NORTH FALLS

Offshore Wind Farm

ENVIRONMENTAL STATEMENT

Appendix 23.9 Bat Activity Survey Report (Part 1 of 2)

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NORTH FALLS
Offshore Wind Farm

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ECOLOGY
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Bat Activity Survey Report

North Falls Offshore Wind Farm Ltd

February 2023

ECOLOGY | ARBORICULTURE

Status	Name	Date
Draft	Georgina Davey BSc (Hons) ACIEEM	03/02/2023
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EXECUTIVE SUMMARY

Ecology Resources Limited was commissioned by Royal HaskoningDHV on behalf of North Falls Offshore Wind Farm Limited (NFOW), to undertake bat activity surveys within the onshore project area plus a 50m buffer.

Thirteen survey transects were defined within the onshore project area (plus a 50m buffer) as covering those habitats which provided moderate or high suitability to support foraging and commuting bats. Transect routes were walked a total of seven times at dusk between April-October (inclusive), and once at dawn within the same 24hr survey period during July. Two static bat detectors were placed along each transect route and set to record from 30 minutes before sunset to 30 minutes after sunrise for five consecutive days, between April – October (inclusive).

A total of eight bat species were confirmed from bat call analysis using Kaleidoscope Pro software. Barbastelle bats, an Annex II species under the European Habitats Directive, were recorded by either method along all 13 transects. Common pipistrelle bats were the most frequently recorded species, comprising 72% of the calls recorded on transect surveys and 69% of all calls from static detector surveys.

Contents

1. INTRODUCTION

Ecology Resources Limited was commissioned by Royal HaskoningDHV on behalf of North Falls Offshore Wind Farm Limited (NFOW), to undertake bat activity surveys of habitat with moderate to high suitability to support commuting and foraging bats within the onshore project area plus a 50m buffer.

1.2 Project background

North Falls Offshore Wind Farm (herein North Falls or 'the project') is a proposed extension to the operational Greater Gabbard Offshore Wind Farm (GGOW), which is located off the east coast of England in the Southern North Sea and was opened in 2013. North Falls is located to the west of the existing GGOW and at its closest point is approximately 22km offshore. The wind farm is being developed by North Falls Offshore Wind Farm Limited, a joint venture between SSE Renewables and RWE.

North Falls is currently awaiting a formal grid connection offer from National Grid. Whilst this process is ongoing, in order to ensure that adequate baseline data is collected to inform the Environmental Impact Assessment (EIA), North Falls has progressed with site selection of the project's onshore infrastructure (landfall location, onshore cable route and onshore substation location) at risk. The outputs of North Falls site selection process have then been used to generate a study area for the purposes of undertaking a suite of ecological surveys during 2021 and 2022 so that baseline data for the project can be gathered. This is referred to herein as the 'onshore project area'.

An Extended Phase 1 habitat Survey of the onshore project area was undertaken between April and March 2022, the findings of which were used to inform the scope of further 'Phase 2' ecology surveys required in 2022 to inform the project's Ecological Impact Assessment (EcIA) in support of its Development Consent Order (DCO) application.

This report details the scope, methodology and findings of bat activity surveys, which form part of this suite of Phase 2 ecology surveys.

1.2 Legislation

All UK bat species are protected under the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Annex IV of the European Habitats Directive 1992. The combined effect of this legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb a bat, in such a way as to be likely to:
  - impair their ability:
    - to survive, breed or reproduce or rear or nurture their young;
    - to hibernate or migrate;
  - affect significantly the local distribution or abundance of that bat species;
- damage or destroy a breeding site or resting place of any bat; and

- intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection (this is taken to mean all bat roosts whether bats are present or not).

In addition, five British bat species are listed on Annex II of the EU Habitats Directive, 1992. Annex II species may qualify as features for sites to be designated as Special Areas for Conservation (SACs). These species are:

- Barbastelle *Barbastella barbastellus;*
- Bechstein's bat *Myotis bechsteinii*;
- Brown Long-eared bat *Plecotus auratus;*
- Greater horseshoe bat *Rhinolophus ferrumequinum;*
- Lesser horseshoe bat *Rhinolophus hipposideros*;
- Noctule *Nyctalus noctule; and*
- Soprano Pipistrelle *Pipistrellus pygmaeus*

2. METHODOLOGY

Bat surveys were completed in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, J (ed.), 2016). Sixty-one hedgerows and six woodlands were identified as having moderate suitability for supporting commuting and foraging bats during the Extended Phase 1 Habitat Survey completed by Royal HaskoningDHV (Royal HaskoningDHV, 2021).

Thirteen transects (labelled Transect 1 to Transect 13) were created by grouping these habitats together, so that each transect route covered multiple suitable habitats and was approximately 3-5km in length. Each transect had two static detectors deployed along the route, labelled by transect number then location 1 or location 2 e.g. T1L1 and T1L2. All transect and static detector locations are shown in Figures 1.1-1.10 (Appendix A).

2.1 Transect surveys

In accordance with the Bat Surveys for Professional Ecologists: Good Practice Guideline (Collins, J (ed.), 2016), transect surveys were carried out once a month between April-October 2022 with back to back dusk and dawn surveys conducted in July, totalling eight surveys for each transect. Each transect was walked at a constant pace by two surveyors to record levels and location of bat activity, starting at sunset and continued for two hours after sunset. Surveys were conducted during suitable weather conditions (temperatures above 10˚C at dusk, little/no wind, no precipitation) when bats are most likely to be active.

Surveyors used Wildlife Acoustics Echo Meter Touch 2 Pro bat detectors in conjunction with an Android tablet. Where possible, species were identified from visual contacts and, if a bat was seen, visual cues were used to aid identification. Where possible, the number of bats observed, and their behaviour was also recorded.

2.2 Static detectors

In accordance with the Bat Surveys for Professional Ecologists: Good Practice Guidelines, two static detectors were deployed per transect of moderate suitability to support commuting and foraging bats once a month between April-October (inclusive), 2022. These were given an identification of Transect Number/Location 1 or 2, e.g. T1L1 (Transect 1, Location 1). Static detectors used were Wildlife Acoustics Song Meter Mini Bat Ultrasonic detectors. These were securely fastened to a suitable anchor point e.g. fence post, pole or tree and set to record for a minimum of five consecutive nights, beginning 30 minutes before sunset until 30 minutes after sunrise.

2.3 Field survey personnel

All surveys were led by suitably trained and competent ecologists primarily Johnnie Johnson, bat Level 1 Class Licence 2021-52167-CLS-CLS and supported by

- Alex Sheppard
- Ben Millington-Jones
- Dan Smith
- Patrick Hennessy

All the surveyors that assisted in the delivery of the surveys were suitably experienced and qualified ecologists and are either members of the Chartered Institute of Ecology and Environmental Mangers (CIEEM) or adhere to CIEEM's professional Code of Conduct.

2.4 Data analysis

Following all surveys, sound analysis was carried out on recorded calls by suitably experienced ecologists, using Kaleidoscope® computer software to confirm and enable species identification.

All sound files (.wav) were subject to AutoID with a further 10% of the files having manual identification applied. This included checking rare Essex species identified from the AutoID (alcathoe bat *Myotis alcathoe*, Bechstein's bat *Myotis bechsteinii*, Leisler's bat *Nyctalus leisleri*, Nathusius' pipistrelle *Pipistrellus nathusii*, serotine *Eptesicus serotinus*, barbastelle *Barbastella barbastellus*, grey long-eared bat *Plecotus austriacus*). All species were labelled by the first initial of the genus followed by the first three letters of their species name e.g. *B.bar* or *N.noc*. Myotis species were grouped into their genus as *Myotis sp*.. Where necessary, serotine and Leisler's bats were grouped together into group *E.ser/N.lei* due to the difficulties in distinguishing these calls.

Once analysis was completed, a total species list and number of passes were made per transect and static location. With static detector data, species lists and total passes were also made per night for the five night time period of each monthly deployment.

2.5 Survey limitations

Bats rely on different habitats depending on the season and may appear on a given site after activity surveys have been conducted. On this basis, bats may potentially be present but remain undetected.

The summer of 2022 was exceptionally dry and hot. The month of August, in particular, experienced recurring 'extreme weather warnings' and prolonged periods where temperatures were above 35˚C. This may have had an unknown effect on bat activity, even in the months to follow.

Transect surveys capture bat activity during a single snapshot of time and are dependent on the location of the surveyor along the transect route. Static detector bat surveys capture a larger dataset, however quantities and behaviour of bats cannot be determined from sound recordings alone. Both sets of data must be used to determine the assemblage and activity levels of bats using the site.

During transect surveys there were times the detector would stop recording resulting in short time periods not being recorded before the detector was turned back on again. This is not considered to have impacted upon the assemblage of bats detected during any survey.

It was noted when analysing files there were two cases with static sound files (May T7L2 and June T11L2) and one case with transect sound files (June survey for Transect 4) where the files were corrupted, and analysis could not be completed.

Myotis species were grouped into their genus as *Myotis sp*. as species within this genus have similar calls which are notoriously difficult to accurately differentiate from sound analysis. This is not considered to have impacted upon the results as these species are still captured within the data set.

Through a hardware malfunction the statics deployed in April and May showed incorrect timestamps therefore the dates and times presented on the sound files showed February/March dates and day-time hours; this was corrected for the subsequent months. This malfunction is not considered to have impacted upon the survey results as sound files could still be analysed to produce a species list relative to the time of static detector deployment and collection.

All statics were deployed as planned, apart from T3L1, T3L2, T7L1, T7L2 in April and T3L2 in October due to access refusals resulting in incomplete datasets for these two transects. As these transects could be accessed for other months, an extensive dataset has still been gathered for these locations.

3. RESULTS

3.1 Transect surveys

A summary of observed bats and behaviour noted during transect surveys is presented per transect in Tables 1-13. Survey results for each transect are shown in Figures 2.1-2.13 (Appendix B). All surveys were undertaken in optimal weather conditions (see Appendix C).

Table 1. Summary of observed bats during walked transect surveys along Transect 1.

Transect 1					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	1	0	0	1	2
May	0	3	0	1	4
June	2	3	0	5	10
July (dusk)	7	3	0	6	16
July (dawn)	0	5	0	9	14
August	4	4	0	2	10
September	2	0	0	2	4
October	0	0	0	6	6

Table 2. Summary of observed bats during walked transect surveys along Transect 2.

Transect 2					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	1	0	0	2	3
May	1	5	0	3	9
June	2	3	0	3	8
July (dusk)	0	0	0	2	2
July (dawn)	0	0	0	6	6
August	0	2	0	3	5
September	0	0	0	0	0
October	0	1	0	3	4

Table 3. Summary of observed bats during walked transect surveys along Transect 3.

Transect 3					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	No access				
May	1	11	1	17	30
June	5	7	0	0	12
July (dusk)	0	1	0	10	11
July (dawn)	0	0	0	5	5
August	1	0	0	7	8
September	No access				
October	No access				

Table 4. Summary of observed bats during walked transect surveys along Transect 4.

Transect 4					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	1	2	0	7	10
May	0	0	0	0	0
June	2	4	0	14	20
July (dusk)	0	9	0	15	24
July (dawn)	0	0	0	11	11
August	0	4	0	1	5
September	2	10	0	15	27
October	No access				

Table 5. Summary of observed bats during walked transect surveys along Transect 5.

Transect 5					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	1	2	0	6	9
May	4	1	0	0	5
June	3	0	0	1	4
July (dusk)	1	1	0	12	14
July (dawn)	5	4	0	20	29
August	1	6	0	6	13
September	0	0	0	19	19
October	1	1	0	18	20

Table 6. Summary of observed bats during walked transect surveys along Transect 6.

Transect 6					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	1	1	0	4	6
May	0	0	0	1	1
June	2	5	0	11	18
July (dusk)	1	4	0	8	13
July (dawn)	0	3	0	8	11
August	0	4	0	3	7

September	0	17	0	0	17
October	0	1	0	7	8

Table 7. Summary of observed bats during walked transect surveys along Transect 7.

Transect 7					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	No access				
May	6	6	0	3	15
June	0	4	0	4	8
July (dusk)	1	3	1	8	13
July (dawn)	1	3	0	19	23
August	1	1	0	8	10
September	1	18	3	0	22
October	0	0	0	8	8

Table 8. Summary of observed bats during walked transect surveys along Transect 8.

Transect 8					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	2	1	0	5	8
May	5	4	0	13	22
June	3	3	0	0	6
July (dusk)	1	2	0	15	18
July (dawn)	2	0	0	8	10
August	2	2	0	8	12
September	1	20	0	0	21
October	0	11	0	1	12

Table 9. Summary of observed bats during walked transect surveys along Transect 9.

Transect 9					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	2	0	0	0	2
May	3	0	0	1	4
June	0	9	0	0	9
July (dusk)	0	3	0	8	11
July (dawn)	0	0	0	6	6

August	4	11	0	0	15
September	6	5	0	2	13
October	0	1	1	8	10

Table 10. Summary of observed bats during walked transect surveys along Transect 10.

Transect 10					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	0	2	0	1	3
May	0	1	0	0	1
June	0	2	0	1	3
July (dusk)	0	0	0	4	4
July (dawn)	0	0	0	2	2
August	2	9		1	12
September	0	2	1	2	5
October	1	0	0	6	7

Table 11. Summary of observed bats during walked transect surveys along Transect 11.

Transect 11					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	3	3	0	10	16
May	1	3	0	1	5
June	5	3	0	1	9
July (dusk)	0	0	0	6	6
July (dawn)	0	1	1	8	10
August	3	11	0	5	19
September	1	5	4	4	14
October	0	3	3	17	23

Table 12. Summary of observed bats during walked transect surveys along Transect 12.

Transect 12					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	0	3	0	6	9
May	6	3	1	10	20
June	1	5	0	0	6

July (dusk)	1	0	0	3	4
July (dawn)	0	0	0	12	12
August	3	6	0	0	9
September	0	0	0	3	3
October	0	0	0	1	1

Table 13. Summary of observed bats during walked transect surveys along Transect 13.

Transect 13					
Month	**Bat behavioural events**				**No. bats recorded**
	Commuting	**Foraging**	**Socialising**	**Unknown**	
April	0	1	0	0	1
May	3	9	0	3	15
June	1	3	0	2	6
July (dusk)	0	0	0	5	5
July (dawn)	0	2	0	2	4
August	0	12	0	0	12
September	0	1	0	7	8
October	0	1	0	7	8

During analysis of bat detector recordings taken during transect surveys, a total of 4045 recordings of bats were gathered from all transect surveys between April and October (inclusive), 2022. The results of the bat detector recording analysis are outlined in Tables 14-26, below.

Table 14: Summary of bat recording analysis, Transect 1.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	0	0	0	1	0	1
May	0	0	0	0	0	0	4	0	0	0	0	4
June	0	0	0	0	1	0	25	10	0	0	0	36
July dusk	4	0	0	0	1	0	126	29	0	0	0	160
July dawn	0	0	0	0	3	0	71	14	0	1	0	89
August	1	0	0	0	0	0	16	13	0	0	0	30
September	0	0	0	0	0	0	8	1	0	1	5	15
October	1	0	0	0	0	0	14	6	0	0	0	21
Total	**6**	**0**	**0**	**0**	**5**	**0**	**264**	**73**	**0**	**3**	**5**	**356**

Table 15: Summary of bat recording analysis, Transect 2.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	1	0	0	0	0	0	0	1
May	0	0	0	0	2	1	14	1	0	0	0	18
June	0	0	0	0	0	0	88	63	1	0	0	152
July dusk	0	0	0	0	1	0	7	0	0	0	0	8
July dawn	0	0	0	0	2	0	22	1	0	0	0	25
August	0	0	0	0	12	0	26	4	0	0	0	42
September	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	14	1	0	0	15
Total	**0**	**0**	**0**	**0**	**18**	**1**	**157**	**83**	**2**	**0**	**0**	**261**

Table 16: Summary of bat recording analysis, Transect 3.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	No access											
May	0	0	0	0	0	0	61	32	0	0	0	93
June	0	0	0	0	3	0	77	0	0	5	0	85
July dusk	0	0	0	0	1	0	38	32	2	3	0	76
July dawn	0	0	0	0	0	2	86	43	3	2	1	137
August	0	0	0	0	0	0	4	11	0	2	1	18
September	No access											
October	No access											
Total	**0**	**0**	**0**	**0**	**4**	**2**	**266**	**118**	**5**	**12**	**2**	**409**

Table 17: Summary of bat recording analysis, Transect 4.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	Detector corrupted and did not record											
July dusk	0	0	0	0	0	0	114	10	0	1	0	125
July dawn	0	0	0	0	0	0	36	4	0	0	0	40
August	0	0	0	0	0	0	37	0	0	0	1	38
September	1	0	0	1	17	0	40	4	0	1	7	71
October	No access											
Total	**1**	**0**	**0**	**1**	**17**	**0**	**227**	**18**	**0**	**2**	**8**	**274**

Table 18: Summary of bat recording analysis, Transect 5.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	1	0	0	0	0	0	15	29	0	0	0	45
May	0	0	0	0	0	0	4	0	0	0	0	4
June	0	0	0	0	0	0	18	0	0	0	0	18
July dusk	0	0	0	0	1	0	53	0	0	0	0	54
July dawn	0	0	0	0	0	0	94	24	0	6	0	124
August	4	0	0	0	4	0	99	12	3	4	4	130
September	1	0	0	0	0	0	56	8	0	1	0	66
October	2	0	0	0	0	0	58	20	2	1	3	86
Total	**8**	**0**	**0**	**0**	**5**	**0**	**397**	**93**	**5**	**12**	**7**	**527**

Table 19: Summary of bat recording analysis, Transect 6.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	4	0	0	0	0	4
May	0	0	0	0	1	0	0	0	0	0	0	1
June	0	0	0	0	0	0	72	36	0	0	0	108
July dusk	0	0	0	0	3	0	36	10	0	0	0	49
July dawn	0	0	0	0	0	0	27	2	0	1	0	30
August	0	0	0	0	2	0	15	11	0	0	0	28
September	0	0	7	0	5	0	11	2	1	0	0	26
October	1	0	0	1	0	0	18	10	0	0	0	30
Total	**1**	**0**	**7**	**1**	**11**	**0**	**183**	**71**	**1**	**1**	**0**	**276**

Table 20: Summary of bat recording analysis, Transect 7.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	No access											
May	0	0	0	0	1	0	49	1	0	0	0	51
June	0	0	0	0	0	0	27	6	0	0	0	33
July dusk	0	0	0	0	3	0	30	5	0	2	0	40
July dawn	0	0	0	0	3	0	37	6	1	1	0	48
August	0	0	0	0	3	0	29	0	2	1	0	35
September	2	0	0	0	0	0	30	5	0	0	0	37
October	1	0	0	0	0	0	29	3	0	1	0	34
Total	**3**	**0**	**0**	**0**	**10**	**0**	**231**	**26**	**3**	**5**	**0**	**278**

Table 21: Summary of bat recording analysis, Transect 8.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	13	2	0	0	0	15
May	0	0	0	0	0	0	195	37	1	0	0	233
June	0	0	0	0	0	0	9	0	0	0	1	10
July dusk	1	0	0	0	2	0	37	22	0	2	0	64
July dawn	0	0	0	0	1	0	28	0	0	0	0	29
August	0	0	0	0	0	0	13	8	0	1	0	22
September	1	0	0	0	0	0	3	13	0	0	0	17
October	3	0	0	0	1	0	12	4	0	0	0	20
Total	**5**	**0**	**0**	**0**	**4**	**0**	**310**	**86**	**1**	**3**	**1**	**410**

Table 22: Summary of bat recording analysis, Transect 9.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	12	0	0	0	0	12
June	0	0	0	0	0	0	21	0	0	0	0	21
July dusk	0	0	0	0	0	0	17	18	0	0	0	35
July dawn	0	0	0	0	0	0	9	7	0	0	0	16
August	0	0	0	0	2	0	10	4	0	0	0	16
September	0	0	0	0	2	0	47	2	0	0	0	51
October	0	0	0	0	0	0	23	10	0	0	0	33
Total	**0**	**0**	**0**	**0**	**4**	**0**	**139**	**41**	**0**	**0**	**0**	**184**

Table 23: Summary of bat recording analysis, Transect 10.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	2	0	0	0	0	2
June	0	0	0	0	0	0	8	0	0	0	0	8
July dusk	0	0	0	0	0	0	7	2	0	0	0	9
July dawn	0	0	0	0	0	0	11	5	0	0	0	16
August	1	0	0	0	0	0	1	4	1	0	0	7
September	0	0	0	0	1	0	28	3	0	0	1	33
October	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1**	**0**	**0**	**0**	**1**	**0**	**57**	**14**	**1**	**0**	**1**	**75**

Table 24: Summary of bat recording analysis, Transect 11.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	92	29	0	4	0	125
May	0	0	0	0	0	0	9	1	0	0	0	10
June	0	0	0	0	4	0	27	4	0	1	2	38
July dusk	0	0	0	0	1	0	18	5	0	0	0	24
July dawn	0	0	0	0	0	0	39	1	0	0	0	40
August	0	0	0	0	26	0	22	28	0	6	0	82
September	0	0	0	0	1	0	59	5	0	1	14	80
October	0	0	0	0	0	0	32	60	0	2	3	97
Total	**0**	**0**	**0**	**0**	**32**	**0**	**298**	**133**	**0**	**14**	**19**	**496**

Table 25: Summary of bat recording analysis, Transect 12.

Month	Bat Species Recordings											Total Bats Recorded
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	132	11	0	1	0	144
May	0	0	0	0	0	1	13	9	0	0	0	23
June	0	4	0	9	2	0	30	2	0	0	0	47
July dusk	0	0	0	0	0	0	19	1	0	0	0	20
July dawn	0	0	0	0	0	0	42	8	0	0	0	50
August	0	0	0	0	0	0	5	2	0	0	1	8
September	0	0	0	0	0	0	12	0	0	0	0	12
October	0	0	0	0	0	0	10	0	0	0	0	10
Total	**0**	**4**	**0**	**9**	**2**	**1**	**263**	**33**	**0**	**1**	**1**	**314**

Table 26: Summary of bat recording analysis, Transect 13.

Month	**Bat Species Recordings**											**Total Bats Recorded**
	B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myotis sp.*	*Pipistrellus sp.*	
April	0	0	0	0	0	0	0	0	0	0	0	0
May	9	0	0	0	0	0	87	26	0	5	0	127
June	0	0	0	0	0	0	0	0	0	0	0	0
July dusk	0	0	0	0	0	0	12	0	0	0	0	12
July dawn	0	0	0	0	0	0	16	0	0	0	0	16
August	0	0	0	0	0	0	6	4	0	1	0	11
September	0	0	0	0	0	0	2	1	0	0	0	3
October	0	0	0	0	0	0	14	2	0	0	0	16
Total	**9**	**0**	**0**	**0**	**0**	**0**	**137**	**33**	**0**	**6**	**0**	**185**

3.2 Static detector surveys

A total of 268,259 recordings of bats were gathered from static bat detector surveys between April and October (inclusive), 2022. Two static bat detectors were placed along each of thirteen transects, totalling 26 static detectors deployed per month. The date ranges of data collection for each static detector are provided in Table 14. The results of the surveys conducted across all 13 transects are outlined in Tables 28-40, below.

All surveys were undertaken when the weather for the five consecutive nights was forecast to be optimal for bats (temperatures above 10˚C, little to no precipitation and wind).

Table 27. Summary of static bat detector survey dates.

Static ID	Date range per month						
	April	May	June	July	August	September	October
T1L1	26-30/04	13-17/05	23-27/06	06-10/07	09-13/08	15-19/09	15-20/10
T1L2	26-30/04	13-17/05	23-27/06	06-10/07	09-13/08	15-19/09	25-28/10
T2L1	21-25/04	13-17/05	23-27/06	06-10/07	09-13/08	15-19/09	15-20/10
T2L2	21-25/04	13-17/05	23-27/06	06-10/07	09-13/08	15-19/09	15-19/10
T3L1	No access	25-29/05	23-27/06	06-10/07	09-13/08	05-09/09	05-09/10
T3L2	No access	25-29/05	23-27/06	06-10/07	09-13/08	21-25/09	No access
T4L1	21-25/04	13-17/05	23-27/06	06-10/07	09-13/08	05-09/09	05-09/10
T4L2	21-25/04	13-17/05	23-27/06	06-10/07	09-13/08	15-19/09	05-09/10
T5L1	21-25/04	13-17/05	23-27/06	06-10/07	09-13/08	05-09/09	05-09/10
T5L2	21-25/04	13-17/05	23-27/06	06-10/07	09-13/08	05-09/09	05-09/10
T6L1	26-30/04	13-17/05	23-27/06	06-10/07	09-13/08	05-09/09	05-09/10
T6L2	26-30/04	13-17/05	23-27/06	06-10/07	09-13/08	05-09/09	05-09/10
T7L1	No access	11-16/05	20-24/06	07-11/07	09-12/08	15-19/09	06-10/10
T7L2	No access	13-17/05*	20-24/06	07-11/07	09-12/08	06-10/09	06-10/10
T8L1	26-30/04	13-17/05	20-24/06	07-11/07	10-14/08	06-10/09	06-10/10
T8L2	26-30/04	13-17/05	20-24/06	07-11/07	10-14/08	06-10/09	06-10/10
T9L1	21-25/04	13-17/05	20-24/06	07-11/07	10-14/08	06-10/09	05-07/10
T9L2	21-25/04	13-17/05	20-24/06	07-11/07	10-14/08	06-10/09	06-10/10
T10L1	21-25/04	13-17/05	20-24/06	07-11/07	10-14/08	06-10/09	06-10/10
T10L2	21-25/04	13-17/05	20-24/06	07-11/07	10-14/08	06-10/09	06-10/10
T11L1	21-25/04	13-17/05	20-24/06	07-11/07	10-14/08	06-10/09	06-10/10
T11L2	21-25/04	13-17/05	20-24/06*	07-11/07	10-14/08	06-10/09	25-29/10
T12L1	21-25/04	13-17/05	20-24/06	07-11/07	10-14/08	05-09/09	06-10/10
T12L2	21-25/04	13-17/05	20-24/06	07-11/07	10-14/08	06-10/09	06-10/10
T13L1	26-30/04	13-17/05	20-24/06	07-11/07	11-15/08	07-11/09	07-11/10
T13L2	26-30/04	13-17/05	20-24/06	07-11/07	09-13/08	07-11/09	07-11/10

**Detector failed and did not record*

Table 28. Summary of bat recording analysis, Statics T1L1 and T1L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T1L1	1	0	0	0	2	1	636	113	0	0	0	0	0	753
	T1L2	1	0	0	0	0	0	20	3	0	0	1	0	0	25
May	T1L1	8	3	1	0	8	16	2906	88	18	2	0	3	0	3053
	T1L2	3	0	0	0	9	5	865	160	1	1	0	0	0	1044
June	T1L1	3	0	0	1	11	14	786	195	7	3	5	53	0	1078
	T1L2	1	0	0	0	9	25	645	476	3	0	1	1	2	1163
July	T1L1	2	0	0	0	14	1	2071	396	5	146	0	14	0	2649
	T1L2	0	0	0	1	6	3	2092	619	3	28	1	7	0	2760
August	T1L1	8	0	1	0	36	2	1135	193	8	8	1	938	0	2330
	T1L2	1	0	0	2	84	0	320	142	5	10	0	5	0	569
September	T1L1	0	0	0	0	3	0	23	0	0	1	0	0	0	27
	T1L2	0	0	0	0	0	9	11	0	0	1	0	0	0	21
October	T1L1	0	0	0	0	20	0	49	82	4	24	0	0	0	179
	T1L2	0	0	0	0	0	0	386	3	0	2	0	0	0	391
Total	T1L1	22	3	2	1	94	34	7606	1067	42	184	6	1008	0	10069
	T1L2	6	0	0	3	108	42	4339	1403	12	42	3	13	2	5973
Combined total		**28**	**3**	**2**	**4**	**202**	**76**	**11945**	**2470**	**54**	**226**	**9**	**1021**	**2**	**16042**

Table 29. Summary of bat recording analysis, Statics T2L1 and T2L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T2L1	0	0	0	0	0	0	240	119	0	48	0	0	0	43
	T2L2	0	0	0	0	0	0	824	51	2	0	0	0	0	877
May	T2L1	0	0	1	0	11	14	9335	926	4	17	1	2	0	10311
	T2L2	0	0	0	0	2	2	2075	77	0	1	0	0	0	2157
June	T2L1	0	0	0	0	2	0	2526	457	0	0	0	0	3	2988
	T2L2	0	0	0	0	7	6	168	47	2	5	0	2	0	237
July	T2L1	0	0	0	0	34	16	1177	424	4	30	4	21	0	1710
	T2L2	0	0	0	0	10	5	2638	110	0	1	1	0	0	2765
August	T2L1	1	0	0	2	106	3	517	135	9	16	1	9	0	799
	T2L2	1	0	3	1	16	0	222	139	13	18	1	0	0	414
September	T2L1	0	0	0	0	4	7	19	0	0	0	0	0	0	30
	T2L2	0	0	0	0	4	4	22	0	2	2	0	2	0	36
October	T2L1	0	0	0	0	4	0	2	9	0	5	0	2	0	22
	T2L2	0	0	0	0	1	0	278	58	0	0	0	0	0	337
Total	T2L1	1	0	1	2	161	40	13816	2070	17	116	6	40	3	16273
	T2L2	1	0	3	1	40	17	6227	482	19	27	2	4	0	6823
Combined total		**2**	**0**	**4**	**3**	**201**	**57**	**20043**	**2552**	**36**	**143**	**8**	**44**	**3**	**23096**

Table 30. Summary of bat recording analysis, Statics T3L1 and T3L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T3L1	No access													
	T3L2	No access													
May	T3L1	0	0	0	0	1	1	1416	641	0	2	0	0	0	2061
	T3L2	0	0	0	0	0	12	3273	995	0	1	0	0	0	4281
June	T3L1	1	0	0	0	0	0	605	332	0	1	0	1	0	940
	T3L2	0	0	0	0	0	0	1030	1100	0	0	0	0	0	2130
July	T3L1	0	0	3	0	27	6	825	541	0	14	0	3	0	1419
	T3L2	0	0	0	0	12	0	4194	1221	2	29	0	1	1	5460
August	T3L1	0	1	1	0	8	1	1730	242	2	6	1	0	1	1993
	T3L2	0	0	0	0	0	0	3784	106	0	3	0	3	0	3896
September	T3L1	0	0	0	0	0	0	9	58	4	3	0	35	0	109
	T3L2	0	0	2	0	4	1	120	12	0	1	0	0	0	140
October	T3L1	0	0	0	0	0	16	450	389	0	22	0	45	0	922
	T3L2	No access													
Total	T3L1	1	1	4	0	36	24	5035	2203	6	48	1	84	1	7444
	T3L2	0	0	2	0	16	13	12401	3434	2	34	0	4	1	15907
Combined total		**1**	**1**	**6**	**0**	**52**	**37**	**17436**	**5637**	**8**	**82**	**1**	**88**	**2**	**23351**

Table 31. Summary of bat recording analysis, Statics T4L1 and T4L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T4L1	4	4	0	0	1	3	342	61	3	10	0	0	0	428
	T4L2	3	0	0	0	1	1	1168	304	0	54	0	0	0	1531
May	T4L1	1	0	0	0	0	8	418	127	0	0	1	1	0	556
	T4L2	0	0	0	0	0	5	1895	102	0	0	0	0	0	2002
June	T4L1	0	0	0	0	1	4	39	10	0	3	0	2	0	59
	T4L2	0	0	0	0	0	3	1975	134	0	9	0	5	0	2126
July	T4L1	0	0	0	0	6	6	260	57	0	0	0	2	0	331
	T4L2	0	0	0	0	2	0	61	26	0	0	0	0	0	89
August	T4L1	1	0	0	0	0	0	980	30	0	0	0	0	0	1011
	T4L2	4	1	1	1	310	0	400	154	15	13	5	1	1	906
September	T4L1	1	0	0	0	6	1	41	50	2	6	1	3	0	111
	T4L2	0	0	0	0	0	0	12	1	0	0	1	0	0	14
October	T4L1	1	0	0	0	0	0	1619	64	33	4	0	0	0	1721
	T4L2	0	0	0	0	0	1	4	2	0	0	0	0	0	7
Total	T4L1	8	4	0	0	14	22	3699	399	38	23	2	8	0	4217
	T4L2	7	1	1	1	313	10	5515	723	15	76	6	6	1	6675
Combined total		**15**	**5**	**1**	**1**	**327**	**32**	**9214**	**1122**	**53**	**99**	**8**	**14**	**1**	**10892**

Table 32. Summary of bat recording analysis, Statics T5L1 and T5L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T5L1	5	0	0	0	5	2	3755	624	3	79	0	1	0	4474
	T5L2	1	0	0	0	8	4	896	116	0	25	0	0	0	1050
May	T5L1	0	0	1	0	4	1	348	301	1	19	0	0	0	675
	T5L2	3	0	0	0	5	8	1737	536	2	2	0	2	0	2295
June	T5L1	1	0	0	0	4	18	1368	913	0	58	0	1	0	2363
	T5L2	2	0	0	0	3	4	526	273	2	9	0	3	0	822
July	T5L1	1	0	0	0	10	1	584	362	0	30	2	0	0	990
	T5L2	3	0	0	0	10	0	4324	352	2	38	1	2	0	4732
August	T5L1	1	0	3	0	31	0	3164	493	9	29	3	0	4	3737
	T5L2	2	0	0	0	0	1	7095	123	1	4	0	0	0	7226
September	T5L1	1	0	0	1	1	0	241	140	1	5	1	4	0	395
	T5L2	35	0	0	0	6	3	321	35	3	0	0	0	0	403
October	T5L1	0	0	0	0	0	0	222	405	0	3	0	0	0	630
	T5L2	2	0	0	0	0	0	649	76	0	0	0	0	0	727
Total	T5L1	9	0	4	1	55	22	9682	3238	14	223	6	6	4	13264
	T5L2	48	0	0	0	32	20	15548	1511	10	78	1	7	0	17255
Combined total		**57**	**0**	**4**	**1**	**87**	**42**	**25230**	**4749**	**24**	**301**	**7**	**13**	**4**	**30519**

Table 33. Summary of bat recording analysis, Statics T6L1 and T6L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T6L1	22	0	0	0	21	2	644	110	0	26	0	0	0	825
	T6L2	4	0	0	0	20	9	986	308	0	36	0	0	0	1363
May	T6L1	7	0	0	0	3	4	1535	171	21	13	0	0	0	1754
	T6L2	4	0	0	0	23	6	3458	769	2	17	0	0	0	4279
June	T6L1	1	0	0	0	0	17	456	116	3	16	0	1	0	610
	T6L2	2	0	0	0	0	1	356	147	1	31	0	2	0	540
July	T6L1	0	0	0	0	6	2	302	73	2	7	2	6	0	400
	T6L2	1	0	0	1	11	2	251	74	2	66	0	4	0	412
August	T6L1	16	0	1	1	15	1	1692	96	7	18	1	0	0	1848
	T6L2	6	1	2	2	33	0	1003	316	11	18	2	0	0	1394
September	T6L1	5	0	0	0	10	4	49	38	3	15	0	1	0	125
	T6L2	3	0	0	1	5	0	101	72	2	13	5	3	0	205
October	T6L1	8	0	2	0	2	0	24	18	0	17	0	0	0	71
	T6L2	17	0	0	0	3	0	127	36	8	2	2	0	0	195
Total	T6L1	59	0	3	1	57	30	4702	622	36	112	3	8	0	5633
	T6L2	37	1	2	4	95	18	6282	1722	26	183	9	9	0	8388
Combined total		**96**	**1**	**5**	**5**	**152**	**48**	**10984**	**2344**	**62**	**295**	**122**	**17**	**0**	**14021**

Table 34. Summary of bat recording analysis, Statics T7L1 and T7L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T7L1	No access													
	T7L2	No access													
May	T7L1	0	0	0	0	7	0	2301	216	1	1	0	0	0	2526
	T7L2	Static detector corrupted and did not record.													
June	T7L1	3	0	0	0	6	1	93	13	3	1	0	0	0	120
	T7L2	3	0	0	0	4	4	2652	160	1	8	0	7	0	2839
July	T7L1	2	0	0	0	16	3	2667	100	1	12	1	7	2	2811
	T7L2	26	0	1	0	12	1	2494	127	4	23	5	29	0	2722
August	T7L1	3	3	1	0	13	0	2141	128	0	27	2	0	0	2318
	T7L2	18	0	1	0	13	0	1487	201	1	1	0	0	2	1724
September	T7L1	0	0	0	0	5	3	49	0	0	1	0	0	0	58
	T7L2	2	0	0	2	6	3	1304	87	3	13	0	0	0	1420
October	T7L1	5	0	0	0	0	0	101	66	2	5	0	0	0	179
	T7L2	2	0	1	0	7	2	176	95	2	2	0	0	0	287
Total	T7L1	13	3	1	0	47	7	7352	523	7	47	3	7	2	8012
	T7L2	51	0	3	2	42	10	8113	670	11	47	5	36	2	8992
Combined total		**64**	**3**	**4**	**2**	**89**	**17**	**15465**	**1193**	**18**	**94**	**8**	**43**	**4**	**17004**

Table 35. Summary of bat recording analysis, Statics T8L1 and T8L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T8L1	5	0	0	0	12	7	940	143	3	12	0	0	0	1122
	T8L2	11	0	0	0	17	1	46	51	0	30	0	0	0	156
May	T8L1	1	0	0	0	2	7	1311	174	1	3	0	0	0	1499
	T8L2	3	0	0	0	7	10	2957	612	0	21	0	0	0	3610
June	T8L1	0	0	0	0	8	0	478	100	0	11	0	1	1	599
	T8L2	1	0	0	0	0	0	103	14	3	3	0	0	0	124
July	T8L1	3	0	0	0	24	4	555	340	0	74	1	4	1	1006
	T8L2	0	0	0	0	14	5	783	118	0	9	0	4	0	933
August	T8L1	1	0	0	0	26	0	896	149	3	0	0	0	0	1075
	T8L2	1	1	0	0	15	0	854	461	3	18	1	1	0	1355
September	T8L1	1	0	0	0	4	1	126	60	0	0	0	1	0	193
	T8L2	5	0	0	0	5	3	259	325	0	8	1	10	0	616
October	T8L1	6	0	0	0	4	0	2917	412	0	8	0	0	0	3347
	T8L2	3	0	0	0	5	1	645	39	2	1	0	0	0	696
Total	T8L1	17	0	0	0	80	19	7223	1378	7	108	1	6	2	8841
	T8L2	24	1	0	0	63	20	5647	1620	8	90	2	15	0	7490
Combined total		**41**	**1**	**0**	**0**	**143**	**39**	**12870**	**2998**	**15**	**198**	**3**	**21**	**2**	**16331**

Table 36. Summary of bat recording analysis, Statics T9L1 and T9L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T9L1	10	0	0	0	49	1	740	408	5	31	0	0	0	1244
	T9L2	0	0	0	0	25	3	741	191	0	3	0	0	0	963
May	T9L1	20	0	0	0	3	4	2249	997	44	17	0	1	0	3335
	T9L2	1	0	0	0	2	11	3016	2905	0	1	1	1	0	5938
June	T9L1	0	0	0	0	1	10	75	53	0	1	0	3	0	143
	T9L2	0	0	0	0	2	12	379	19	0	0	0	0	0	412
July	T9L1	0	0	0	0	16	0	583	411	0	6	0	6	0	1022
	T9L2	0	0	0	0	10	16	1360	181	0	1	0	0	0	1568
August	T9L1	4	0	0	0	18	1	873	259	2	10	0	2	0	1169
	T9L2	1	0	0	0	6	0	4722	132	0	1	0	2	0	4864
September	T9L1	1	0	0	0	1	2	109	43	7	0	0	0	0	163
	T9L2	1	0	0	0	5	2	601	27	0	1	2	0	0	639
October	T9L1	19	0	0	0	0	0	989	1710	0	24	0	0	0	2744
	T9L2	0	0	0	0	12	0	55	33	2	1	1	0	0	102
Total	T9L1	54	0	0	0	88	18	5618	3881	60	89	0	12	0	9820
	T9L2	3	0	0	0	62	44	10874	3488	0	8	4	3	0	14486
Combined total		**57**	**0**	**0**	**0**	**150**	**62**	**16492**	**7369**	**60**	**97**	**4**	**15**	**0**	**24306**

Table 37. Summary of bat recording analysis, Statics T10L1 and T10L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T10L1	2	0	0	0	3	7	343	96	0	1	0	0	0	452
	T10L2	5	0	0	0	17	14	1986	581	9	91	0	0	0	2703
May	T10L1	11	0	0	0	0	0	166	41	1	0	0	0	0	219
	T10L2	2	0	0	0	5	27	6547	1534	3	6	0	0	0	8124
June	T10L1	1	0	0	0	4	12	91	23	0	0	0	5	0	136
	T10L2	2	0	0	0	5	6	360	109	15	6	0	14	0	517
July	T10L1	1	0	0	0	5	3	156	86	1	8	1	10	1	272
	T10L2	0	0	0	0	31	12	734	166	19	18	2	8	0	990
August	T10L1	13	0	0	1	39	0	240	2038	4	12	1	18	2	2368
	T10L2	4	0	2	0	38	1	491	75	8	5	1	1	2	628
September	T10L1	1	0	0	0	1	1	11	2	1	2	0	0	0	19
	T10L2	1	0	0	0	2	2	3	1	0	1	0	2	0	12
October	T10L1	2	0	0	0	2	0	63	17	4	1	0	0	0	83
	T10L2	1	0	0	0	5	0	57	84	3	14	1	0	0	171
Total	T10L1	31	0	0	1	54	23	1064	2303	11	24	2	33	3	3549
	T10L2	15	0	2	0	103	62	10184	2550	57	141	4	25	2	13145
Combined total		**46**	**0**	**2**	**1**	**157**	**85**	**11248**	**4853**	**68**	**165**	**6**	**58**	**5**	**16694**

Table 38. Summary of bat recording analysis, Statics T11L1 and T11L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T11L1	0	0	0	0	19	11	1788	293	1	9	0	2	0	2123
	T11L2	1	0	0	0	5	13	1284	968	11	5	0	3	0	2290
May	T11L1	0	0	0	0	0	11	2922	498	8	18	0	0	0	3457
	T11L2	0	0	0	0	5	22	1490	424	8	13	0	1	0	1963
June	T11L1	0	0	0	0	5	36	343	74	0	3	0	12	0	473
	T11L2	Static detector corrupted and did not record.													
July	T11L1	0	0	0	0	31	6	217	1359	0	42	0	29	0	1684
	T11L2	0	0	0	0	4	2	238	44	1	0	0	1	0	290
August	T11L1	6	0	0	2	196	29	1103	1158	4	163	0	47	1	2709
	T11L2	1	0	0	0	72	0	1053	189	17	8	0	13	0	1353
September	T11L1	0	2	2	0	36	1	35	88	0	23	0	1	0	188
	T11L2	0	0	0	0	3	0	65	19	3	1	0	0	0	91
October	T11L1	1	0	0	0	0	2	9	15	3	0	0	0	0	30
	T11L2	0	0	0	0	0	0	30	0	0	1	0	0	0	31
Total	T11L1	7	2	0	2	287	96	6417	3485	16	258	0	91	1	10664
	T11L2	2	0	2	0	89	37	4160	1644	40	28	0	18	0	6018
Combined total		**7**	**2**	**2**	**2**	**376**	**133**	**10577**	**5129**	**56**	**286**	**0**	**109**	**1**	**16682**

Table 39. Summary of bat recording analysis, Statics T12L1 and T12L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T12L1	5	0	0	0	2	4	136	12	0	8	0	0	0	167
	T12L2	2	0	0	0	0	3	1395	1879	0	0	0	0	0	3279
May	T12L1	1	0	0	0	2	11	814	43	0	4	0	0	0	875
	T12L2	0	0	0	0	0	117	2514	4358	0	0	0	0	0	6989
June	T12L1	0	0	1	1	0	37	202	38	0	1	0	0	0	280
	T12L2	0	0	0	0	2	5	483	630	0	1	0	13	0	1134
July	T12L1	0	0	0	0	2	2	544	586	2	1	0	0	0	1137
	T12L2	0	0	0	0	1	2	251	1781	2	1	0	4	0	2042
August	T12L1	3	0	0	0	15	0	1328	238	3	9	0	18	0	1614
	T12L2	2	0	2	0	15	0	1065	508	5	7	1	81	1	1687
September	T12L1	2	0	0	0	0	5	176	26	1	5	0	0	0	215
	T12L2	2	0	0	2	4	7	479	422	4	119	0	16	0	1055
October	T12L1	2	0	0	0	0	0	15	6	2	1	2	0	0	43
	T12L2	17	0	0	0	1	0	50	27	0	4	1	0	0	85
Total	T12L1	8	0	1	1	21	59	3215	949	8	29	2	18	0	4331
	T12L2	28	0	2	2	23	134	6237	9605	11	132	2	114	1	16271
Combined total		**36**	**0**	**3**	**3**	**44**	**193**	**9452**	**10554**	**19**	**161**	**4**	**132**	**1**	**20602**

Table 40. Summary of bat recording analysis, Statics T13L1 and T13L2.

Month	Static	Bat Species Recordings													Total Bats Recorded
		B.bar	E.ser	N.lei	E.ser/ N.lei	N.noc	P.nat	P.pip	P.pyg	P.aur	*Myo. sp.*	*Nyc. sp.*	*Pip. sp.*	Bat sp.	
April	T13L1	15	0	0	0	1	16	293	55	0	11	0	0	0	391
	T13L2	26	0	0	0	1	10	1044	62	12	3	0	0	0	1158
May	T13L1	17	0	19	0	97	9	183	53	0	2	0	0	0	380
	T13L2	10	0	0	1	0	24	2179	121	6	5	0	0	0	2346
June	T13L1	2	0	0	0	0	1	87	36	0	4	0	0	0	130
	T13L2	4	0	0	0	0	12	104	29	0	1	0	2	0	152
July	T13L1	9	0	0	0	0	0	330	63	2	4	0	5	0	413
	T13L2	2	0	0	0	5	11	1363	3814	1	600	0	136	1	5933
August	T13L1	3	0	2	0	13	0	3933	5849	9	19	1	1260	0	11089
	T13L2	1	0	0	0	0	0	2368	6048	7	51	0	28	3	8506
September	T13L1	0	0	0	0	0	0	158	296	1	5	0	16	0	476
	T13L2	0	0	0	0	1	0	45	217	3	3	1	21	0	290
October	T13L1	3	0	0	0	1	1	189	146	2	23	1	0	0	365
	T13L2	21	0	0	0	1	1	172	111	1	288	1	0	0	595
Total	T13L1	49	0	21	1	112	27	5173	6498	14	68	112	1281	0	13244
	T13L2	64	0	0	0	8	58	7275	10402	30	951	8	187	4	18980
Combined total		**113**	**0**	**21**	**1**	**120**	**85**	**12448**	**16900**	**44**	**1019**	**120**	**1468**	**4**	**32224**

A comparison of bat calls analysed from transect and static survey data is provided in Tables 41 and 42.

Table 41. Combined total counts for bat species for transect and static detector surveys, 2022.

Bat species	Total recordings from transects (Apr-Oct)	% of total calls recorded from transects (Apr-Oct)	Total recordings from statics (Apr-Oct)	% of total calls recorded from statics (Apr-Oct)
B.bar	34	0.84	573	0.21
E.ser	4	0.10	18	0.01
N.lei	7	0.17	56	0.02
E.ser /N.lei	11	0.27	25	0.01
N.noc	113	2.79	2442	0.91
P.nat	4	0.10	946	0.35
P.pip	2929	72.41	186154	69.39
P.pyg	822	20.32	70742	26.37
P.aur	18	0.44	545	0.20
Myotis sp.	59	1.46	3404	1.27
Nyctalus sp.	0	0	190	0.07
Pipistrellus sp.	44	1.10	3134	1.17
Bat sp.	0	0	30	0.01

Table 42. Summary of species record locations (Transects T1-13) from combined static and transect surveys (T = recorded on transect; S = recorded on static detector).

Bat species	Location of species records												
	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
B.bar	T, S	S	S	T, S	T, S	T, S	T, S	T, S	S	T, S	S	S	T, S
E.ser	S	N/A	S	T, S	N/A	S	S	S	N/A	N/A	S	T	N/A
N.lei	S	S	S	S	S	T, S	S	N/A	N/A	S	S	S	S
E.ser /N.lei	S	S	N/A	S	S	T, S	S	N/A	N/A	S	S	T, S	S
N.noc	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	S
P.nat	S	T, S	T, S	S	S	S	S	S	S	S	S	T, S	S
P.pip	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S
P.pyg	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S	T, S
P.aur	S	T, S	T, S	S	T, S	T, S	T, S	T, S	S	T, S	S	S	S
Myotis sp.	T, S	S	T, S	T, S	T, S	T, S	T, S	T, S	S	S	T, S	T, S	T, S
Nyctalus sp.	S	S	S	S	S	S	S	S	S	S	N/A	S	S
Pipistrellus sp.	T, S	S	T, S	T, S	T, S	S	S	T, S	S	T, S	T, S	T, S	S
Bat sp.	S	S	S	S	S	N/A	S	S	N/A	S	S	S	S

4. CONCLUSION

The most frequently recorded bat species was common pipistrelle (72% of all calls recorded on transect and 69% of all calls recorded on static detectors), followed by soprano pipistrelle.

The highest number of bat recordings were made along Transect 5 (total 527), followed by Transect 11 (496). Both transects covered good habitat for bats, including woodland along Tendring Brook and two large lakes near Thorpe-le Soken.

In contrast, the fewest number of bat calls were recorded along Transect 10 (total 75), despite having access granted for all eight surveys. This transect covered arable land adjacent to a recently developed housing estate.

Common pipistrelle bats were the most frequently recorded during transect surveys, with Transect 5 having the peak total of 397 recordings over the season, although the highest peak for any one month was 195 recordings during May along Transect 8.

The Annex II species Barbastelle bat was recorded on all of the 13 transects by static bat detectors, and on eight of these during transect surveys (positive call identification on transects 1, 4, 5, 6, 7, 8, 10 and 13). The highest number of barbastelle recordings from either survey method were captured along Transect 13.

No bat emergence or re-entry into a roost was observed during any of the transect surveys.

5. REFERENCES

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

Royal HaskoningDHV, (2022) North Falls Extended Phase 1 Habitat Survey Report.

APPENDIX A: Transect and Static Detector Locations – Figures 1.1-1.10

LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 13

BAT TRANSECT AND STATIC DETECTOR LOCATIONS FIGURE 1.1

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES

LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 12

BAT TRANSECT AND STATIC DETECTOR LOCATIONS
FIGURE 1.2

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES

LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 9
- Transect 10
- Transect 11

BAT TRANSECT AND STATIC DETECTOR LOCATIONS FIGURE 1.3

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES

LEGEND

- Onshore project area plus 50m
- Incidental Trees - Negligible

BAT TREES: INCIDENTAL FINDS AND UPGRADED CLASSIFICATIONS
FIGURE 1.4

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
10.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES

LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 6
- Transect 7
- Transect 8
- Transect 9

BAT TRANSECT AND STATIC DETECTOR LOCATIONS FIGURE 1.5

PROJECT TITLE:
North Falls Offshore Wind Farm

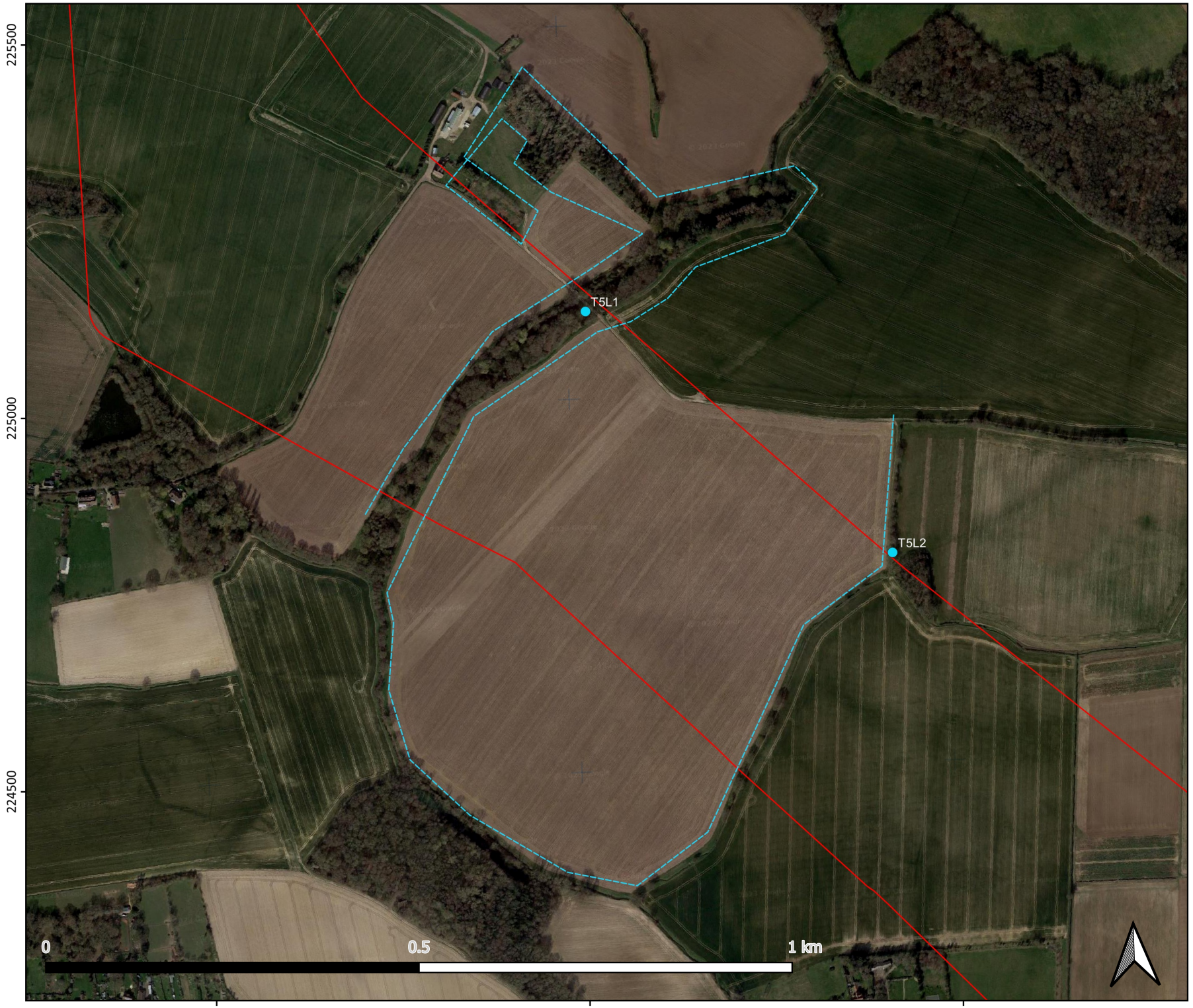
CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES



LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 5

BAT TRANSECT AND STATIC DETECTOR LOCATIONS
FIGURE 1.6

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES

LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 4

BAT TRANSECT AND STATIC DETECTOR LOCATIONS
FIGURE 1.7

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES

LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 2

BAT TRANSECT AND STATIC DETECTOR LOCATIONS
FIGURE 1.8

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES

LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 1

BAT TRANSECT AND STATIC DETECTOR LOCATIONS FIGURE 1.9

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES

LEGEND

- Onshore project area plus 50m
- Static detectors
- Transect 3

BAT TRANSECT AND STATIC DETECTOR LOCATIONS
FIGURE 1.10

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
11.01.2023

PRODUCED BY:
J. McMahon

REF: 22042

ECOLOGY RESOURCES