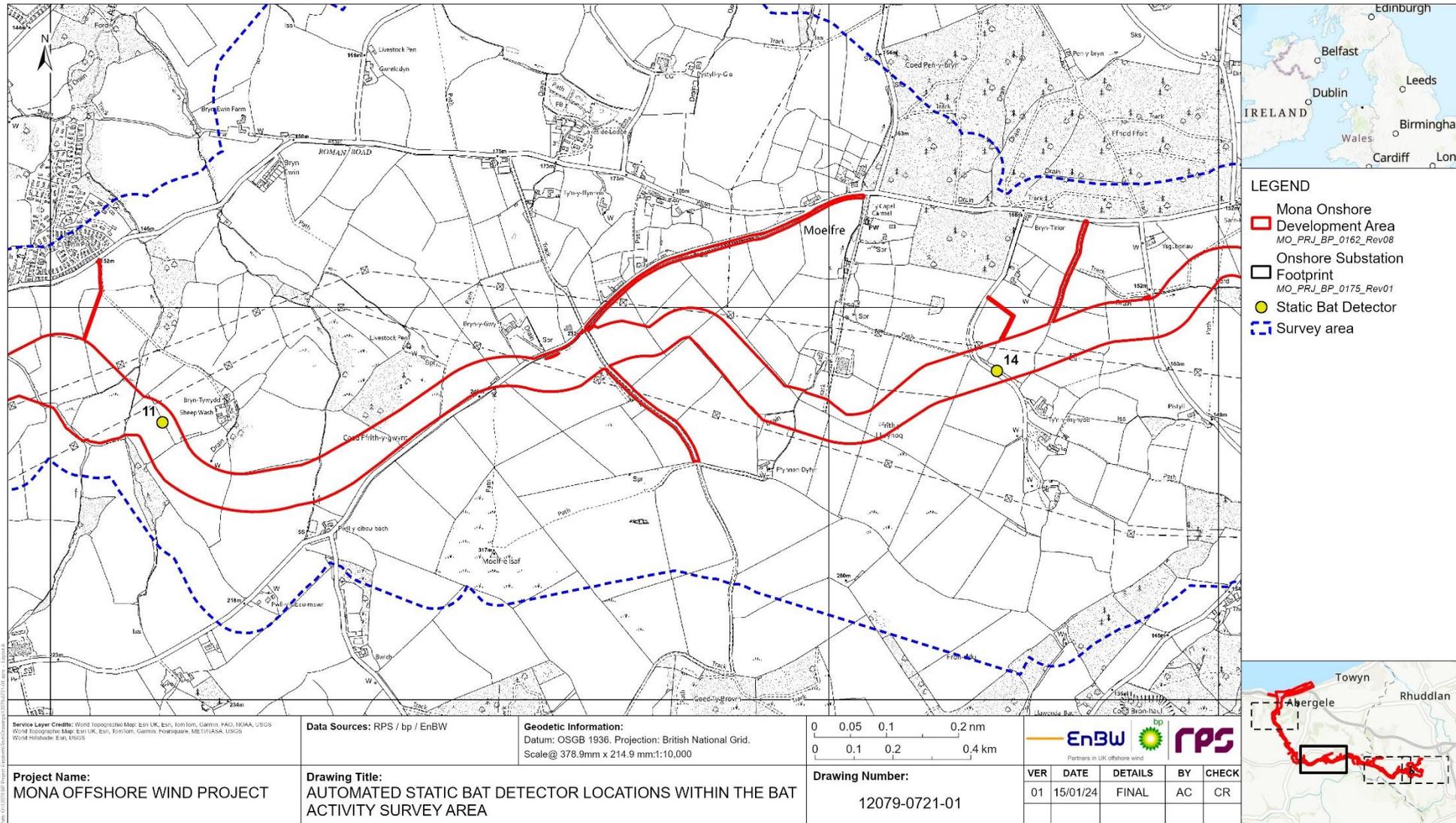


Figure 1.3: Automated static bat detector locations within the bat activity survey area.

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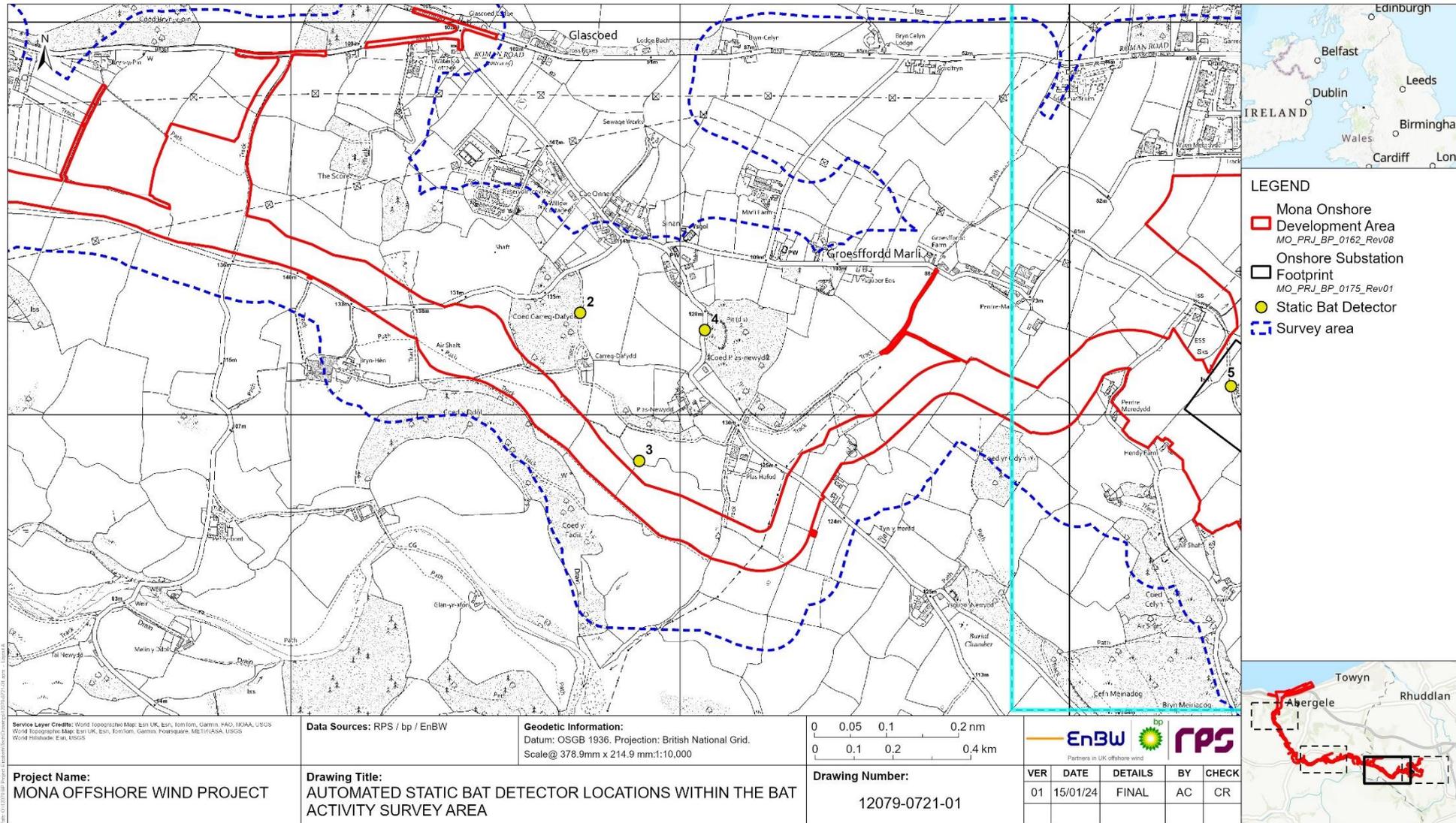


Figure 1.4: Automated static bat detector locations within the bat activity survey area.

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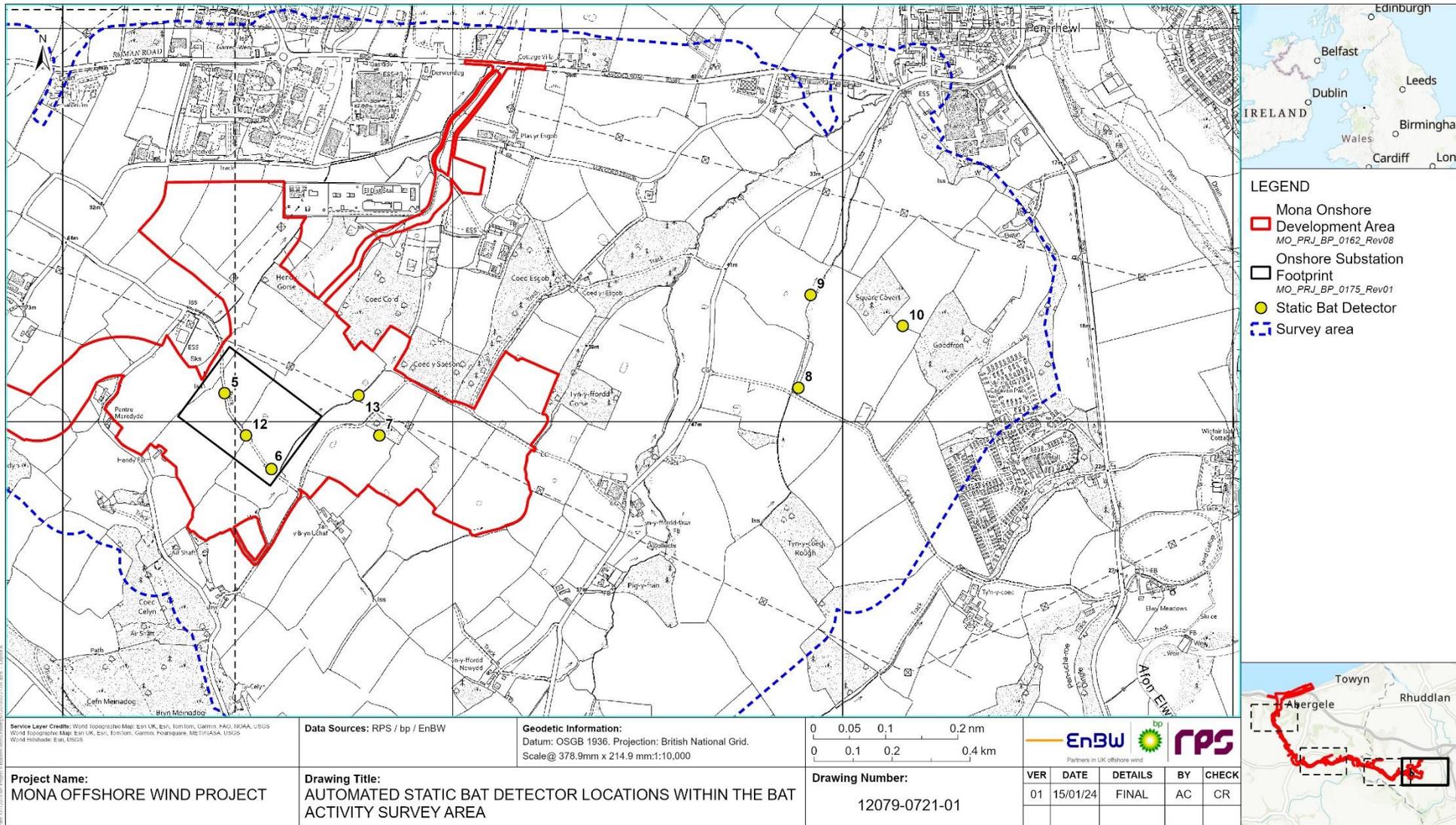


Figure 1.5: Automated static bat detector locations within the bat activity survey area.

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Table 1.2: Summary of the automated static bat detector locations and deployment dates within the bat activity survey area.

Static location	Grid reference	Dates deployed													
		April 2023		May 2023		June 2023		July 2023		August 2023		September 2023		October 2023	
		Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2
1	SH 92133 76816	19 – 23	29 – 2 (May)	17 – 21	24 – 28	9 – 13	23 – 27	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	09 – 13	23 – 27
2	SH 99744 73259	-	-	-	-	9 – 13	-	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	-	-
3	SH 99895 72882	19 – 23	29 – 2 (May)	17 – 21	24 – 28	9 – 13	23 – 27	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	-	-
4	SJ 00064 73215	19 – 23	29 – 2 (May)	17 – 21	24 – 28	9 – 13	23 – 27	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	-	-
5	SJ 01415 73072	19 – 23	29 – 2 (May)	-	-	9 – 13	23 – 27	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	09 – 13	23 – 27
6	SJ 01535 72879	-	29 – 2 (May)	-	24 – 28	9 – 13	23 – 27	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	-	09 – 13	23 – 27
7	SJ 01812 72965	19 – 23	29 – 2 (May)	-	24 – 28	9 – 13	23 – 27	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	09 – 13	23 – 27
8	SJ 02887 73086	19 – 23	-	-	24 – 28	9 – 13	23 – 27	-	-	-	-	-	-	-	-
9	SJ 02918 73322	19 – 23	29 – 2 (May)	-	24 – 28	9 – 13	23 – 27	-	-	-	-	-	-	-	-
10	SJ 03154 73243	19 – 23	29 – 2 (May)	-	24 – 28	9 – 13	23 – 27	-	-	-	-	-	-	-	-
11	SH 94289 73707	-	-	-	-	-	-	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	09 – 13	23 – 27
12	SJ 01470 72965	-	-	-	-	-	-	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	-	-
13	SJ 01759 73066	-	-	-	-	-	-	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	09 – 13	23 – 27

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Static location	Grid reference	Dates deployed													
		April 2023		May 2023		June 2023		July 2023		August 2023		September 2023		October 2023	
		Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2
14	SH 96432 73838	-	-	-	-	-	-	7 – 11	21 – 25	04 – 08	29 – 02 (September)	08 – 12	22 – 26	09 – 13	23 – 27

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Bat sound analysis

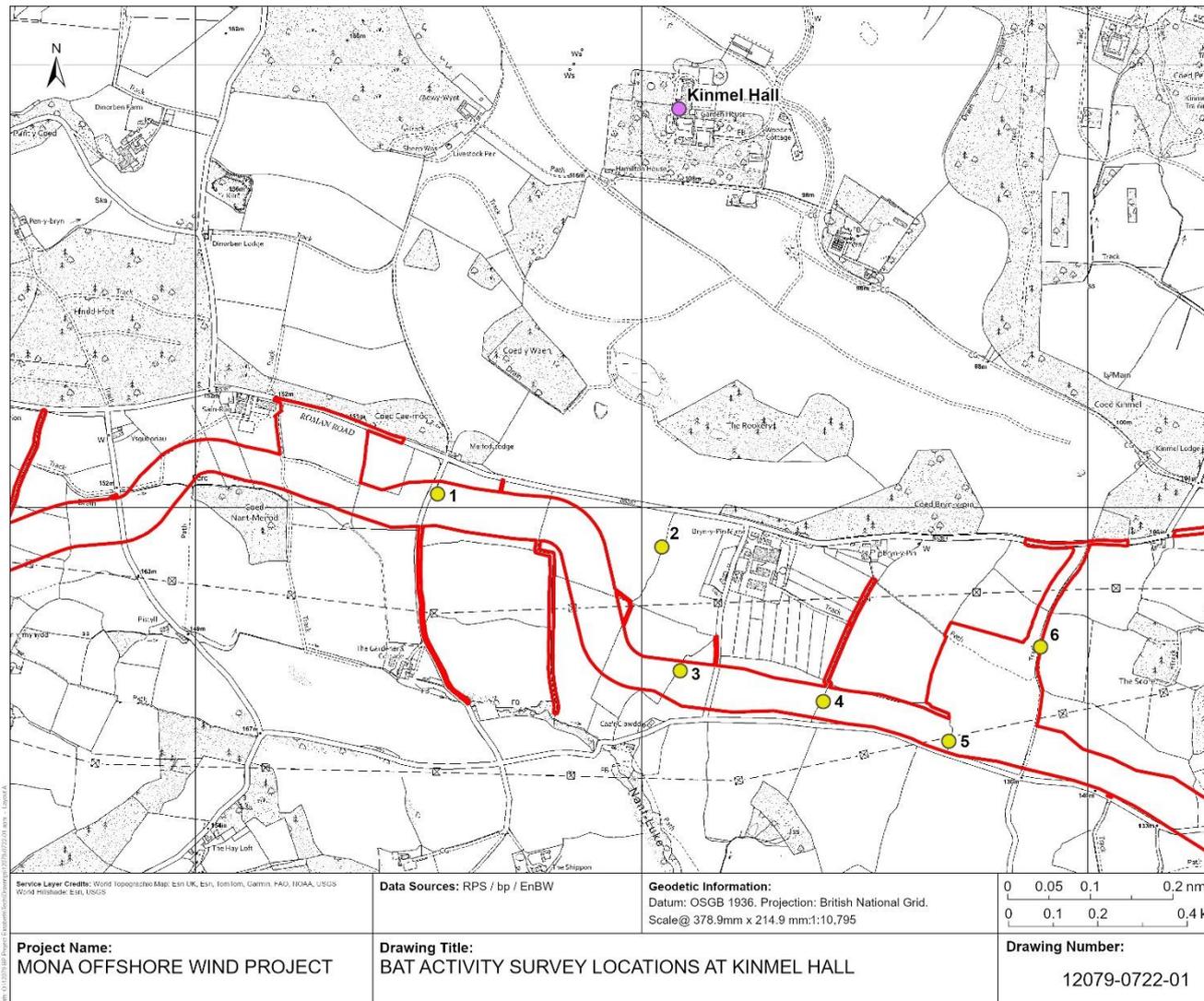
- 1.6.3.8 After the surveys, every audio recording collected by the automated static bat detectors was analysed to confirm the bat species present. Auto-identification analysis was completed by entering the audio recording into the British Trust for Ornithology's Acoustic Pipeline (BTO AP). The BTO AP is software that enables audio recordings (WAV files) to be uploaded to a secure remote server and processed to identify all bat calls. This program automatically analyses any calls within the sound files, provides a level of confidence, with probability scores ranging from 0-0.99 (i.e. 0.99 represents 99% probability) for the calls recorded and details the results. In accordance with the precautionary approach, files with sound that was identified as being from a bat ('identifications') with a probability of less than 0.5 (50%) were discarded.
- 1.6.3.9 A verification and quality assurance of the auto-identification was then manually undertaken. Manual checks prioritised unexpected and unlikely species (i.e. species not regularly recorded in the area), such as greater horseshoe bats *Rhinolophus ferrumequinum*, and barbastelles *Barbastella barbastellus*. A random sample of 10% of the recordings with a probability of more than 0.5 was also checked. If this check recorded an error rate of more than 10% then the checks were increased.
- 1.6.3.10 Species identification was automatically assigned by BTO AP. However, any *Myotis* or *Plecotus* species were subsequently and manually grouped into genus, post-analysis due to the uncertainty associated with identifying these genera to species level.
- 1.6.3.11 Where any uncertainty was present during analysis, species were grouped into genus (e.g. pipistrelle *Pipistrellus* sp.). For example, if the call parameters overlapped between different species.

Kinmel Hall bat activity surveys

- 1.6.3.12 Consultation with Conwy County Borough Council during the onshore ecology EWG confirmed a lesser horseshoe bat *Rhinolophus hipposideros* roost was present at Kinmel Hall, located approximately 0.5 miles north of the Mona Onshore Development Area. To determine if the Mona Onshore Development Area is used by lesser horseshoe bats, and other species, bat activity surveys were undertaken along hedgerows in proximity to Kinmel Hall within the Mona Onshore Development Area.

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1.6.3.13 The bat activity surveys involved up to six bat surveyors located at pre-determined points, as shown in



1.6.3.14 Figure 1.6. The pre-determined points were based on the location of habitat suitable for lesser horseshoe bats (e.g. mature hedgerows), and to ensure coverage along the Mona Onshore Development Area south of Kinmel Hall. Surveyors faced towards the location of the known lesser horseshoe bat roost to the north. Surveys commenced 15 minutes before sunset and continued for three hours after sunset.

1.6.3.15 The bat activity surveys were undertaken on three separate occasions, the evenings of 28 June, 19 July, and 20 September 2023. All three bat activity surveys were undertaken under appropriate weather conditions (temperatures at or above 10 degrees Celsius, with no heavy rain or wind), as specified in Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition (Collins, 2016).

1.6.3.16 Surveyors recorded all bat activity during the survey, including the bat species (or group, discussed below), the flight pattern and activity type (e.g. foraging or commuting), direction and height of flight, the time and any habitat features used by bats.

1.6.3.17 As the aim of the survey was to determine lesser horseshoe bat activity, all other bat species were grouped into pipistrelles, *Myotis sp.*, long-eared *Plecotus sp.*, big bat (to include noctule, serotine and Leisler's bat), greater horseshoe bat, and barbastelle (if recorded). Identification was undertaken using sound calls within the field where

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possible, and subject to desk based analysis using Elekon Batexplorer (where field based analysis was not possible).

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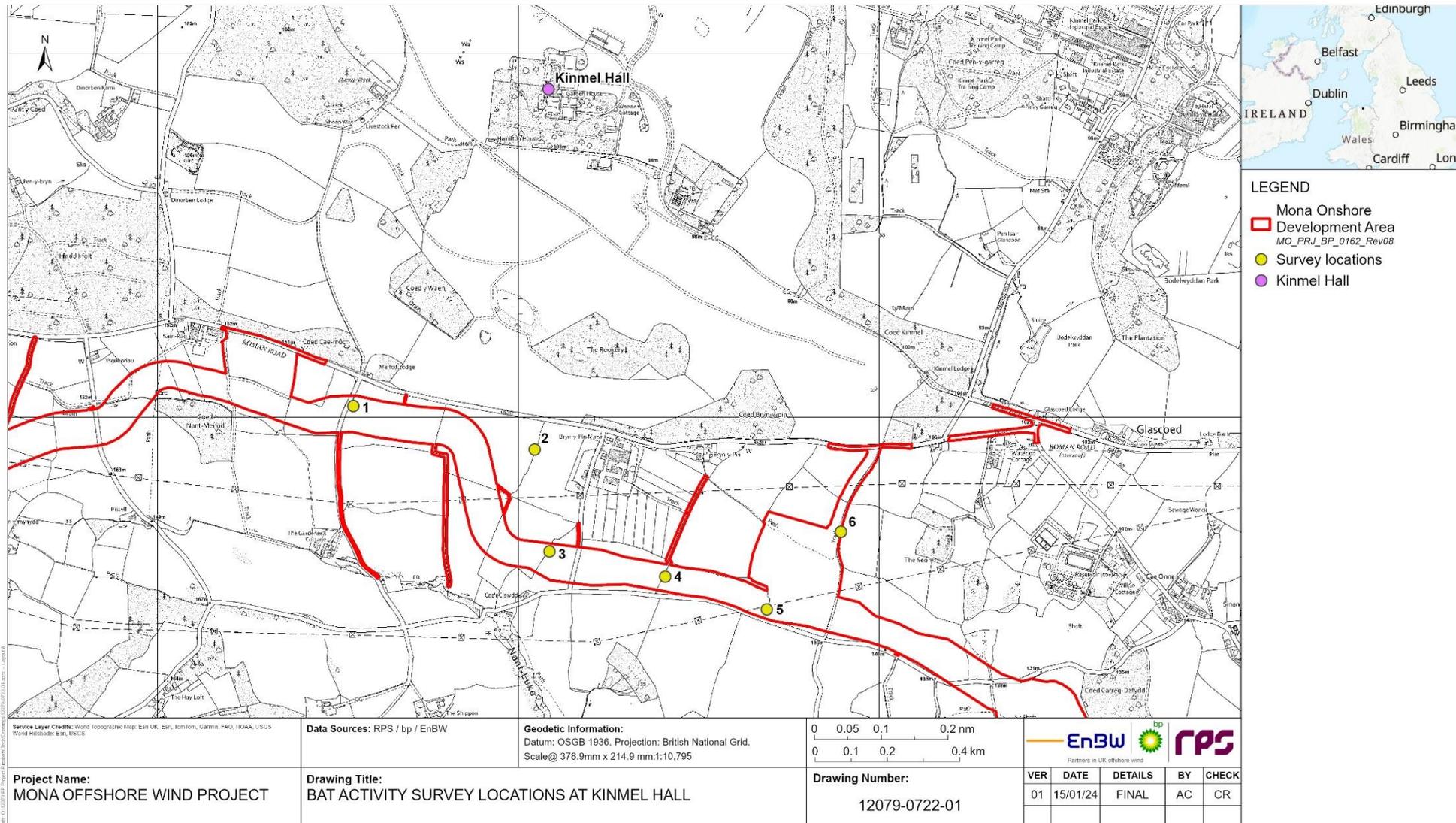


Figure 1.6: Bat activity survey locations at Kinmel Hall.

1.6.4 Limitations

Automated static bat detector surveys

- 1.6.4.1 Following commencement of bat surveys, the Mona Onshore Development Area was refined. The location of the automatic static bat detectors was therefore altered to ensure that they prioritised the habitat most suitable for bats and most likely to be affected. For example, suitable habitat for bats located near the Onshore Substation and TCCs.
- 1.6.4.2 Some automatic static bat detectors could not be deployed every month because access was not always granted.
- 1.6.4.3 A minimum of five nights of recording was not always possible during each survey session, and in some locations and months more than five nights of data was recorded. Surveys that did not last the minimum of five nights were due to changes in weather and recorders failing. The analysis of the results is based on an average number of identifications per night, which accounts for these variations.
- 1.6.4.4 The results of the surveys show the number of identifications for each species. It is important to note that the number of identifications does not equate to the number of individual bats, as several identifications can be generated by one bat flying past the automated bat detector several times. Instead, the number of identifications provides a measure of bat activity, which can be used to identify areas of habitat of higher or lower value for bats. Where appropriate, data has been presented as an average of bat identifications per night, for data to be comparable between surveying periods and static locations.

Kinmel Hall activity surveys

- 1.6.4.5 Survey locations varied slightly between months dependent on when access was granted, and the presence of livestock. However, the number of survey locations, the geographical extent of the survey locations and the number of months surveyed collectively provided data to confirm presence or likely absence and indicate likely behaviours.

1.7 Results

1.7.1 Desk study results

- 1.7.1.1 The desktop study confirmed that bat species are distributed across Wales. Common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bat *Plecotus auritus* are widespread throughout north and mid-Wales. Whiskered bat *Myotis mystacinus*, Brandt's bat *Myotis brandtii*, Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri* and noctule *Nyctalus noctula* are widespread in many areas but not as abundant (Reason and Wray, 2023). Lesser horseshoe bats *Rhinolophus hipposideros* are rarer or have a restricted distribution and greater horseshoe *Rhinolophus ferrumequinum*, barbastelle *Barbastella barbastellus*, serotine *Eptesicus serotinus*, Leisler's bat *Nyctalus leisleri* and Nathusius' pipistrelle *Pipistrellus nathusii* are very rare in north and mid-Wales (Reason and Wray, 2023).
- 1.7.1.2 One internationally designated site, where bats are a designated feature was identified 18.82 km from the Mona Onshore Development Area, Mmyngloddiau Fforest Gwydir/Gwydyr Forest Mines Special Area of Conservation (SAC). Mmyngloddiau Fforest Gwydir/Gwydyr Forest Mines SAC supports a lesser horseshoe bat colony, which is a qualifying feature of the SAC but not a primary reason for designation.

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1.7.1.3 One nationally designated site, where bats are a designated feature, was identified 0.82 km from the Mona Onshore Development Area, Coed y Gopa Site of Special Scientific Interest (SSSI). Coed y Gopa SSSI hosts natural caves and underground mine workings, which provide opportunities for roosting bats and includes a large hibernation roost for lesser horseshoe bats, with smaller numbers of Natterer's bat and Daubenton's bat.

1.7.1.4 There were 124 historical records of bats dated between 2010 and 2022 identified within 2 km of the Mona Onshore Development Area. The results included eight different species with 25 records not identified to species level. A summary of the desk study results is provided in Table 1.3. However, none of the historical records of bats were located within the Mona Onshore Development Area.

Table 1.3: Bat data records within 2 km of the Mona Onshore Development Area over the last ten years.

Taxon name	Common name	Date and number of records	Within the Mona Onshore Development Area
<i>Chiroptera sp.</i>	Bat (unknown species)	5 records from 2012 to 2018	Outside – with the closest confirmed roost located 1.58 km from the Mona Onshore Development Area
<i>Eptesicus serotinus</i>	Serotine	6 records from 2010 to 2012	Outside – with the closest confirmed roost (a known day and night roost) located 0.67 km from the Mona Onshore Development Area
<i>Myotis sp.</i>	Myotis species	11 records from 2010 to 2020	Outside – with the closest confirmed roost (a hibernation roost) located 0.07 km from the Mona Onshore Development Area
<i>Myotis mystacinus/brandtii</i>	Whiskered/Brandt's bat	3 records from 2012 to 2019	Outside – with the closest confirmed roost located 0.31 km from the Mona Onshore Development Area
<i>Myotis nattereri</i>	Natterer's bat	4 records from 2011 to 2015	Outside – with the closest confirmed roost (a hibernation roost) located 0.07 km from the Mona Onshore Development Area
<i>Nyctalus noctula</i>	Noctule	15 records from 2010 to 2020	Outside – with the closest confirmed roost located 0.90 km from the Mona Onshore Development Area
<i>Pipistrellus sp.</i>	Pipistrelle species	4 records from 2011 to 2020	Outside – with the closest confirmed roost located 0.26 km from the Mona Onshore Development Area
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	25 records from 2010 to 2021	Outside – with the closest confirmed roost located 0.18 km from the Mona Onshore Development Area

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Taxon name	Common name	Date and number of records	Within the Mona Onshore Development Area
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	18 records from 2010 to 2020	Outside – with the closest confirmed roost located 0.20 km from the Mona Onshore Development Area
<i>Plecotus sp.</i>	Long-eared bat species	1 record from 2011 to 2011	Outside – with no roosts included within the desktop study for this species group
<i>Plecotus auritus</i>	Brown long-eared bat	11 records from 2010 to 2020	Outside – with the closest confirmed roost (a hibernation roost) located 0.07 km from the Mona Onshore Development Area
<i>Rhinolophus ferrumequinum</i>	Greater horseshoe bat	4 records from 2010 to 2013	Outside – with the closest confirmed roost (a hibernation roost) located 0.07 km from the Mona Onshore Development Area
<i>Rhinolophus hipposideros</i>	Lesser horseshoe bat	17 records from 2010 to 2021	Outside – with the closest confirmed roost located 0.26 km from the Mona Onshore Development Area

1.7.2 Automated static bat detector surveys

Location 1

- 1.7.2.1 At least ten species of bat were recorded at location 1 between April and October 2023 including greater horseshoe bat, common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule bat, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species.
- 1.7.2.2 All species were recorded during each of the eight survey sessions, except greater horseshoe bats, which were recorded during four of the sessions, long-eared species and Nathusius' pipistrelle during seven of the sessions.
- 1.7.2.3 Common pipistrelle was the most frequently recorded species at location 1, with an average of 177.7 calls per night over the survey period. The next highest activity was from Leisler's bats, with an average of 21.8 calls per night over the survey period.
- 1.7.2.4 A total of five greater horseshoe bat calls were recorded during the surveys, one during April session 2, May session 1, and May session 2, and two during the June session 2.
- 1.7.2.5 Overall, bat activity was highest during the two May sessions when compared with the rest of the survey sessions.
- 1.7.2.6 All of the bat activity records at location 1 were located within the western part of the Mona Onshore Development Area.
- 1.7.2.7 A summary of the species recorded and the average bat identifications per night by species is provided in Table 1.4. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations used in Table 1.4 are detailed in the acronyms section and are as

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follows: GHS: greater horseshoe bat, CP: common pipistrelle, L: Leisler's bat, LHS: lesser horseshoe bat, NP: Nathusius' pipistrelle, N: noctule bat, S: serotine, SP: soprano pipistrelle, M: *Myotis sp.*, and LE: long-eared bat species. Summary maps and figures are provided in Figure 1.7 to Figure 1.21.

- 1.7.2.8 The results figures group the species into pipistrelle species (comprising common pipistrelle, soprano pipistrelle and Nathusius' pipistrelle), Myotis/long-eared bat species (comprising all Myotis species and long-eared bat species), big bats (including Leisler's bat, noctule and serotine) and horseshoe species (including lesser horseshoe bat and greater horseshoe bat). Totals of the bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.4: Average bat identifications per night at location 1 in 2023.

Survey dates	Survey Session	CP	GHS	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	531.8	0.0	27.2	9.8	0.2	3.0	0.2	9.6	0.4	0.0	582.2
	2	173.8	0.3	35.8	1.5	0.0	4.3	0.8	5.5	1.5	0.3	223.5
May 2023	1	523.0	0.2	127.8	29.2	0.6	3.8	162.2	14.8	2.4	1.0	865.0
	2	569.0	0.2	19.0	25.8	0.0	3.4	25.8	28.2	7.0	1.0	679.4
June 2023	1	260.0	0.0	69.2	20.4	2.8	2.4	36.4	16.6	0.8	1.0	409.6
	2	173.0	0.4	10.6	6.0	0.8	2.0	1.0	7.6	3.4	0.0	204.8
July 2023	1	23.8	0.0	0.6	3.6	0.4	2.0	0.2	1.0	3.0	0.0	34.6
	2	48.5	0.0	4.0	10.3	1.0	1.8	0.0	18.3	5.3	0.0	89.0
August 2023	1	35.6	0.0	1.6	8.2	0.0	0.8	1.0	1.2	1.4	1.0	50.8
	2	64.4	0.0	5.4	10.4	0.0	4.8	1.4	44.2	2.2	1.0	133.8
September 2023	1	84.0	0.0	4.0	7.2	0.2	40.4	0.2	53.2	1.4	0.2	190.8
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
October 2023	1	0.3	0.0	0.0	1.3	0.0	0.0	0.0	1.3	0.3	0.0	3.0

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Survey dates	Survey Session	CP	GHS	L	LHS	NP	N	S	SP	My	LE	Total
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Average number of identifications per night across all sessions		177.7	0.1	21.8	9.5	0.4	4.9	16.4	14.4	2.1	0.4	3466.8

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Location 2

- 1.7.2.9 At least nine species of bat were recorded at location 2 between June and September 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.10 Location 2 was not accessed during April session 1, April session 2, May session 1, May session 2, June session 2, October session 1, or October session 2 due to the presence of livestock or access restrictions.
- 1.7.2.11 Common pipistrelle was the most frequently recorded species at location 2, with an average of 76.7 identifications per night during the survey period. The highest number of identifications within any one session was also for common pipistrelle during August session 2 with an average of 283.4 identifications per night.
- 1.7.2.12 The second most frequently recorded species was soprano pipistrelle, with an average of 15.4 identifications per night during the survey period.
- 1.7.2.13 Bat activity was highest at location 2 during August session 2, with more than double the average calls per night when compared to the next highest level of bat activity in July session 2.
- 1.7.2.14 All the bat activity records at location 2 were located outside the Mona Onshore Development Area, but within the eastern part of the wider bat activity survey area.
- 1.7.2.15 A summary of the species recorded and average bat identifications per night by species recorded at location 2 is provided in Table 1.5. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.5 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.5: Average bat identifications per night at location 2 in 2023.

Survey dates	Survey Session	CP	L	LHS	NP	N	S	SP	My	LE	Total
June 2023	1	21.0	0.0	1.0	0.0	3.0	0.0	27.0	2.0	1.0	55.0
	2	41.8	2.0	0.0	0.0	1.2	0.0	14.6	0.0	0.0	59.6
July 2023	2	93.5	5.3	0.0	0.3	4.0	0.5	24.8	0.3	0.0	128.5
August 2023	1	65.4	18.6	0.0	0.0	17.8	0.2	10.8	1.2	0.0	114.0
	2	283.4	13.8	0.0	0.0	10.4	0.4	21.6	4.8	0.0	334.4
September 2023	1	13.4	1.6	0.6	0.0	0.8	0.0	1.0	0.2	0.0	17.6
	2	18.6	3.2	0.0	0.0	5.0	0.6	8.0	0.2	0.0	35.6
Average number of identifications per night across all sessions		76.7	6.4	0.2	0.0	6.0	0.2	15.4	1.2	0.1	

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Location 3

- 1.7.2.16 At least ten species of bat were recorded at location 3 between April and September 2023 including common pipistrelle, greater horseshoe bat, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.17 Location 3 was not accessed during October session 1, or October session 2 due to health and safety concerns or landowner permissions.
- 1.7.2.18 One greater horseshoe identification was recorded in September session 2.
- 1.7.2.19 Common pipistrelle was the most frequently recorded species at location 3, with an average of 1175.2 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for common pipistrelle, with an average of 2661.5 identifications per night in May session 2.
- 1.7.2.20 The species with the second highest average number of bat identifications over the surveys was soprano pipistrelle with an average of 476.3 bat identifications per night.
- 1.7.2.21 Overall, bat activity was highest at location 3 in May session 1, with an average of 2998.3 identifications per night and July session 2 with an average of 2740 identifications per night.
- 1.7.2.22 The bat activity records at location 3 were located outside the Mona Onshore Development Area, but within the eastern part of the wider bat activity survey area.
- 1.7.2.23 A summary of the species recorded and average bat identifications per night by species at location 3 is provided in Table 1.6. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.6 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.6: Average bat identifications per night at location 3 in 2023.

Survey dates	Survey Session	CP	GHS	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	268.5	0.0	4.0	0.0	0.0	1.0	0.0	10.0	0.5	0.0	284.0
	2	798.5	0.0	34.0	3.5	0.0	10.0	0.0	805.3	2.5	2.0	1,655.8
May 2023	1	2,661.5	0.0	89.0	1.3	1.8	14.3	7.0	169.5	46.8	7.3	2,998.3
	2	1,127.6	0.0	20.0	0.2	3.6	11.4	0.2	761.2	6.0	4.2	1,934.4
June 2023	1	367.8	0.0	28.0	3.3	6.0	17.8	3.3	579.3	8.8	0.8	1,014.8
	2	1,017.2	0.0	174.2	1.8	10.2	24.2	2.4	1,145.2	4.2	1.0	2,380.4
July 2023	1	1,786.6	0.0	38.4	1.6	4.6	17.8	0.8	273.2	12.4	0.8	2,136.2
	2	2,384.8	0.0	71.4	0.6	0.6	25.4	2.4	229.8	23.8	1.2	2,740.0
August 2023	1	1788.6	0.0	59.4	1.8	0.4	22.6	0.8	393.6	13.4	1.6	2282.2
	2	805.6	0.0	60.2	6.0	0.2	32.8	3.4	491.4	9.4	2.8	1411.8
September 2023	1	201.4	0.0	48.4	8.8	0.2	92.2	3.2	503.4	6.6	5.0	869.2
	2	894.2	0.2	98.4	6.2	0.0	24.4	0.6	353.2	6.2	1.4	1384.8
Average number of identifications per night across all sessions		1175.2	0.0	60.5	2.9	2.3	24.5	2.0	476.3	11.7	2.3	

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Location 4

- 1.7.2.24 At least nine species of bat were recorded at location 4 between April and September 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.25 Location 4 was not accessed during October session 1, or October session 2 2 due to the presence of livestock or access restrictions.
- 1.7.2.26 Common pipistrelle was the most frequently recorded species at location 4, with an average of 869.1 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for common pipistrelle, with an average of 1,873.2 identifications per night during July session 2.
- 1.7.2.27 The species with the second highest average number of bat identifications during the surveys was soprano pipistrelle with an average of 158.5 bat identifications per night.
- 1.7.2.28 Overall, bat activity was highest at location 4 during September session 2 with an average of 2,160.4 identifications per night and July session 2 with an average of 2,154.8 identifications per night.
- 1.7.2.29 The bat activity records at location 4 were located outside the Mona Onshore Development Area, within the eastern part of the bat activity survey area.
- 1.7.2.30 A summary of the species recorded, and average bat identifications per night by species at location 4 is provided in Table 1.7. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.7 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.7: Average bat identifications per night at location 4 in 2023.

Survey dates	Survey Session	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	68.8	0.0	0.0	0.0	1.2	0.0	12.0	1.0	0.0	83.0
	2	1325.8	3.0	1.6	0.0	20.6	0.2	372.2	22.6	0.0	1746.0
May 2023	1	229.0	9.2	0.8	0.0	5.6	3.8	45.2	1.2	0.2	295.0
	2	382.8	0.4	0.6	0.2	3.8	0.2	20.6	0.6	0.4	409.6
June 2023	1	606.6	4.4	2.0	0.6	14.6	0.0	27.0	1.6	0.0	656.8
	2	246.2	3.2	1.0	0.2	7.2	0.2	58.6	0.4	0.0	317.0
July 2023	1	1153.0	14.4	0.4	0.0	1.2	0.2	120.4	3.0	0.2	1292.8
	2	1873.2	64.0	0.8	1.8	11.2	2.6	193.4	6.2	1.6	2154.8
August 2023	1	1470.0	139.4	1.0	0.4	41.6	3.0	131.6	3.6	1.0	1791.6
	2	1424.6	56.6	3.6	0.2	14.2	1.0	173.8	6.6	2.2	1682.8
September 2023	1	104.0	22.0	4.7	0.0	16.7	1.0	263.0	3.3	2.7	417.3
	2	1544.8	96.2	1.6	0.0	23.8	0.6	484.0	6.6	2.8	2160.4
Average number of identifications per night across all sessions		869.1	34.4	1.5	0.3	13.5	1.1	158.5	4.7	0.9	

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Location 5

- 1.7.2.31 At least nine species of bat were recorded at location 5 between April and October 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.32 Location 5 was not accessed during May session 1, or May session 2 due to the presence of livestock or access restrictions.
- 1.7.2.33 Soprano pipistrelle was the most frequently recorded species at location 5, with an average of 115.7 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for soprano pipistrelle, with an average of 240.4 identifications per night in September session 2.
- 1.7.2.34 The species with the second highest average number of bat identifications during the surveys was common pipistrelle with an average of 77.8 bat identifications per night.
- 1.7.2.35 Overall, bat activity was highest at location 5 during September session 2 with an average of 694.0 identifications per night and June session 1 with an average of 390.8 identifications per night.
- 1.7.2.36 The bat activity records at location 5 were all located within the Onshore Substation Footprint.
- 1.7.2.37 A summary of the species recorded and average bat identifications per night by species at location 5 is provided in Table 1.8. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.8 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.8: Average bat identifications per night at location 5 in 2023.

Survey dates	Survey session	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	9.2	0.2	1.0	0.0	0.8	0.0	4.6	0.2	0.0	16.0
	2	207.7	3.0	6.7	0.0	17.0	0.0	98.0	0.0	0.0	332.3
June 2023	1	175.2	25.8	0.2	0.2	19.2	1.0	152.8	14.8	1.6	390.8
	2	26.8	5.0	6.8	0.2	23.4	0.6	44.0	1.8	0.6	109.2
July 2023	1	91.4	4.6	8.8	0.2	63.4	0.0	144.0	2.4	0.6	315.4
	2	61.2	10.8	2.2	0.0	17.0	0.8	30.0	0.4	0.8	123.2
August 2023	1	106.6	16.2	2.8	0.0	7.0	0.6	150.2	6.0	0.2	289.6
	2	52.6	10.2	12.2	0.0	9.6	0.2	101.6	9.0	1.8	197.2
September 2023	1	30.2	5.8	19.6	0.4	22.8	0.0	87.8	25.0	0.8	192.4
	2	144.6	24.0	111.2	0.0	14.6	0.4	240.4	157.0	1.8	694.0
October 2023	1	14.2	3.2	85.8	0.0	5.0	0.0	151.8	30.2	0.4	290.6
	2	14.2	0.6	40.6	0.0	0.8	0.0	182.6	1.8	1.2	241.8
Average number of identifications per night across all sessions		77.8	9.1	24.8	0.1	16.7	0.3	115.7	20.7	0.8	

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Location 6

- 1.7.2.38 At least nine species of bat were recorded at location 6 between April and October 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.39 Location 6 was not accessed during May session 1, or May session 2 due to health and safety concerns or landowner permissions. A technical fault interrupted recording during September session 2.
- 1.7.2.40 Soprano pipistrelle was the most frequently recorded species at location 6, with an average of 115.3 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for soprano pipistrelle, with an average of 733.6 identifications per night in May session 2.
- 1.7.2.41 The species with the second highest average number of bat identifications during the surveys was common pipistrelle with an average of 16.2 bat identifications per night.
- 1.7.2.42 Overall, bat activity was highest at location 6 during May session 2 with an average of 901.8 identifications per night and April session 2 with an average of 525.8 identifications per night.
- 1.7.2.43 All the bat activity records at location 6 were located within Onshore Substation Footprint.
- 1.7.2.44 A summary of the species recorded and average bat identifications per night by species at location 6 is provided in Table 1.9. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.9 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.9: Average bat identifications per night at location 6 in 2023.

Survey dates	Survey session	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	2	130.2	27.0	17.0	0.0	57.0	0.0	269.4	22.0	3.2	525.8
	2	32.2	15.6	7.0	0.2	102.2	0.0	733.6	3.4	7.6	901.8
June 2023	1	4.3	12.0	3.5	0.0	12.8	0.5	178.8	1.3	1.5	214.5
	2	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.7
July 2023	1	9.0	0.3	0.3	0.0	0.0	0.0	4.0	0.0	0.0	13.7
	2	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0
August 2023	1	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	5.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	3.0
September 2023	1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	2.0
October 2023	1	2.0	0.0	0.0	0.0	0.0	0.0	36.6	0.0	0.0	39.6
	2	1.0	0.0	0.0	0.0	0.0	0.0	35.6	0.0	0.0	38.6
Average number of identifications per night across all sessions		16.2	5.0	2.5	0.0	15.6	0.0	115.3	2.4	1.1	

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Location 7

- 1.7.2.45 At least nine species of bat were recorded at location 7 between April and October 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.46 Location 7 was not accessed during May session 1 due to the presence of livestock or access restrictions.
- 1.7.2.47 Soprano pipistrelle was the most frequently recorded species at location 7, with an average of 532.1 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for soprano pipistrelle, with an average of 2731.7 identifications per night during September session 2.
- 1.7.2.48 The species with the second highest average number of bat identifications during the surveys was common pipistrelle with an average of 267.79 bat identifications per night.
- 1.7.2.49 Overall, bat activity was highest at location 7 during September session 2 with an average of 3993.3 identifications per night and September session 1 with an average of 2249.2 identifications per night.
- 1.7.2.50 All the bat activity records at location 7 were located within the eastern part of the Mona Onshore Development Area.
- 1.7.2.51 A summary of the species recorded and average bat identifications per night by species at location 7 is provided in Table 1.10. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.10 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.10: Average bat identifications per night at location 7 in 2023.

Survey dates	Survey session	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	12.5	1.5	27.5	0.0	0.5	0.0	142.8	9.3	0.5	194.5
	2	34.5	0.8	33.0	0.0	0.3	0.0	167.0	11.8	0.0	247.3
May 2023	2	390.9	2.2	16.3	0.0	3.6	0.2	488.2	70.1	0.9	972.4
June 2023	1	201.6	8.0	14.8	0.0	9.2	0.4	611.4	25.4	1.4	872.2
	2	42.6	12.4	5.6	0.2	18.4	1.0	362.2	18.0	0.0	460.4
July 2023	1	232.2	15.4	14.8	0.2	86.6	0.6	87.2	21.6	0.6	459.2
	2	99.2	18.8	21.6	0.0	64.2	1.6	72.6	11.8	1.8	291.6
August 2023	1	220.0	17.8	29.0	0.2	28.8	0.8	57.0	14.6	3.2	371.4
	2	286.0	43.8	47.0	0.0	49.8	1.2	1103.6	52.6	2.6	1586.6

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Survey dates	Survey session	CP	L	LHS	NP	N	S	SP	My	LE	Total
September 2023	1	1151.4	125.0	16.4	0.0	44.2	1.4	669.0	238.8	3.0	2249.2
	2	701.0	299.3	35.3	0.3	141.3	1.0	2731.7	83.3	0.0	3993.3
October 2023	1	38.4	5.8	22.4	0.0	8.2	0.0	95.2	2.4	1.8	174.2
	2	70.2	5.2	25.4	0.0	3.6	0.2	329.8	1.6	1.4	437.4
Average number of identifications per night across all sessions		267.7	42.8	23.8	0.1	35.3	0.6	532.1	43.2	1.3	

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Location 8

- 1.7.2.52 At least nine species of bat were recorded at location 8 between April and July 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.53 Location 8 was not accessed during April session 2 or May session 2 due to the presence of livestock or access restrictions. Surveys were not undertaken at location 8 from July onwards following an updated version of the Mona Onshore Development Area. Resources were reallocated to ensure the most relevant data was collected, for example where impacts were most likely. Locations 8, 9 and 10 were located outside the Mona Onshore Development Area from July and were therefore reallocated and increased to include locations 11, 12, 13 and 14.
- 1.7.2.54 Soprano pipistrelle was the most frequently recorded species at location 8, with an average of 235.4 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for soprano pipistrelle, with an average of 365.4 identifications per night during May session 2.
- 1.7.2.55 The species with the second highest average number of bat identifications during the surveys was common pipistrelle with an average of 172.1 bat identifications per night.
- 1.7.2.56 Overall, bat activity was highest at location 8 during June session 2 with an average of 708.2 identifications per night and May session 2 with an average of 556.8 identifications per night.
- 1.7.2.57 All the bat activity records at location 8 were located outside the Mona Onshore Development Area, but within the eastern part of the wider bat activity survey area.
- 1.7.2.58 A summary of the species recorded and average bat identifications per night by species at location 8 is provided in Table 1.11. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.11 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.11: Average bat identifications per night at location 8 in 2023.

Survey dates	Survey session	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	132.4	0.2	3.6	0.0	2.2	0.0	22.6	0.4	0.0	161.4
May 2023	2	113.8	5.0	14.0	0.0	4.2	0.2	365.4	46.6	7.6	556.8
June 2023	1	134.2	8.8	5.0	0.8	13.4	0.0	238.2	21.8	0.4	422.6
	2	308.0	10.0	19.4	6.4	13.2	0.4	315.2	34.4	1.2	708.2
Average number of identifications per night across all sessions		172.1	6.0	10.5	1.8	8.3	0.2	235.4	25.8	2.3	

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Location 9

- 1.7.2.59 At least nine species of bat were recorded at location 9 between April and July 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.60 Location 9 was not accessed during May session 1 due to the presence of livestock or access restrictions. Surveys were not undertaken at location 9 from July onwards following an updated version of the Mona Onshore Development Area. Resources were reallocated to ensure the most relevant data was collected, for example where impacts were most likely. Locations 8, 9 and 10 were located outside the Mona Onshore Development Area from July and were therefore reallocated and increased to include locations 11, 12, 13 and 14.
- 1.7.2.61 Soprano pipistrelle was the most frequently recorded species at location 9, with an average of 76.7 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for soprano pipistrelle, with an average of 180.4 identifications per night during April session 2.
- 1.7.2.62 The species with the second highest average number of bat identifications during the surveys was common pipistrelle with an average of 70.7 bat identifications per night.
- 1.7.2.63 Overall, bat activity was highest at location 9 during April session 2 with an average of 296.7 identifications per night and May session 2 with an average of 196.3 identifications per night.
- 1.7.2.64 All the bat activity records at location 9 were located outside the Mona Onshore Development Area, but within the eastern part of the wider bat activity survey area.
- 1.7.2.65 A summary of the species recorded and average bat identifications per night by species at location 9 is provided in Table 1.12. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.12 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.12: Average bat identifications per night at location 9 in 2023.

Survey dates	Survey session	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	13.6	0.2	3.2	0.0	1.4	0.0	3.4	0.2	0.0	22.0
	2	105.0	1.8	3.8	0.0	4.4	0.0	180.4	0.6	0.6	296.6
May 2023	2	93.8	1.1	6.4	0.0	0.9	0.0	69.3	24.0	0.8	196.3
June 2023	1	84.2	1.6	5.4	0.4	7.0	0.0	64.2	15.2	0.4	178.4
	2	38.4	2.0	4.6	0.2	12.8	0.2	72.2	8.4	0.2	139.0
Average number of identifications per night across all sessions		70.7	1.3	4.9	0.1	4.7	0.0	76.7	11.7	0.4	

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Location 10

- 1.7.2.66 At least nine species of bat were recorded at location 10 between April and July 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.67 Location 10 was not accessed during May session 1 due to the presence of livestock or access restrictions. Surveys were not undertaken at location 10 from July onwards following an updated version of the Mona Onshore Development Area. Resources were reallocated to ensure the most relevant data was collected, for example where impacts were most likely. Locations 8, 9 and 10 were located outside the Mona Onshore Development Area from July and were therefore reallocated and increased to include locations 11, 12, 13 and 14.
- 1.7.2.68 Common pipistrelle was the most frequently recorded species at location 10, with an average of 470.0 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for common pipistrelle, with an average of 849.2 identifications per night during May session 2.
- 1.7.2.69 The species with the second highest average number of bat identifications during the surveys was soprano pipistrelle with an average of 268.8 bat identifications per night.
- 1.7.2.70 Overall, bat activity was highest at location 10 during April session 2 with an average of 1,483.6 identifications per night and May session 2 with an average of 1,198.8 identifications per night.
- 1.7.2.71 All the bat activity records at location 10 were located outside the Mona Onshore Development Area, but within the eastern part of the bat activity survey area.
- 1.7.2.72 A summary of the species recorded and average bat identifications per night by species at location 10 is provided in Table 1.13. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.13 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.13: Average bat identifications per night at location 10 in 2023.

Survey dates	Survey session	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	726.2	3.6	3.0	0.0	1.0	0.0	322.2	2.8	0.0	1058.8
	2	761.2	8.0	4.6	0.0	5.4	0.0	690.0	14.4	0.0	1483.6
May 2023	2	849.2	14.8	1.6	1.2	9.2	0.0	297.8	9.2	15.8	1198.8
June 2023	1	8.0	2.4	3.2	0.0	10.8	0.0	15.2	7.6	0.6	47.8
	2	5.6	2.2	3.4	0.0	9.4	0.2	19.0	7.2	0.0	47.0
Average number of identifications per night across all sessions		470.0	6.2	3.2	0.2	7.2	0.0	268.8	8.2	3.3	

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Location 11

- 1.7.2.73 At least eight species of bat were recorded at location 11 between July and October 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.74 Surveys were only undertaken at location 11 from July onwards following an updated version of the Mona Onshore Development Area. Resources were reallocated to ensure the most relevant data was collected, for example where impacts were most likely. Locations 8, 9 and 10 were located outside the Mona Onshore Development Area from July and were therefore reallocated and increased to include locations 11, 12, 13 and 14.
- 1.7.2.75 Soprano pipistrelle was the most frequently recorded species at location 11, with an average of 27.9 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for soprano pipistrelle, with an average of 81.6 identifications per night during August session 2.
- 1.7.2.76 The species with the second highest average number of bat identifications during the surveys was common pipistrelle with an average of 8.2 bat identifications per night.
- 1.7.2.77 Overall, bat activity was highest at location 11 during August session 2 with a total average of 128.6 identifications per night.
- 1.7.2.78 All the bat activity records at location 11 were located within the central part of the Mona Onshore Development Area.
- 1.7.2.79 A summary of the species recorded and average bat identifications per night by species at location 11 is provided in Table 1.14. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.14 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.14: Average bat identifications per night at location 11 in 2023.

Survey dates	Survey session	CP	L	LHS	N	S	SP	My	LE	Total
July 2023	1	11.2	3.8	3.0	3.8	0.2	14.0	2.2	0.0	38.2
	2	24.2	1.8	0.6	4.0	0.2	35.0	9.4	0.4	75.6
August 2023	1	6.2	5.0	2.2	3.0	0.8	39.8	6.4	0.4	63.8
	2	9.0	10.2	7.8	14.2	0.8	81.6	3.0	2.0	128.6
September 2023	1	7.8	6.0	7.0	17.6	0.4	19.4	4.2	0.6	63.0
	2	3.4	2.8	8.0	4.2	0.4	18.2	1.4	0.8	39.2
October 2023	1	1.4	4.2	6.6	7.0	0.2	7.0	1.2	0.4	28.0
	2	2.0	0.8	4.6	2.8	0.0	8.2	0.4	1.0	19.8
Average number of identifications per night across all sessions		8.2	4.3	5.0	7.1	0.4	27.9	3.5	0.7	

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Location 12

- 1.7.2.80 At least eight species of bat were recorded at location 12 between July and September 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, Nathusius' pipistrelle, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.81 Surveys were only undertaken at location 12 from July onwards following an updated version of the Mona Onshore Development Area. Resources were reallocated to ensure the most relevant data was collected, for example where impacts were most likely. Locations 8, 9 and 10 were located outside the Mona Onshore Development Area from July and were therefore reallocated and increased to include locations 11, 12, 13 and 14. A technical fault interrupted recording during October session 1 and October session 2.
- 1.7.2.82 Common pipistrelle was the most frequently recorded species at location 12, with an average of 786.3 identifications per night over the survey period. The highest average number of identifications per night for any one session was soprano pipistrelle, with an average of 2,168.7 identifications per night during September session 2.
- 1.7.2.83 The species with the second highest average number of bat identifications during the surveys was soprano pipistrelle with an average of 405.3 bat identifications per night.
- 1.7.2.84 Overall, bat activity was highest at location 12 during September session 2 with a total average of 3,802.0 identifications per night.
- 1.7.2.85 All the bat activity records at location 12 were located within the Onshore Substation Footprint.
- 1.7.2.86 A summary of the species recorded and average bat identifications per night by species at location 12 is provided in Table 1.15. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.15 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report.

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Table 1.15: Average bat identifications per night at location 12 in 2023.

Survey date	Survey session	CP	L	LHS	NP	N	S	SP	My	LE	Total
July 2023	1	724.0	28.4	2.8	0.0	0.2	88.2	0.8	24.6	3.8	872.8
	2	356.0	27.6	14.6	0.0	0.0	79.8	0.8	11.2	5.6	495.6
August 2023	1	376.6	50.4	15.4	0.0	42.8	0.8	22.0	7.6	1.6	517.2
	2	1351.4	78.0	9.8	0.2	62.2	2.6	66.6	101.8	2.8	1675.4
September 2023	1	661.6	53.6	73.2	0.0	67.0	2.0	173.2	88.4	1.6	1120.6
	2	1248.3	186.3	15.3	0.0	79.0	2.3	2168.7	101.3	0.7	3802.0
Average number of identifications per night across all sessions		786.3	70.7	21.9	0.0	41.9	29.3	405.3	55.8	2.7	

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Location 13

- 1.7.2.87 At least eight species of bat were recorded at location 13 between July and October 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.88 Surveys were only undertaken at location 13 from July onwards following an updated version of the Mona Onshore Development Area. Resources were reallocated to ensure the most relevant data was collected, for example where impacts were most likely. Locations 8, 9 and 10 were located outside the Mona Onshore Development Area from July and were therefore reallocated and increased to include locations 11, 12, 13 and 14.
- 1.7.2.89 Soprano pipistrelle was the most frequently recorded species at location 13, with an average of 156.0 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for this species group, with an average of 425.8 identifications per night during September session 2.
- 1.7.2.90 The species with the second highest average number of bat identifications during the surveys was *Myotis sp.* With an average of 34.8 bat identifications per night.
- 1.7.2.91 Overall, bat activity was highest at location 13 during September session 2 with an average of 726.2 identifications per night.
- 1.7.2.92 All of the bat activity records at location 13 were located within the eastern part of the Mona Onshore Development Area.
- 1.7.2.93 A summary of the species recorded and average bat identifications per night by species at location 13 is provided in Table 1.16. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.16 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.16: Average bat identifications per night at location 13 in 2023.

Survey date	Survey session	CP	L	LHS	N	S	SP	My	LE	Total
July 2023	1	10.2	14.2	8.6	0.0	18.4	0.2	63.0	8.0	122.6
	2	6.4	35.2	13.2	0.0	26.6	0.4	46.2	11.2	139.2
August 2023	1	14.2	23.4	14.2	23.0	0.4	52.8	5.4	0.4	133.8
	2	23.4	30.2	10.0	16.0	0.4	191.4	10.8	1.8	284.0
September 2023	1	23.3	16.3	10.8	19.8	0.0	109.8	16.8	1.8	198.3
	2	47.0	71.6	26.2	40.6	0.4	425.8	113.6	1.0	726.2
October 2023	1	10.2	9.8	26.6	4.8	0.4	363.6	17.2	0.8	433.4
	2	4.0	1.8	16.6	2.8	0.0	103.8	5.6	0.2	134.8
Average number of identifications per night across all sessions		17.3	25.3	15.8	13.4	5.8	156.0	34.8	3.1	

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Location 14

- 1.7.2.94 At least eight species of bat were recorded at location 14 between July and October 2023 including common pipistrelle, Leisler's bat, lesser horseshoe bat, noctule, serotine, soprano pipistrelle, *Myotis sp.*, and long-eared bat species *Plecotus sp.*
- 1.7.2.95 Surveys were only undertaken at location 14 from July onwards following an updated version of the Mona Onshore Development Area. Resources were reallocated to ensure the most relevant data was collected, for example where impacts were most likely. Locations 8, 9 and 10 were located outside the Mona Onshore Development Area from July and were therefore reallocated and increased to include locations 11, 12, 13 and 14.
- 1.7.2.96 Common pipistrelle was the most frequently recorded species at location 14, with an average of 1,139.1 identifications per night over the survey period. The highest average number of identifications per night for any one session was also for common pipistrelle, with an average of 2,748.0 identifications per night during September session 1.
- 1.7.2.97 The species with the second highest average number of bat identifications during the surveys was soprano pipistrelle with an average of 946.9 bat identifications per night.
- 1.7.2.98 Overall, bat activity was highest at location 14 during September session 1 with a total average of 4,967.0 identifications per night.
- 1.7.2.99 All the bat activity records at location 14 were located within the central part of the Mona Onshore Development Area.
- 1.7.2.100 A summary of the species recorded and average bat identifications per night by species at location 14 is provided in Table 1.17. Values have been rounded to the nearest decimal place, meaning entries may show as 0.00 despite identifications being recorded. The abbreviations shown in Table 1.17 are detailed within paragraph 1.7.2.7 and the acronyms section. Summary maps and figures are provided in Figure 1.7 to Figure 1.21. Totals of bat identifications per recording period, per species are provided in Appendix A of this technical report below.

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Table 1.17: Average bat identifications per night at location 14 in 2023.

Survey dates	Survey session	CP	L	LHS	NP	N	S	SP	My	Total
July 2023	1	1,614.6	8.8	0.6	0.0	0.0	60.0	0.8	282.6	1,967.4
	2	1,625.8	22.4	0.4	0.0	0.2	110.0	0.2	261.2	2,020.2
August 2023	1	1264.8	7.0	1.2	0.0	10.4	0.2	697.4	9.4	1990.4
	2	1364.3	14.3	3.7	0.0	10.0	0.0	1860.0	10.0	3262.3
September 2023	1	2748.0	24.0	3.5	0.0	13.5	0.0	2168.0	10.0	4967.0
	2	367.0	16.8	1.0	0.0	4.8	0.0	2213.3	2.8	2605.5
October 2023	1	58.0	2.2	2.8	0.0	0.0	0.2	567.0	1.0	631.2
	2	70.0	0.3	1.3	0.0	0.0	0.0	68.7	3.3	143.7
Average number of identifications per night across all sessions		1139.1	12.0	1.8	0.0	4.9	21.3	946.9	72.5	

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Results across survey locations

- 1.7.2.101 The automated static detector surveys recorded ten different species of bat within the bat survey area, including common pipistrelle, Leisler's bat, lesser horseshoe bat, noctule, serotine, soprano pipistrelle, *Myotis sp.* and long-eared bat species *Plecotus sp.*, *Nathusius'* pipistrelle and greater horseshoe bat.
- 1.7.2.102 At least eight species of bat were recorded at every survey location, including common pipistrelle, Leisler's bat, lesser horseshoe bat, noctule, serotine, soprano pipistrelle, *Myotis sp.* and long-eared bat species *Plecotus sp.*, as shown in Figure 1.7 to Figure 1.10.
- 1.7.2.103 *Nathusius'* pipistrelle was also recorded at survey locations 1 to 10, and 12.
- 1.7.2.104 Six greater horseshoe identifications were recorded across all locations during the surveys. Five of the greater horseshoe identifications were all recorded at location 1 between April to June 2023 as shown in Figure 1.15. The automated static bat detector at location 1 was located on a hedgerow within the Mona Onshore Development Area, approximately 170 m from the ancient woodland at Gwrych Wood Castle Site of Special Scientific Interest. One greater horseshoe identification was recorded at location 3 in September session 2 as shown in Figure 1.15. Location 3 was associated with a hedgerow with mature oak *Quercus robur* and ash *Fraxinus excelsior*, just outside the Mona Onshore Development Area.
- 1.7.2.105 Lesser horseshoe bats were recorded at all locations, with the highest average number of bat identifications recorded at location 5, which comprised an average of 24.8 identifications per night across all months. The total number of lesser horseshoe bat calls across all sessions is shown in Figure 1.11 to Figure 1.15. Location 5 was associated with a hedgerow within the Onshore Substation Footprint. The activity levels for lesser horseshoe bats peaked in autumn during September session 2 and October session 1, as shown in Figure 1.20.
- 1.7.2.106 Common pipistrelle had the highest number of bat identifications per night across the surveys at half of the locations (locations 1, 2, 3, 4, 10, 12 and 14), with soprano pipistrelles having the highest average number of identifications per night across the surveys at the other half of the locations (locations 5, 6, 7, 8, 9, 11 and 13).
- 1.7.2.107 Location 14 recorded the highest average number of bats per night across all sessions and species, with an average of 2,198.5 identifications per night, as shown in Figure 1.17. The location that recorded the highest average number of bat identifications per night within any one session across all species was location 12, during September session 2 where an average of 3,802.0 bat identifications per night was recorded. Location 12 was associated with a hedgerow within the Onshore Substation Footprint.
- 1.7.2.108 Location 11 recorded the lowest average number of bat identifications per night across all sessions and species, with an average of 57.1 identifications per night, as shown in Figure 1.17. Location 11 was associated with a hedgerow with trees that lies within the Mona Onshore Development Area.
- 1.7.2.109 Location 1 recorded the lowest average number of bat identifications per night within any one session across all species. An average of 0.1 bat identification was recorded at location 1 during October session 1. The automated static bat detector at location 1 was located on a hedgerow within the Mona Onshore Development Area, approximately 170 m from the ancient woodland at Gwrych Wood Castle Site of Special Scientific Interest.
- 1.7.2.110 The session with the highest bat activity was in September session 2 with an average of 1544.1 identifications per night across all locations as shown in Figure 1.21. The

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session with the lowest bat activity was in October session 1 with an average of 145.2 identifications per night across all locations as shown in Figure 1.21.

- 1.7.2.111 A summary of the average bat identifications per night by species recorded at each static location over the survey period is provided in Table 1.18. Data are presented as the total numbers of bat identifications during the entire survey period divided by the total number of nights over which the identifications were recorded to show an average number of bat identifications per night.

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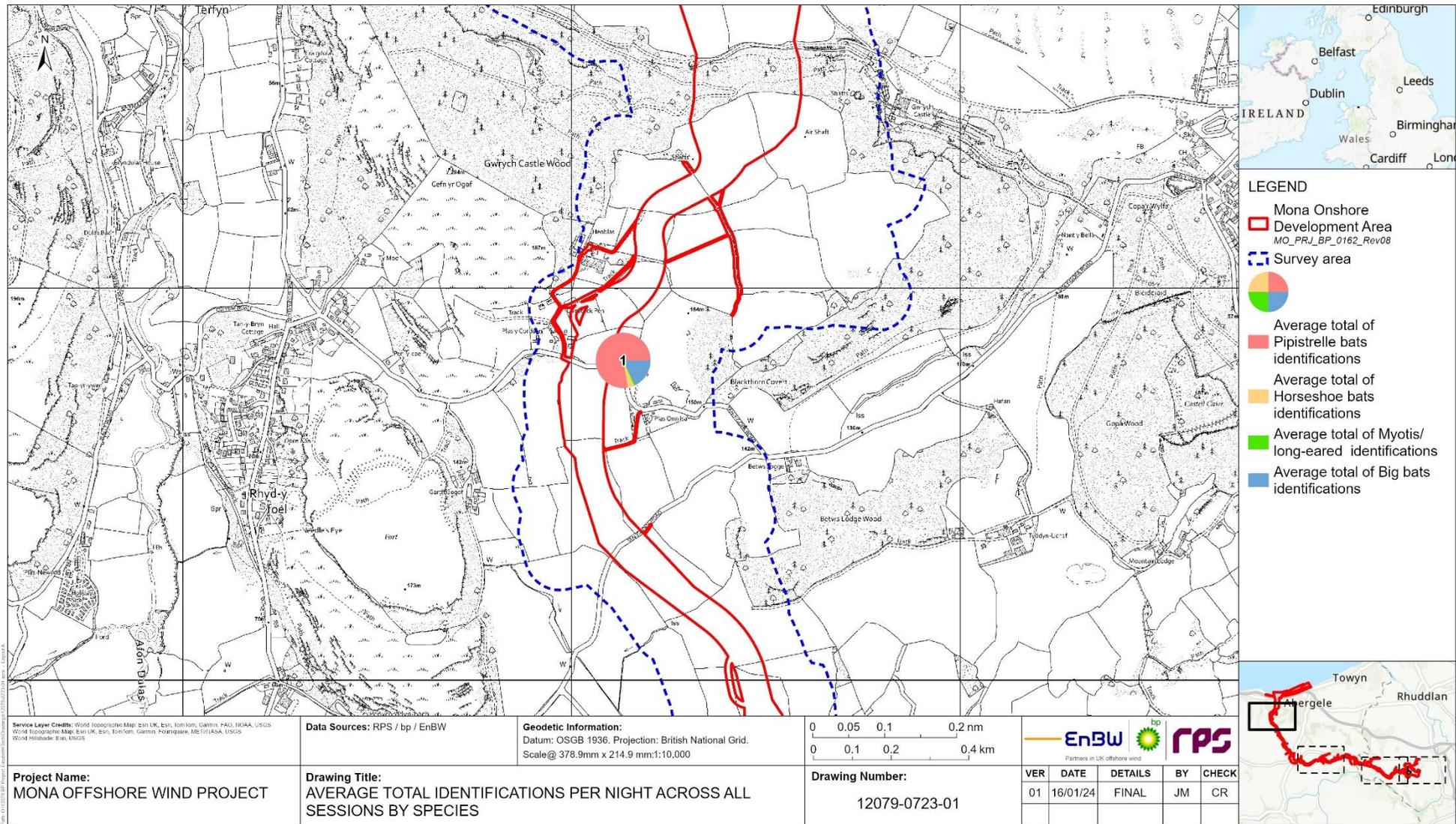


Figure 1.7: Average total identifications per night across all sessions by species.

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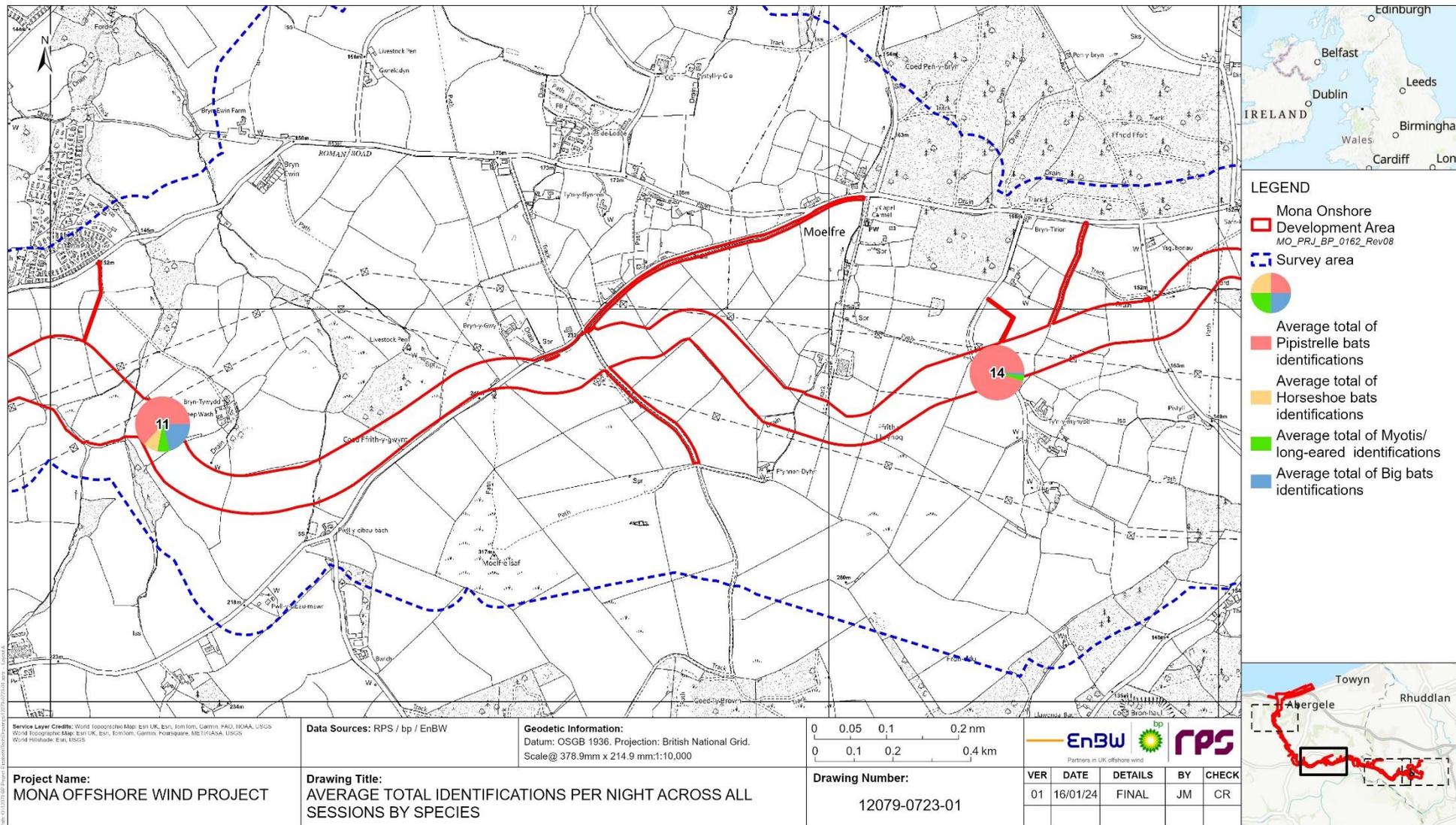


Figure 1.8: Average total identifications per night across all sessions by species.

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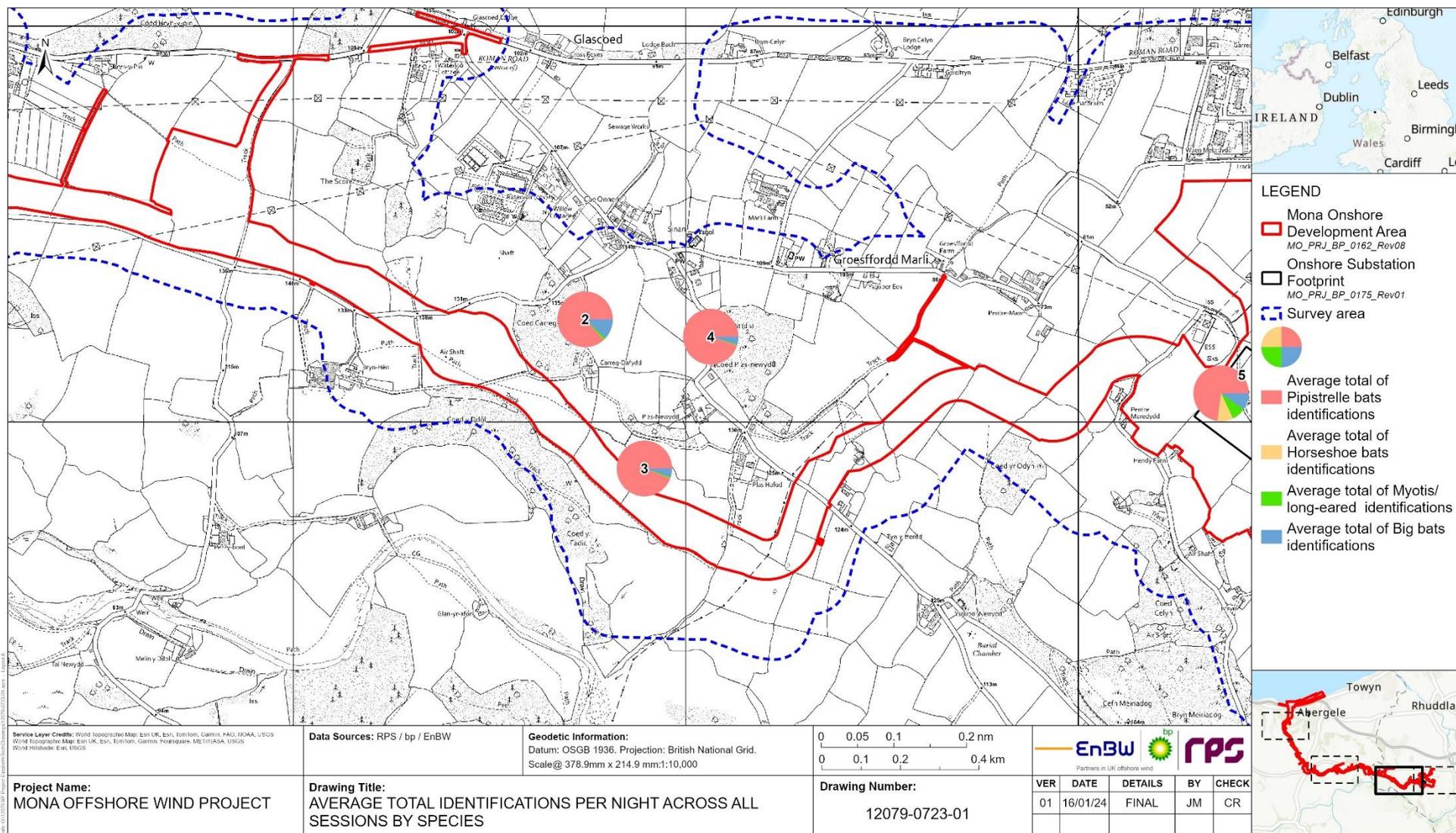


Figure 1.9: Average total identifications per night across all sessions by species.

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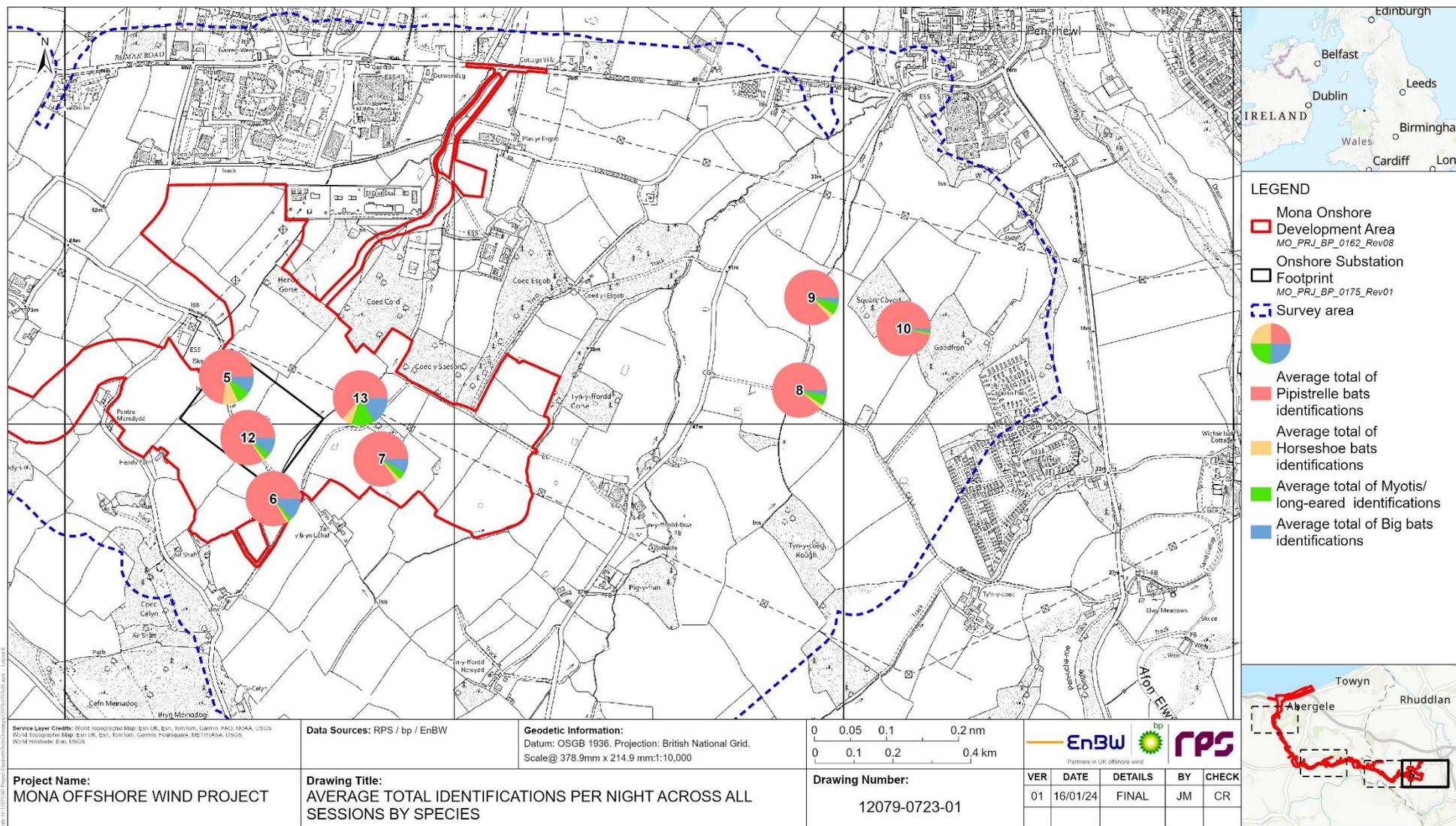


Figure 1.10: Average total identifications per night across all sessions by species.

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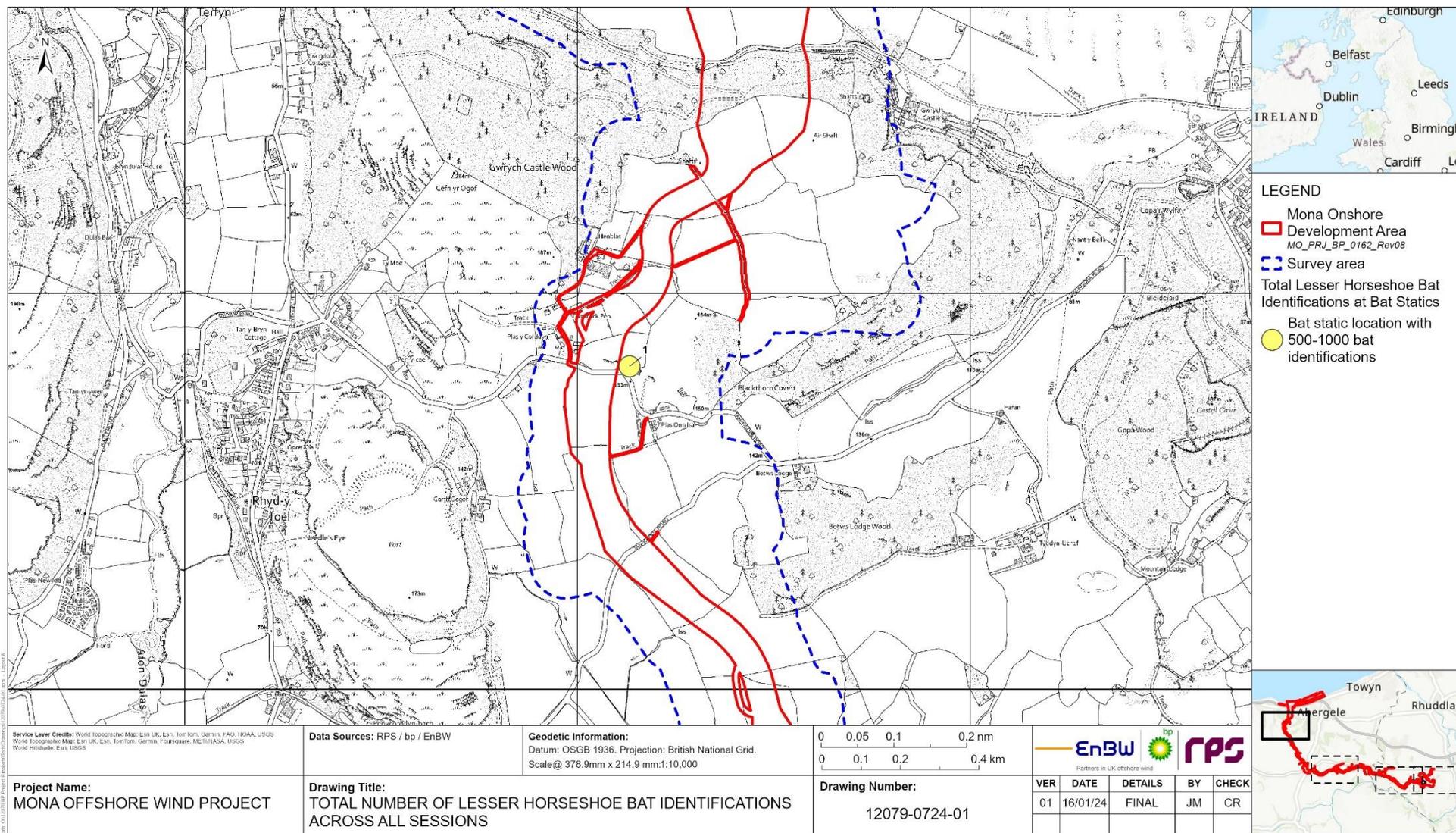


Figure 1.11: Total number of lesser horseshoe bat identifications across all sessions.

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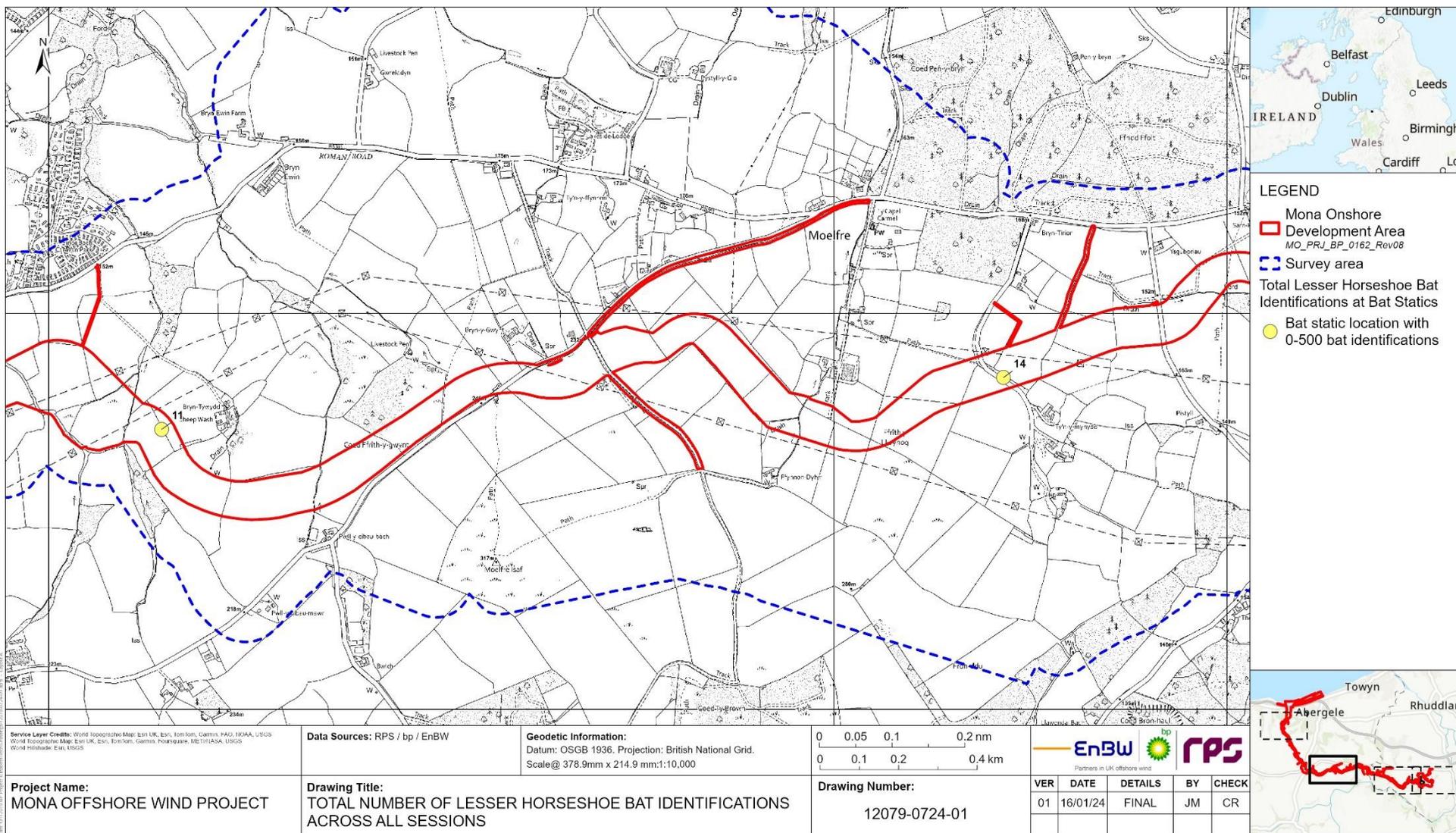


Figure 1.12: Total number of lesser horseshoe bat identifications across all sessions.

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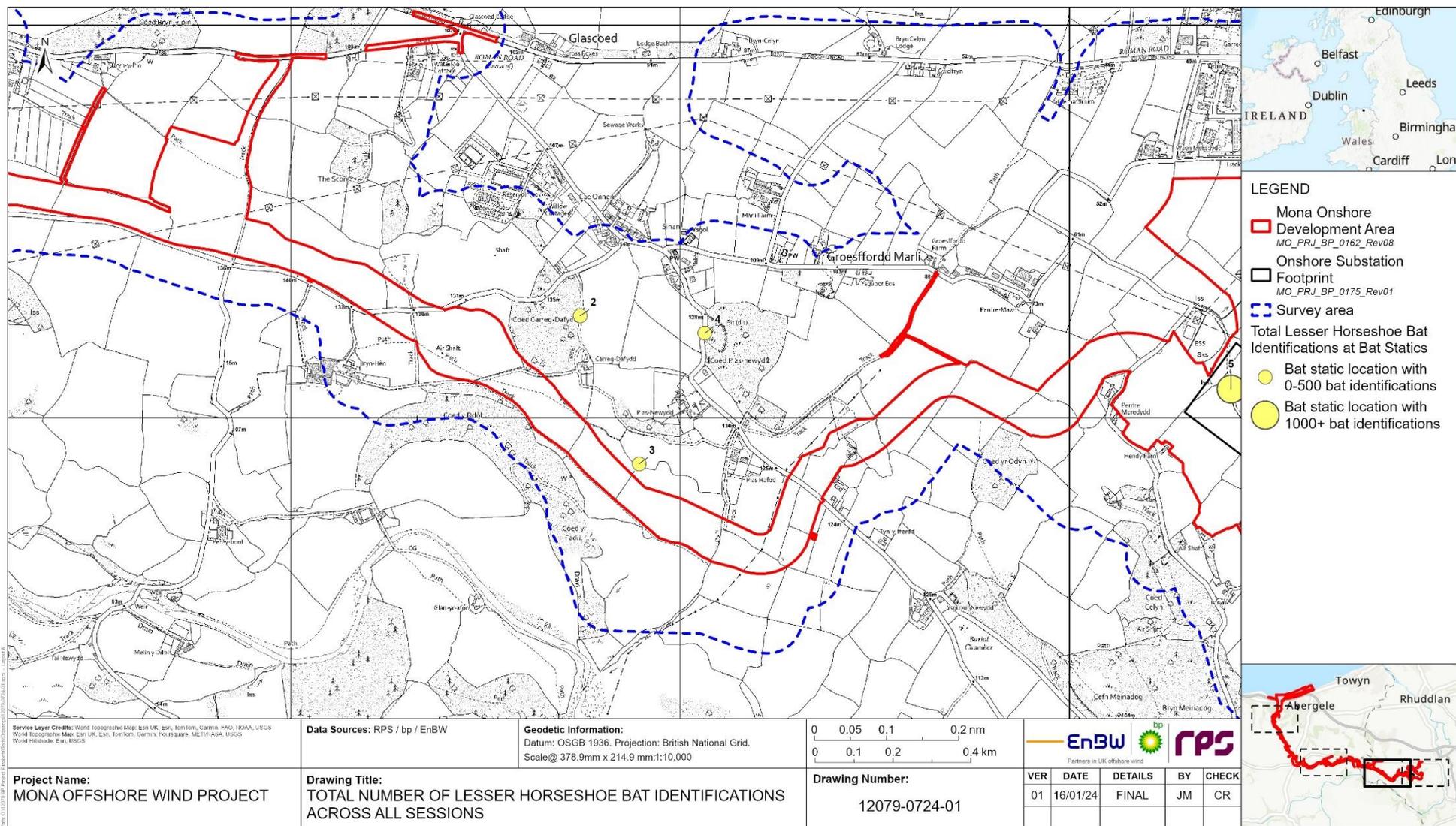


Figure 1.13: Total number of lesser horseshoe bat identifications across all sessions.

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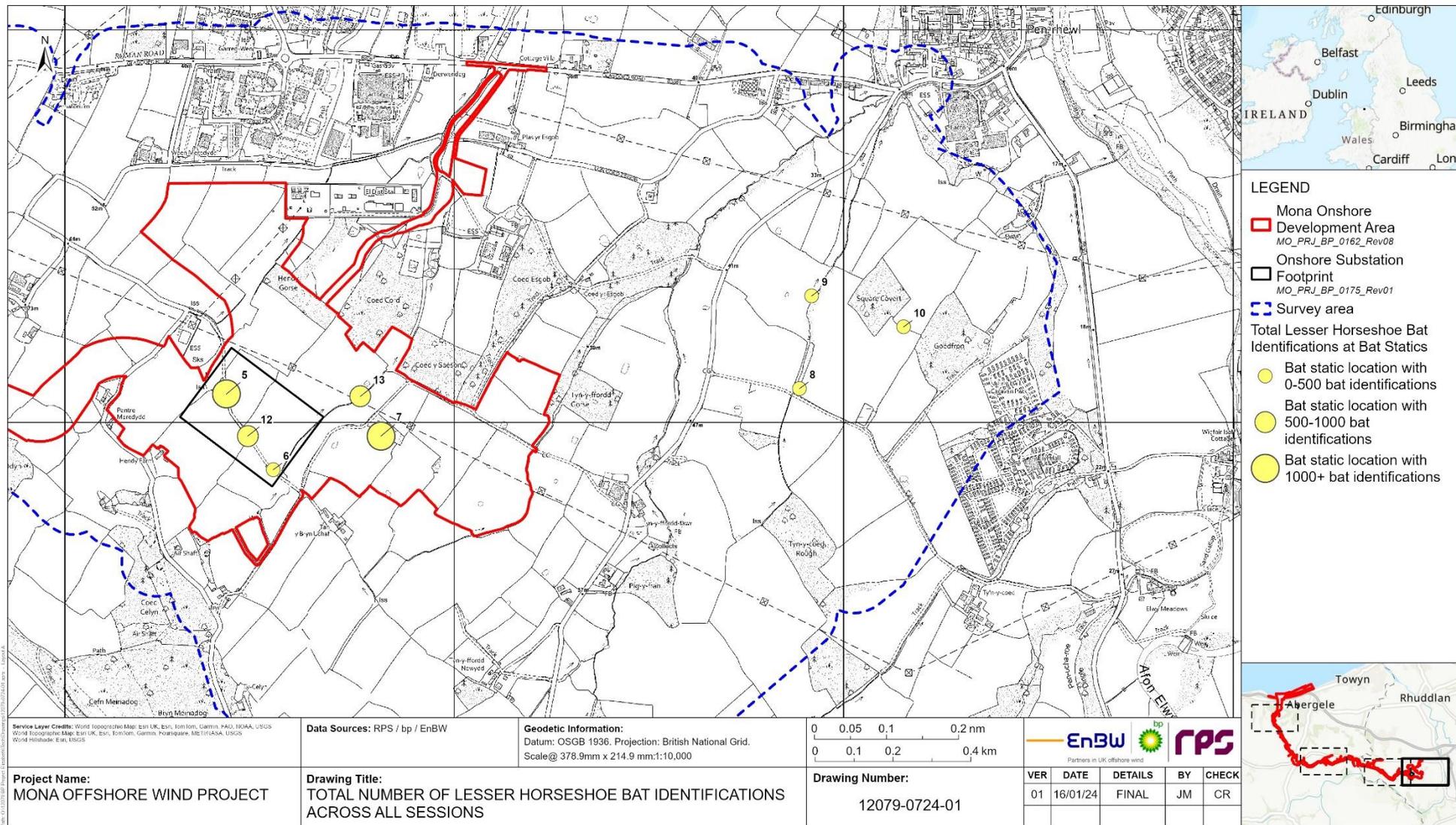


Figure 1.14: Total number of lesser horseshoe bat identifications across all sessions.

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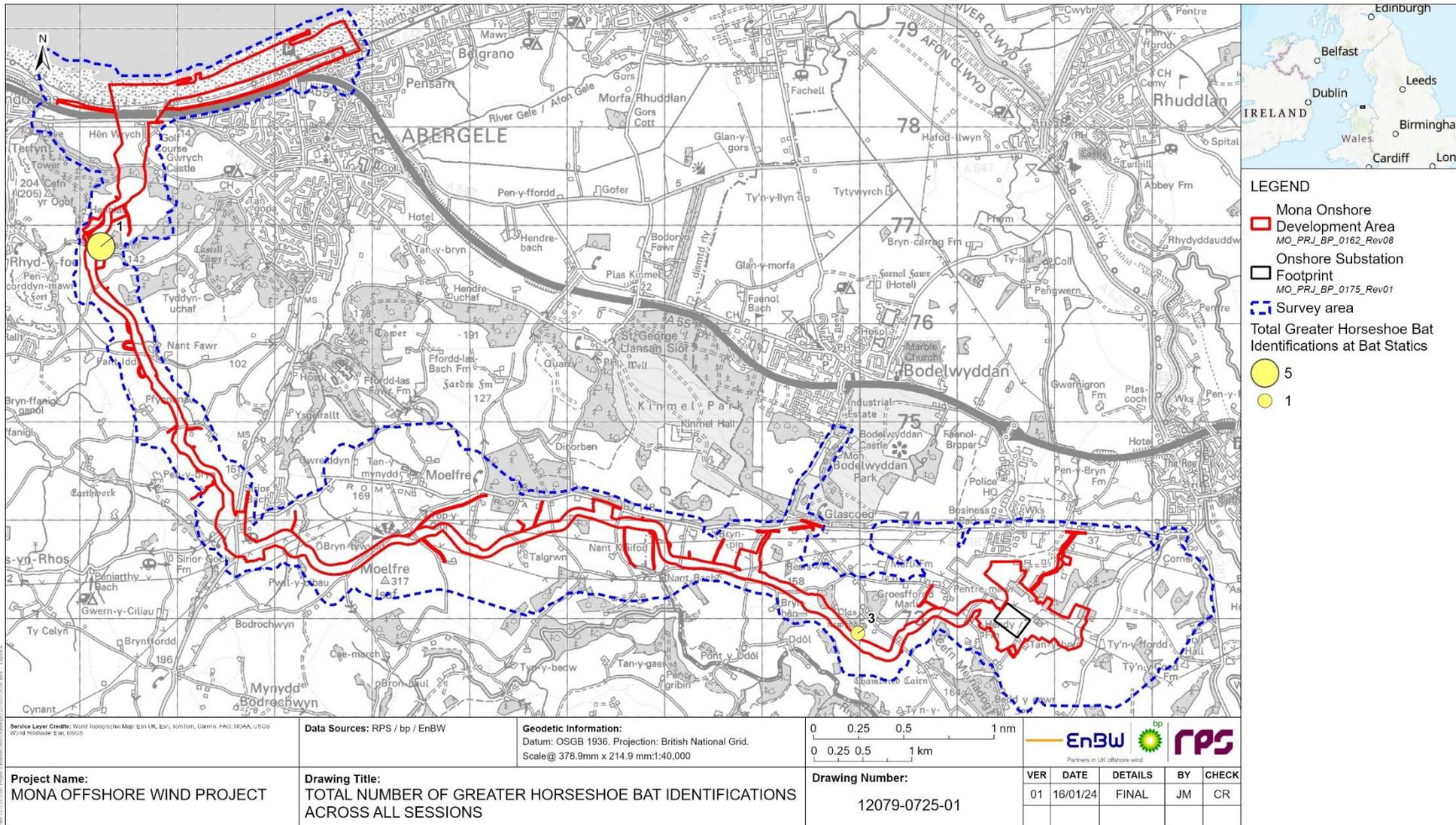


Figure 1.15: Total number of greater horseshoe bat identifications across all sessions.

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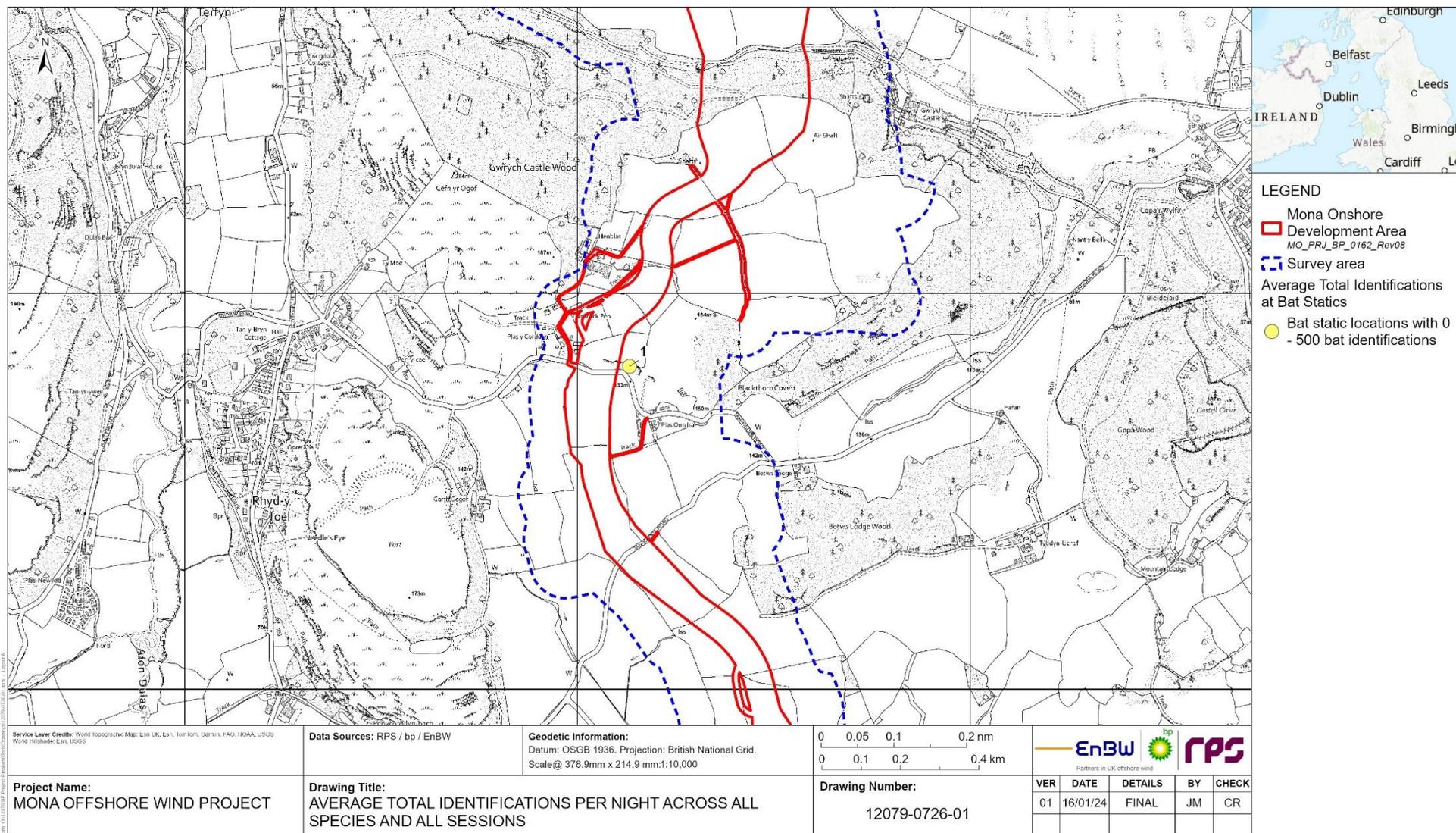


Figure 1.16: Average total identifications per night across all species and all sessions.

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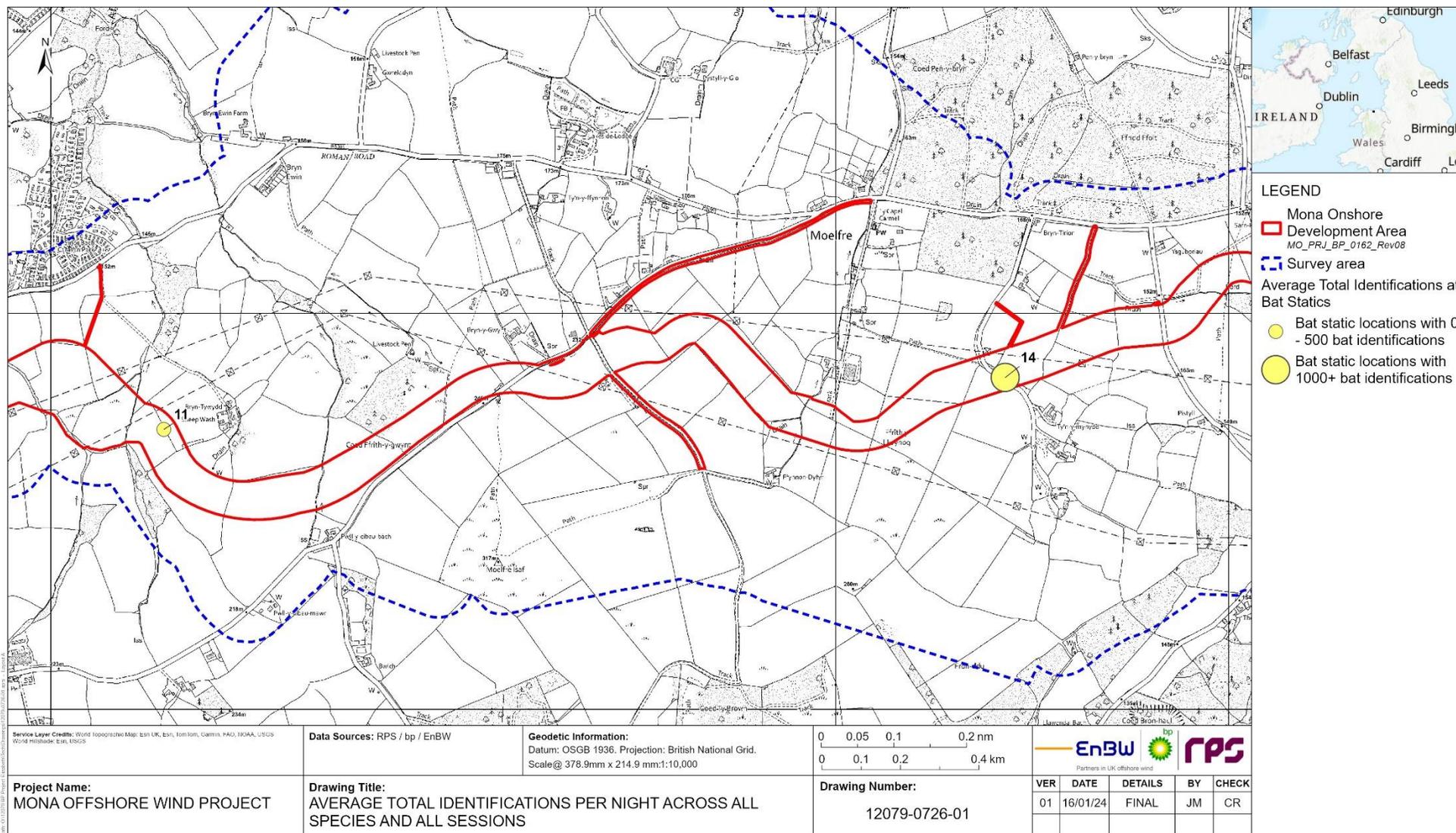


Figure 1.17: Average total identifications per night across all species and all sessions.

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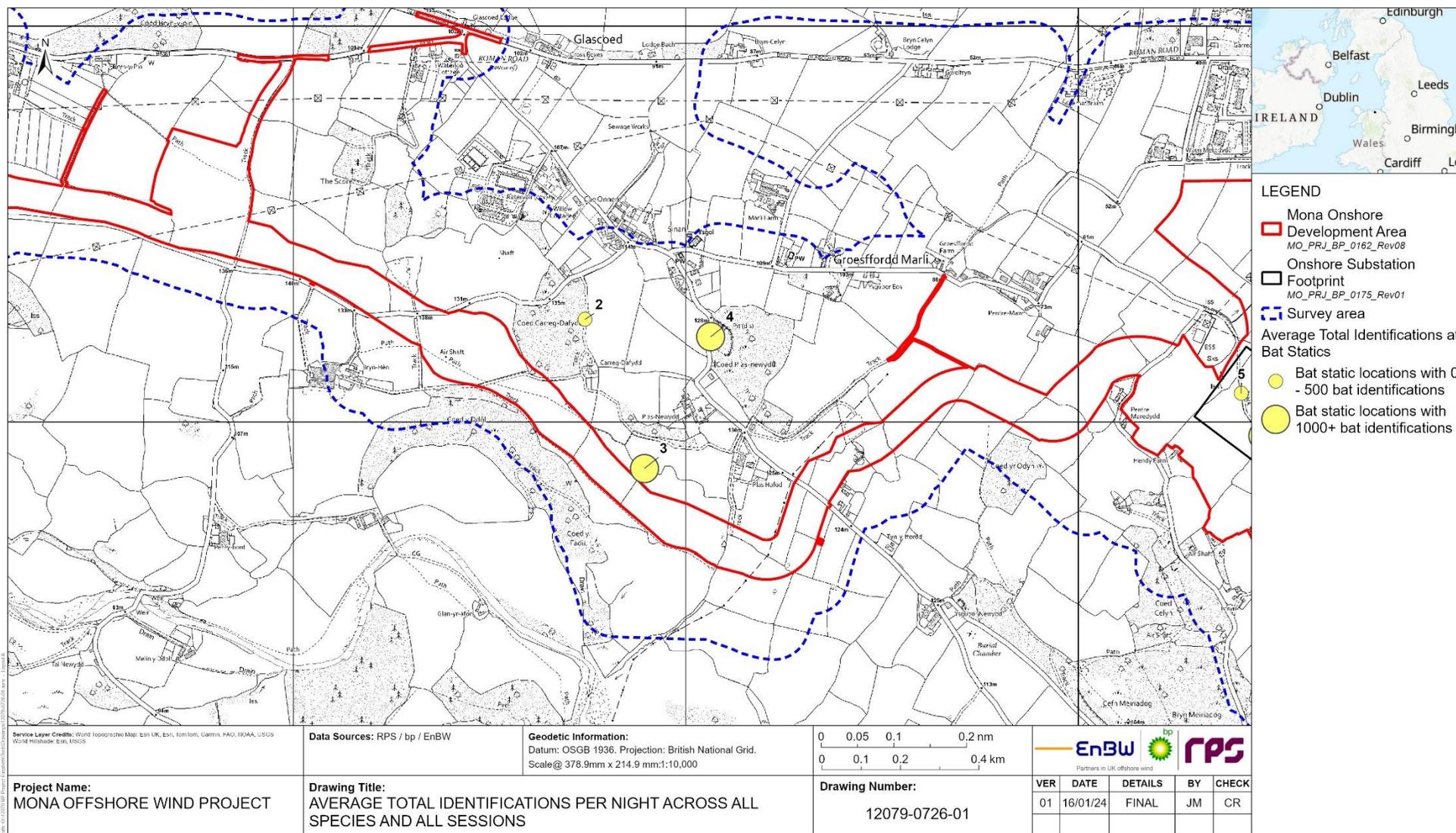


Figure 1.18: Average total identifications per night across all species and all sessions.

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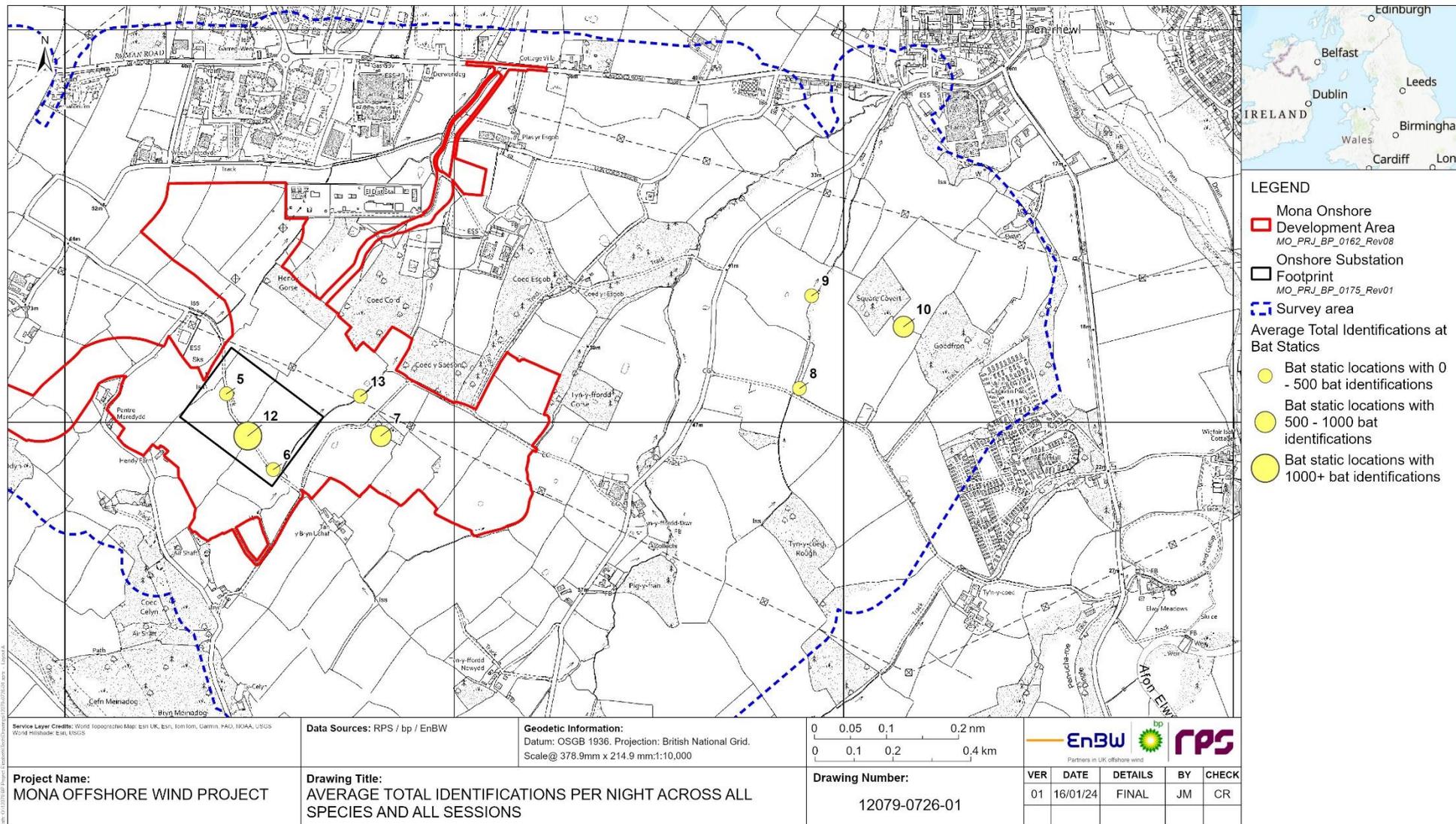


Figure 1.19: Average total identifications per night across all species and all sessions.

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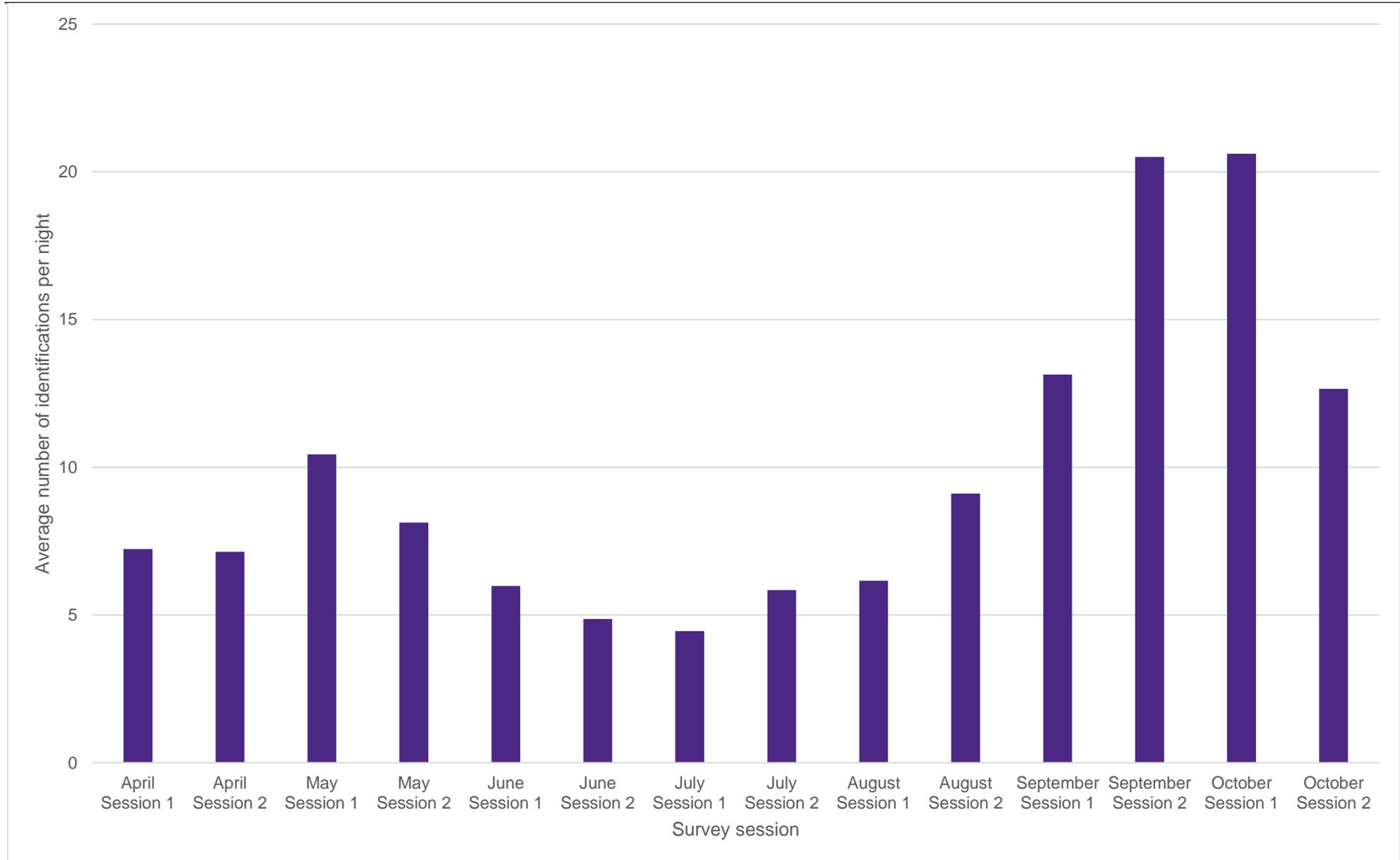


Figure 1.20: Average number of identifications per night across all locations by survey season for lesser horseshoe bats.

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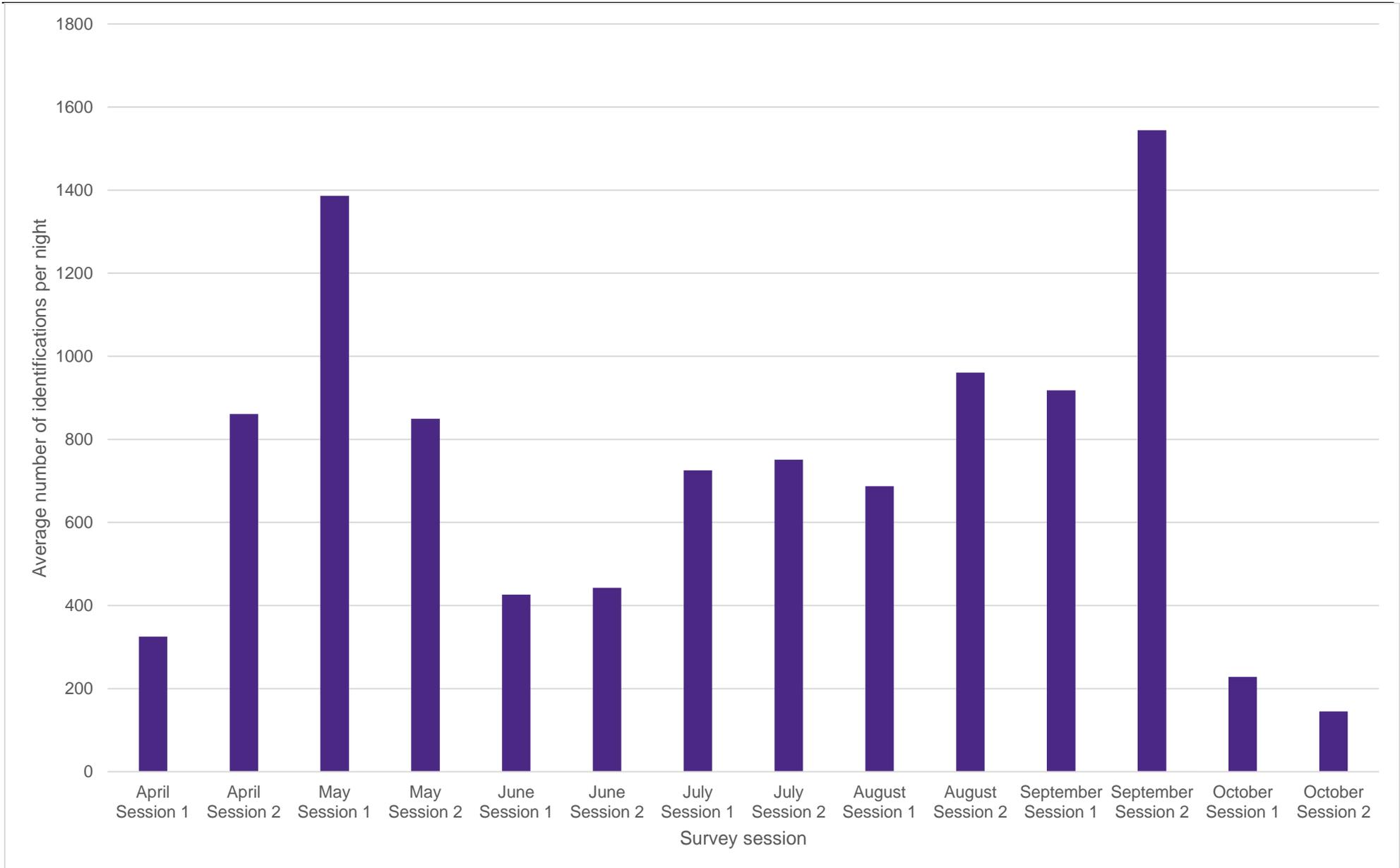


Figure 1.21: Average number of identifications per night across all locations and species by survey session.

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Table 1.18: Average total bat identifications per static survey location.

Location number	CP	GHS	L	LHS	NP	N	S	SP	My	LE	Total
1	177.7	0.1	21.8	9.5	0.4	4.9	16.4	14.4	2.1	0.4	247.7
2	76.7	0.0	6.4	0.2	0.0	6.0	0.2	15.4	1.2	0.1	106.4
3	1175.2	0.0	60.5	2.9	2.3	24.5	2.0	476.3	11.7	2.3	1757.7
4	869.1	0.0	34.4	1.5	0.3	13.5	1.1	158.5	4.7	0.9	1083.9
5	77.8	0.0	9.1	24.8	0.1	16.7	0.3	115.7	20.7	0.8	266.1
6	16.2	0.0	5.0	2.5	0.0	15.6	0.0	115.3	2.4	1.1	158.3
7	267.7	0.0	42.8	23.8	0.1	35.3	0.6	532.1	43.2	1.3	946.9
8	172.1	0.0	6.0	10.5	1.8	8.3	0.2	235.4	25.8	2.3	462.4
9	70.7	0.0	1.3	4.9	0.1	4.7	0.0	76.7	11.7	0.4	170.5
10	470.0	0.0	6.2	3.2	0.2	7.2	0.0	268.8	8.2	3.3	767.1
11	8.2	0.0	4.3	5.0	0.0	7.1	0.4	27.9	3.5	0.7	57.1
12	786.3	0.0	70.7	21.9	0.0	41.9	29.3	405.3	55.8	2.7	1413.9
13	17.3	0.0	25.3	15.8	0.0	13.4	5.8	156.0	34.8	3.1	271.6
14	1139.1	0.0	12.0	1.8	0.0	4.9	21.3	946.9	72.5	0.0	2198.5

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1.7.3 Kinmel Hall activity surveys

- 1.7.3.1 No lesser horseshoe bat activity was recorded during the survey undertaken on 28 June 2023.
- 1.7.3.2 Lesser horseshoe bat activity was recorded at one of the six survey locations on 19 July 2023, as shown in Table 1.19. Five brief identifications of a lesser horseshoe bat were heard at location 1, however, the bats were not visually confirmed by the surveyor.
- 1.7.3.3 Lesser horseshoe bat activity was recorded at three of the six survey locations during the survey undertaken on 20 September 2023, as shown in Table 1.19. A total of six identifications were heard across locations 1, 2 and 3 however the bats were not visually confirmed by the surveyors.

Table 1.19: Lesser horseshoe bat identifications recorded during Kinmel Hall surveys.

Survey location	Survey 1 28 June 2023	Survey 2 19 July 2023	Survey 3 20 September 2023
1	None recorded	Five brief identifications, bats not seen	One brief identification, bat not seen
2	None recorded	None recorded	One identification, bat not seen
3	None recorded	None recorded	Four identifications, bats not seen
4	None recorded	None recorded	None recorded
5	None recorded	N/A – no access	None recorded
6	None recorded	None recorded	N/A – no access

- 1.7.3.4 Other bat species recorded during the Kinmel Hall surveys included long-eared bat, common pipistrelle, *Myotis sp.*, big bat (including noctule, Leisler's, and serotine), and soprano pipistrelle, as detailed in Appendix B.

1.8 Summary

- 1.8.1.1 This technical report presents the results of the bat activity surveys undertaken between April and July 2023 to inform Volume 3, Chapter 3: Onshore ecology of the Environmental Statement.
- 1.8.1.2 One internationally designated site, where bats are a designated feature, was identified 18.82 km from the bat activity study area, and one nationally designated site, where bats are a designated feature, was located 0.82 km from the bat activity study area. Both sites were important for lesser horseshoe bats.
- 1.8.1.3 Automated static detector surveys were undertaken to determine the species present within the bat activity study area. The surveys were completed at 14 locations within the bat activity survey area between April and October where access was granted.

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- 1.8.1.4 The automated static detector surveys recorded ten different species of bat within the bat activity survey area, with at least eight different species of bat recorded at every location including lesser horseshoe bats.
- 1.8.1.5 Greater horseshoe bats were recorded at location 1 and 3. Nathusius' pipistrelle bats were recorded at locations 1-10 and 12.
- 1.8.1.6 Common pipistrelle had the highest number of bat identifications per night for half of the locations, with soprano pipistrelle having the highest number of bat identifications per night for the other half of locations.
- 1.8.1.7 The location with the highest bat activity was location 14, with an average of 2,198.5 identifications per night across all sessions and species.
- 1.8.1.8 The location with the lowest bat activity was location 11, with an average of 57.1 identifications per night across all sessions and species.
- 1.8.1.9 The session with the highest bat activity was in September session 2, with an average of 1544.1 identifications per night across all locations and species.
- 1.8.1.10 The session with the lowest bat activity was in October session 1, with an average of 145.2 identifications per night across all locations and species.
- 1.8.1.11 No lesser horseshoe bat identifications were recorded during the first Kinmel Hall survey. Five brief identifications of lesser horseshoe bats were recorded at location 1 during the second Kinmel Hall survey undertaken on 19 July 2023. One brief identification of lesser horseshoe bats was recorded at both location 1 and 2, and four identifications of lesser horseshoe bats were recorded at location 3 during the third Kinmel Hall survey, undertaken on 20 September 2023. None of the lesser horseshoe bats were seen during the surveys.
- 1.8.1.12 Species recorded during bat activity surveys included those that are widespread throughout north/mid-Wales (common pipistrelle, soprano pipistrelle and brown long-eared bats), widespread in many areas but not as abundant in all (Myotis species and noctule), rare species (lesser horseshoe bats), and very rare species (greater horseshoe, serotine, Leisler's bat and Nathusius' pipistrelle).

1.9 References

Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). Bat Conservation Trust, London.

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Appendix A: Total number of bat identifications per species

A.1. Location 1

Survey dates	Survey session of nights	Number of nights	CP	GHS	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	5	2,659	0	136	49	1	15	1	48	2	0	2,911
	2	4	695	1	143	6	0	17	3	22	6	1	894
May 2023	1	5	2,615	1	639	146	3	19	811	74	12	5	4,325
	2	5	2,845	1	95	129	0	17	129	141	35	5	3,397
June 2023	1	5	1,300	0	346	102	14	12	182	83	4	5	2,048
	2	5	865	2	53	30	4	10	5	38	17	0	1,024
July 2023	1	5	119	0	3	18	2	10	1	5	15	0	173
	2	4	194	0	16	41	4	7	0	73	21	0	356
August 2023	1	5	178	0	8	41	0	4	5	6	7	5	254
	2	5	322	0	27	52	0	24	7	221	11	5	669
September 2023	1	5	420	0	20	36	1	202	1	266	7	1	954
	2	2	0	0	0	0	0	0	0	0	0	0	0
October 2023	1	4	1	0	0	5	0	0	0	5	1	0	12
	2	3	0	0	0	0	0	0	0	1	0	0	1
Total		62	12,213	5	1,486	655	29	337	1,145	983	138	27	17,018

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A.2. Location 2

Survey dates	Survey session	Number of nights	CP	L	LHS	NP	N	S	SP	My	LE	Total
June 2023	1	1	21	0	1	0	3	0	27	2	1	55
July 2023	1	5	209	10	0	0	6	0	73	0	0	298
July 2023	2	4	374	21	0	1	16	2	99	1	0	514
August 2023	1	5	327	93	0	0	89	1	54	6	0	570
	2	5	1,417	69	0	0	52	2	108	24	0	1,672
September 2023	1	5	67	8	3	0	4	0	5	1	0	88
	2	5	93	16	0	0	25	3	40	1	0	178
Total		30	2,508	217	4	1	195	8	406	35	1	3,375

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A.3. Location 3

Survey dates	Survey session	Number of nights	CP	GHS	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	2	537	0	8	0	0	2	0	20	1	0	568
	2	4	3,194	0	136	14	0	40	0	3,221	10	8	6,623
May 2023	1	4	10,646	0	356	5	7	57	28	678	187	29	11,993
	2	5	5,638	0	100	1	18	57	1	3,806	30	21	9,672
June 2023	1	4	1,471	0	112	13	24	71	13	2,317	35	3	4,059
	2	5	5,086	0	871	9	51	121	12	5,726	21	5	11,902
July 2023	1	5	8,933	0	192	8	23	89	4	1,366	62	4	10,681
	2	5	11,924	0	357	3	3	127	12	1,149	119	6	13,700
August 2023	1	5	8,943	0	297	9	2	113	4	1,968	67	8	11,411
	2	5	4,028	0	301	30	1	164	17	2,457	47	14	7,059
September 2023	1	5	1,007	0	242	44	1	461	16	2,517	33	25	4,346
	2	5	4,471	1	492	31	0	122	3	1,766	31	7	6,924
Total		54	65,878	1	3,464	167	130	1,424	110	26,991	643	130	98,938

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A.4. Location 4

Survey dates	Survey session	Number of nights	CP	L	LHS	NP	N	S	SP	My	LE	Total	
April 2023	1	5	344	0	0	0	6	0	60	5	0	415	
	2	5	6,629	15	8	0	103	1	1,861	113	0	8,730	
May 2023	1	5	1,145	46	4	0	28	19	226	6	1	1,475	
	2	5	1,914	2	3	1	19	1	103	3	2	2,048	
June 2023	1	5	3,033	22	10	3	73	0	135	8	0	3,284	
	2	5	1,231	16	5	1	36	1	293	2	0	1,585	
July 2023	1	5	5,765	72	2	0	6	1	602	15	1	6,464	
	2	5	9,366	320	4	9	56	13	967	31	8	10,774	
August 2023	1	5	7,350	697	5	2	208	15	658	18	5	8,958	
	2	5	7,123	283	18	1	71	5	869	33	11	8,414	
September 2023	1	5	312	66	14	0	50	3	789	10	8	1,252	
	2	5	7,724	481	8	0	119	3	2,420	33	14	10,802	
Total			60	51,936	2,020	81	17	775	62	8,983	277	50	64,201

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A.5. Location 5

Survey dates	Survey session	Number of nights	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	5	46	1	5	0	4	0	23	1	0	80
	2	3	623	9	20	0	51	0	294	0	0	997
June 2023	1	5	876	129	1	1	96	5	764	74	8	1,954
	2	5	134	25	34	1	117	3	220	9	3	546
July 2023	1	5	457	23	44	1	317	0	720	12	3	1,577
	2	5	306	54	11	0	85	4	150	2	4	616
August 2023	1	5	533	81	14	0	35	3	751	30	1	1,448
	2	5	263	51	61	0	48	1	508	45	9	986
September 2023	1	5	151	29	98	2	114	0	439	125	4	962
	2	5	723	120	556	0	73	2	1,202	785	9	3,470
October 2023	1	5	71	16	429	0	25	0	759	151	2	1,453
	2	5	71	3	203	0	4	0	913	9	6	1,209
Total		58	4,254	541	1,476	5	969	18	6,743	1,243	49	15,298

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A.6. Location 6

Survey dates	Survey session	Number of nights	CP	L	LHS	NP	N	S	SP	My	LE	Total	
April 2023	2	5	651	135	85	0	285	0	1,347	110	16	2,629	
May 2023	2	5	161	78	35	1	511	0	3,668	17	38	4,509	
June 2023	1	4	17	48	14	0	51	2	715	5	6	858	
	2	3	0	0	0	0	0	0	5	0	0	5	
July 2023	1	3	27	1	1	0	0	0	12	0	0	41	
	2	1	0	0	0	0	0	0	3	0	0	3	
August 2023	1	1	0	0	0	0	0	0	4	0	0	4	
	2	1	0	0	0	0	0	0	1	0	0	1	
September 2023	1	1	0	0	0	0	0	0	1	0	0	1	
October 2023	1	5	10	0	0	0	0	0	183	0	0	193	
	2	5	5	0	0	0	0	0	178	0	0	183	
Total			34	871	262	135	1	847	2	6,117	132	60	8,427

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A.7. Location 7

Survey dates	Survey session	Number of nights	CP	L	LHS	N	S	SP	My	LE	Total
April 2023	1	4	50	6	110	0	2	0	571	37	2
	2	4	138	3	132	0	1	0	668	47	0
May 2023	2	9	3,518	20	147	0	32	2	4,394	631	8
June 2023	1	5	1,008	40	74	0	46	2	3,057	127	7
	2	5	213	62	28	1	92	5	1,811	90	0
July 2023	1	5	1,161	77	74	1	433	3	436	108	3
	2	5	496	94	108	0	321	8	363	59	9
August 2023	1	5	1,100	89	145	1	144	4	285	73	16
	2	5	1,430	219	235	0	249	6	5,518	263	13
September 2023	1	5	5,757	625	82	0	221	7	3,345	1,194	15
	2	3	2,103	898	106	1	424	3	8,195	250	0
October 2023	1	5	192	29	112	0	41	0	476	12	9
	2	5	351	26	127	0	18	1	1,649	8	7
Total		65	17,517	2,188	1,480	4	2,024	41	30,768	2,899	89

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A.8. Location 8

Survey dates	Survey session	Number of nights	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	5	662	1	18	0	11	0	113	2	0	807
May 2023	2	5	569	25	70	0	21	1	1,827	233	38	2,784
June 2023	1	5	671	44	25	4	67	0	1,191	109	2	2,113
	2	5	1,540	50	97	32	66	2	1,576	172	6	3,541
Total		20	3,442	120	210	36	165	3	4,707	516	46	9,245

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A.9. Location 9

Survey dates	Survey session	Number of nights	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	5	68	1	16	0	7	0	17	1	0	110
	2	5	525	9	19	0	22	0	902	3	3	1,483
May 2023	2	9	844	10	58	0	8	0	624	216	7	1,767
June 2023	1	5	421	8	27	2	35	0	321	76	2	892
	2	5	192	10	23	1	64	1	361	42	1	695
Total		29	2,050	38	143	3	136	1	2,225	338	13	4,947

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A.10. Location 10

Survey dates	Survey session	Number of CP nights	CP	L	LHS	NP	N	S	SP	My	LE	Total
April 2023	1	5	3,631	18	15	0	5	0	1,611	14	0	5,294
	2	5	3,806	40	23	0	27	0	3,450	72	0	7,418
May 2023	2	5	4,246	74	8	6	46	0	1,489	46	79	5,994
June 2023	1	5	40	12	16	0	54	0	76	38	3	239
	2	5	28	11	17	0	47	1	95	36	0	236
Total		25	11,751	155	79	6	179	1	6,721	206	82	19,180

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A.11. Location 11

Survey dates	Survey session	Number of nights	CP	L	LHS	N	S	SP	My	LE	Total
July 2023	1	5	56	19	15	19	1	70	11	0	191
	2	5	121	9	3	20	1	175	47	2	378
August 2023	1	5	31	25	11	15	4	199	32	2	319
	2	5	45	51	39	71	4	408	15	10	643
September 2023	1	5	39	30	35	88	2	97	21	3	315
	2	5	17	14	40	21	2	91	7	4	196
October 2023	1	5	7	21	33	35	1	35	6	2	140
	2	5	10	4	23	14	0	41	2	5	99
Total		40	326	173	199	283	15	1,116	141	28	2,281

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A.12. Location 12

Survey dates	Survey session	Number of nights	CP	L	LHS	N	S	SP	My	LE	Total
July 2023	1	5	3,620	142	14	0	1	441	4	123	19
	2	5	1,780	138	73	0	0	399	4	56	28
August 2023	1	5	1,883	252	77	0	214	4	110	38	8
	2	5	6,757	390	49	1	311	13	333	509	14
September 2023	1	5	3,308	268	366	0	335	10	866	442	8
	2	3	3,745	559	46	0	237	7	6,506	304	2
Total		21,093	1,749	625	1	1,098	874	7,823	1,472	79	27,985

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A.13. Location 13

Survey dates	Survey session	Number of nights	CP	L	LHS	N	S	SP	My	LE	Total
July 2023	1	5	51	71	43	0	92	1	315	40	613
	2	5	32	176	66	0	133	2	231	56	696
August 2023	1	5	71	117	71	115	2	264	27	2	669
	2	5	117	151	50	80	2	957	54	9	1,420
September 2023	1	4	93	65	43	79	0	439	67	7	793
	2	5	235	358	131	203	2	2,129	568	5	3,631
October 2023	1	5	51	49	133	24	2	1,818	86	4	2,167
	2	5	20	9	83	14	0	519	28	1	674
Total		39	670	996	620	515	233	6,129	1,376	124	10,663

MONA OFFSHORE WIND PROJECT

A.14. Location 14

Survey dates	Survey session	Number of nights	CP	L	LHS	N	S	SP	My	LE	Total
July 2023	1	5	8,073	44	3	0	300	4	1,413	0	9,837
	2	5	8,129	112	2	1	550	1	1,306	0	10,101
August 2023	1	5	6,324	35	6	0	52	1	3,487	47	9,952
	2	3	4,093	43	11	0	30	0	5,580	30	9,787
September 2023	1	2	5,496	48	7	0	27	0	4,336	20	9,934
	2	4	1,468	67	4	0	19	0	8,853	11	10,422
October 2023	5	290	11	14	0	0	1	2,835	5	3,156	5
	3	210	1	4	0	0	0	206	10	431	3
Total		32	34,083	361	51	1	978	7	28,016	123	63,620

Appendix B: Records of non-target species identifications during Kinmel Hall Surveys

Survey location	Survey 1 28 June 2023	Survey 2 19 July 2023	Survey 3 20 September 2023
1	BLE - commuting and foraging CP - commuting and foraging Myo - commuting and foraging Big bat - heard not seen SP - foraging	Big bat - foraging Myo - foraging Pip - foraging	Big bat - heard not seen BLE - heard not seen CP - heard not seen SP - commuting
2	CP - foraging Myo - commuting Big bat - commuting	Big bat - heard not seen BLE - foraging Myo - heard not seen SP - heard not seen	Big bat - heard not seen CP - heard not seen Myo - heard not seen SP - heard not seen
3	Big bat - heard not seen Pip - commuting and foraging	Big bat - commuting Pip - foraging and commuting	CP - heard not seen Myo - heard not seen SP - commuting
4	CP - commuting and foraging Myo - commuting Big bat - heard not seen SP - commuting and foraging	Big bat - commuting CP - foraging and commuting Myo - heard not seen SP - foraging and commuting	CP - heard not seen SP - heard not seen
5	CP - commuting and foraging Myo - commuting and foraging Big bat - commuting and foraging SP - commuting and foraging	N/A - no access	CP - heard not seen Myo - heard not seen SP - commuting
6	BLE - heard not seen CP - commuting and foraging Myo - heard not seen SP - commuting and foraging	Big bat - foraging and commuting BLE - foraging and commuting Myo - foraging and commuting Pip - foraging and commuting	N/A - no access