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# **Bat Activity Surveys**

# Phase 1 Spine Road Pre Commencement Activity Surveys

## **Northern Quarter**

# Cinderford

## Daniel Whitby 2015

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## 1 Introduction

- 1.1 AEWC Ltd. was commissioned by the Forest of Dean District Council to conduct activity surveys on the Northern Quarter site during August and September 2015 to identify current bat activity in specific areas of the site prior to the commencement of development (P0663/14/OUT).
- 1.2 Extensive bat surveys have been undertaken in 2011-2014 to support planning application at the Northern Quarter. These pre commencement surveys provide additional updated baseline information to support future post development monitoring.
- 1.3 The objective of the fixed point surveys were to gain an understanding of level of use by LHB of two bat flightlines, which will be crossed by a new road, by phase 1 of the development. Phase one of the development described simply is the construct of a new road from Newtown Road West to Cinderford and the construction of a new College Campus.
- 1.4 The objective of the static logger surveys was to gain an understanding of the level of use of a conifer woodland area prior to its felling for biodiversity enhancement works which form part of the Northern Quarter development.
- 1.5 This report provides the results of the Fixed Point count surveys and static logger surveys conducted on site over August and September 2015.

### 2 Method

#### Fixed point counts

- 2.1.1 The dusk fixed point count surveys commenced from sunset and continued for two hours. The surveyors remained in the same location during the surveys and were in the same location for each repeated survey. See plan 1 and 2.
- 2.1.2 There are two linier features within the proposed phase 1 area of works that are considered to have potential to be used as commuting routes. No 1 is a woodland strip along a brook referred to as Cinderford brook. This is a fairly wide woodland strip running from the fishing lake North east to the northern area of Cinderford and Steam Mills road.
- 2.1.3 This woodland strip is at places over 50m wide, the monitoring location selected is the narrowest area of the potential commuting route close to the new road crossing point. Three surveyors (1A, 1B and 1C See plan 1) were used to cover this wider corridor to ensure that bats commuting through the middle would be recorded as well as bats commuting along the edge, a common behaviour of commuting lesser horseshoe bats.

2.1.4 The second crossing point is along Old Engine Brook which is a much narrower vegetation strip along an old brook, this narrows to 10m wide close to the new road crossing point and can therefore be fully surveyed by one surveyor (2 – See plan 1).



Plan 1 – showing locations of all fixed point counts.



Plan 2 – showing the approximate three surveyor positions at location 1

- 2.1.5 All surveyors used an Elekon Batlogger time expansion detector with a professional night vision camera (Cannon XA20) with the assistance of an infrared illuminator and Dictaphone for recording notes and visual observations.
- 2.1.6 The surveyors were asked to record detailed field observations to assist with identification of bats (e.g. size and shape); and also on behaviour including if the bat

was foraging or commuting, height and direction of flight. For all surveys and survey locations the height was taken from the lowest point of the terrain, in this case the height of the water in the brook, not the height of the bat above ground level. The height of the bat was recorded as the lowest point it was observed, this was identified by surveyors previously identifying the heights of nearby features such as hedges, trees and telegraph poles.

- 2.1.7 Bat detector recordings were analysed on BatExplorer for species confirmation or identification. The identification of recorded bat calls was carried out using data from known bat roosts, for some species, as well as stock recordings from other bat workers and Guides such as John Russ's book "The bats of Britain and Ireland" (Russ 1999), and others, were also used to help confirm some of the species.
- 2.1.8 In general, bat calls were narrowed down to the species level. However, with species which may be difficult to separate (e.g. the myotis bats), and the big bats (the Noctule bat Leisler's bat and the Serotine) some calls could only be classified to the nearest "complex". A "complex" could, for example, be made up of the three big bat species mentioned above which, depending on the situation they are found in, may have very similar echolocation calls. This is standard practice in such circumstances.

#### 2.2 Static loggers

- 2.2.1 All static logger detector surveys were conducted once per month at 6 nearby locations with the aim of collecting at least 5 nights' data for one area of woodland proposed to be affected.
- 2.2.2 For consistency all surveys were conducted with Song Meter SM2 bat detectors, different detectors have different detectability both in sensitivity and directionality of microphone, by conducting all surveys with the same detector all surveys are consistent. All SM2 loggers were programmed with the same settings for sensitivity and recordings.
- 2.2.3 The location of static detectors deployed was consistent with the same tree used for mounding the detector each month.
- 2.2.4 Weather data for each survey event has been provided in Table A1 in Annex A. This weather data has been sourced from the weather station at Littledean Hill, Cinderford, approximately 3km southwest of the Northern Quarter Site.



Plan 2 – showing location of 6 SM2 static loggers

#### 2.3 Data Analysis

- 2.3.1 Recorded bat passes were downloaded to a computer for analysis, and analysed using AnalookW Version 3.8s and Batsound 4. The SM2BAT+ data was converted using the Kaleidoscope programme and subsequently analysed both in ZCA and WAV format.
- 2.3.2 The identification of recorded bat calls was carried out using data from known bat roosts, for some species, as well as stock recordings from other bat workers (particularly those held by Stephanie Murphy). Guides such as John Russ's book "The bats of Britain and Ireland" (Russ 1999), and others, were also used to help confirm some of the species. All bat calls were initially analysed in Analook using the parameters and categories listed below in Table 1 and Table 2. Calls which were subjective in Analook were subsequently checked in Batsound. The use of Batsound software enables the call to be time expanded and measurements of key elements of the call, such as peak frequency and duration can be made, which facilitates the identification process.
- 3.4.1 In general, bat calls were narrowed down to the species level. However, with species which may be difficult to separate (e.g. the myotid bats), and the big bats (the Noctule bat (*Nyctalus noctula*), Leisler's bat (*N. leisleri*) and the Serotine (*Eptesicus serotinus*), some calls could only be classified to the nearest "complex". A "complex" could, for example, be made up of the three big bat species mentioned above which, depending on the situation they are found in, may have very similar echolocation

calls, as such for the tables all three big bats were grouped together. This is standard practice in such circumstances. Please see Tables 2 and 3 for parameters and categories.

#### Table 2: Parameters

Species	Peak frequency
Common pipistrelle	≥42 and <49 kHz
Soprano pipistrellus	≥51 kHz
Nathusius' pipistrelle	<39 kHz
Pipistrelle Sp	≥49 and <51 kHz

## 3 Results

#### Fixed point counts

- 3.1 Fixed point counts were conducted on the 24<sup>th</sup>, 27<sup>th</sup> and 31<sup>st</sup> August and 3<sup>rd</sup>, 7<sup>th</sup> and 11<sup>th</sup> September 2015.
- 3.2 Table 1 shows the results of the fixed point counts where bats were observed commuting past a surveyor, in many cases bats were present foraging, often for extended periods and these bats have not been counted. However, it is often difficult to accurately identify if a bat is commuting or foraging especially if doing so over a large area, therefore it is likely that a number of bats counted commuting may be foraging in the area and hence be counted more than once.
- 3.3 Bat recorded or observed have been broken into 4 groups, Lesser Horseshoe bats (LHB) Pipistrelle species (Pip sp) Myotis bats and Brown Long-eared bats (Myotis/P.a and all other bats.

	24/08/2015				27/08/2015					31/0	8/2015	
Location	LHB	Pip sp	Myotis/P.a	Other	LHB	Pip sp	Myotis/P.a	Other	LHB	Pip sp	Myotis/P.a	Other
1A	2	5	8	4	0	7	4	0	1	4	5	4
1B	0	11	6	0	0	11	2	2	0	5	2	0
1C	1	4	6	3	2	7	4	1	1	4	2	3
2	1	4	4	0	1	5	1	2	2	10	4	3

Table 1 – showing number of bat passes for the 6 fixed point counts

	03/09/2015				07/09/2015				11/0	9/2015		
Location	LHB	Pip sp	Myotis/P.a	Other	LHB	Pip sp	Myotis/P.a	Other	LHB	Pip sp	Myotis/P.a	Other
1A	4	8	4	6	1	13	2	4	1	18	2	2
1B	0	7	2	1	0	10	5	2	1	14	2	4
1C	5	7	4	2	0	9	6	2	1	7	3	2
2	4	7	2	1	0	3	2	0	3	7	1	3

- 3.4 The fixed point counts recorded a total of 282 bat passes for location 1 for all three surveyor locations over all 6 surveys, an average of 47 bat passes per survey for all species and only 3.3 for lesser horseshoe, averaging only 1.1 per surveyor per survey. This total included bats that were heard and one's that were not detected but seen on night vision cameras.
- 3.5 For location 2 there was a total of 70 bat passes, an average of only 11.6 per survey for all species and an average of only 1.8 lesser horseshoes per survey.

#### Static loggers

- 3.6 The 6 static logger surveys ran for a minimum of 5 nights in August and September with many loggers lasting longer than the minimum 5 nights collecting additional data from the site. One static logger, number 6, was identified as failing, believed to have been the result of a damaged microphone while erected on site.
- 3.7 The 5 remaining loggers have collected 157Gb of data equating to over 70,000 files with a very high number of these being analysed as noise files. The remaining files totalled 28,915, this included all species identified calls and calls not identified.
- 3.8 The total number of calls recorded for each species each month, as well as monthly and species totals and averages of all recordings from all static logger recordings from August and September are shown in Tables 2 to 4. A breakdown for each species is shown in Annex 3

Table 2 – Showing total number of files for each species each month, species and monthly total and average night each month.

Species	August	September	Total	Percentage
P.pip	14732	6712	21444	74.16
P.pyg	299	203	502	1.74
P.nat	1	6	7	0.02
Pip sp	2	0	2	0.01
Myotis	67	48	115	0.40
Noctule	4	4	8	0.03
Leisler's	1	1	2	0.01
Serotine	0	0	0	0.00
LE	17	21	38	0.13
B.barb	9	62	71	0.25
LHB	21	12	33	0.11
GHB	1	2	3	0.01
Unidentified	4660	2030	6690	23.14
Total calls	19814	9101	28915	
Total detector nights	32	29		-
Average per night	619.2	313.8		

Table 3 – Showing total number of minutes of activity for each species each month, species and monthly total and average night each month.

Species	August	September	Total	Percentage
P.pip	4490	2208	6698	58.91
P.pyg	213	156	369	3.25
P.nat	1	6	7	0.06
Pip sp	2	0	2	0.02
Myotis	64	45	109	0.96
Noctule	4	4	8	0.07
Leisler's	4	4	8	0.07
Serotine	0	0	0	0.00
LE	12	17	29	0.26
B.barb	9	55	64	0.56
LHB	20	12	32	0.28
GHB	1	2	3	0.03
Unidentified	2628	1412	4040	35.54
Total minutes	7448	3921	11369	
Total detector nights	32	29		
Average per night	232.8	135.2		

Table 4 – Showing the average number of minutes and files for each species, month and SM2 location.

	P.pip P.pyg P.nat Pip. sp Myotis .n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	Aug Average Min Per Night 70.7 9.2 0 0 2.8 0.2 0.7 0 0.3 0 0 83.9 167.2	Average No Files Per Night 116.5 11 0 2.8 0.2 0.7 0 0.3 0 131.5	Average Min Per Night 7 3.3 0 0 1.2 0 1.2 0 1.3 0 0.3 0 0.3 0	ember   Average   No Files   Per Night   9.7   3.8   0   0   1.2   0   2   0   0.3
	P.pyg P.nat Pip. sp Myotis .n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	Min Per Night 70.7 9.2 0 0 2.8 0.2 0.7 0 0.3 0 83.9 167.2	No Files Per Night 116.5 11 0 2.8 0.2 0.7 0 0.3 0 131.5	Min Per Night 7 3.3 0 0 1.2 0 1.2 0 1.3 0 0.3 0 0.3 0	No Files Per Night 9.7 3.8 0 0 1.2 0 2 0 2 0 0 0.3
	P.pyg P.nat Pip. sp Myotis .n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	Night 70.7 9.2 0 0 2.8 0.2 0.7 0 0.3 0 83.9 167.2	Per Night 116.5 11 0 2.8 0.2 0.7 0 0.3 0 131.5	Night 7 3.3 0 0 1.2 0 1.3 0 1.3 0 0.3 0	No Files Per Night 9.7 3.8 0 0 1.2 0 2 0 2 0 0 0.3
	P.pyg P.nat Pip. sp Myotis .n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	70.7 9.2 0 2.8 0.2 0.7 0 0.3 0 83.9 167.2	116.5 11 0 2.8 0.2 0.7 0 0.3 0 131.5	7 3.3 0 0 1.2 0 1.3 0 0 0.3 0	9.7 3.8 0 1.2 0 2 0 0.3
	P.pyg P.nat Pip. sp Myotis .n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	70.7 9.2 0 2.8 0.2 0.7 0 0.3 0 83.9 167.2	116.5 11 0 2.8 0.2 0.7 0 0.3 0 131.5	7 3.3 0 0 1.2 0 1.3 0 0 0.3 0	9.7 3.8 0 1.2 0 2 0 0.3
	P.pyg P.nat Pip. sp Myotis .n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	9.2 0 2.8 0.2 0.7 0 0.3 0 83.9 167.2	11 0 2.8 0.2 0.7 0 0.3 0 131.5	3.3 0 0 1.2 0 1.3 0 0.3 0	3.8 0 1.2 0 2 0 0.3
	P.nat Pip. sp Myotis .n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	0 0 2.8 0.2 0.7 0 0.3 0 83.9 167.2	0 0 2.8 0.2 0.7 0 0.3 0 131.5	0 0 1.2 0 1.3 0 0.3 0	0 0 1.2 0 2 0 0.3
	Pip. sp Myotis .n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	0 2.8 0.2 0.7 0 0.3 0 83.9 167.2	0 2.8 0.2 0.7 0 0.3 0 131.5	0 1.2 0 1.3 0 0.3 0	0 1.2 0 2 0 0.3
	Myotis n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	2.8 0.2 0.7 0 0.3 0 83.9 167.2	2.8 0.2 0.7 0 0.3 0 131.5	1.2 0 1.3 0 0.3 0	1.2 0 2 0 0.3
	n, N.I, E.s P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	0.2 0.7 0 0.3 0 83.9 167.2	0.2 0.7 0 0.3 0 131.5	0 1.3 0 0.3 0	0 2 0 0.3
	P.aur B.bar LHB GHB Total P.pip P.pyg P.nat	0.7 0 0.3 0 83.9 167.2	0.7 0 0.3 0 131.5	1.3 0 0.3 0	2 0 0.3
Location 2 N	B.bar LHB GHB Total P.pip P.pyg P.nat	0 0.3 0 83.9 167.2	0 0.3 0 131.5	0 0.3 0	0 0.3
Location 2 N	LHB GHB Total P.pip P.pyg P.nat	0.3 0 83.9 167.2	0.3 0 131.5	0.3 0	0.3
Location 2	GHB Total P.pip P.pyg P.nat	0 83.9 167.2	0 131.5	0	
Location 2	Total P.pip P.pyg P.nat	83.9 167.2	131.5	-	
Location 2	P.pip P.pyg P.nat	167.2			0
Location 2 N	P.pyg P.nat			13.1	17
Location 2	P.nat		406.2	203.6	634.3
Location 2		1	1	6.7	9
Location 2	D'	0.2	0.2	0.9	0.9
Location 2 N	Pip. sp	0	0	0	0
Location 2 N	Myotis	4.2	4.5	3.9	4.3
	.n, N.I, E.s	0.3	0.3	0.7	0.7
	P.aur	0.5	0.5	1	1
	B.bar	1.2	1.2	7.9	8.9
	LHB	0.2	0.2	0.1	0.1
	GHB	0	0	0.3	0.3
	Total	174.8	414.1	225.1	659.5
	P.pip	322.7	1476	92	324.8
	P.pyg	7.1	14.1	4.5	7.3
	P.nat	0	0	0	0
	Pip. sp	0	0	0	0
	Myotis	0.9	0.9	0.3	0.3
Location 3 N	.n, N.I, E.s	0.3	0.3	0.2	0.2
	P.aur	0	0	0.2	0.2
	B.bar	0.1	0.1	0.2	0.2
	LHB	1.1	1.3	0.5	0.5
	GHB	0.1	0.1	0.5	0.5
	Total	332.3	1492.8	97.7	333.3
	P.pip	14	1452.0	5.7	5.8
		5.7	5.7	5.7	5.8 6
	P.pyg P.nat	0	0	0	0
-	Pip. sp	0	0	0	0
	Myotis	1	1	1.5	1.5
Location 4 N	.n, N.I, E.s	0	0	0	0
				0.2	0.2
-	P.aur R.bar	0	0		
-	B.bar	0.2	0.2	0	0
-			1	0.5	0.5
	GHB	0	0	0	0
	Total	21.9	24.2	13.6	14
	P.pip	102.9	166.6	38.8	57.5
	P.pyg	9.7	13.4	7	9.25
	P.nat	0	0	0	0
	Pip. sp	0.3	0.3	0	0
	Myotis	1.4	1.6	0	0
Location 5 N	.n, N.I, E.s	0	0	0	0
	P.aur	0.7	0.7	0	0
	B.bar	0	0	0	0
	LHB	0.4	0.4	0.75	0.75
	GHB	0	0	0	0
	Total	115.4	183	46.55	67.5

## 4 Constraints/Limitations

- 4.1 The bat numbers on the site fluctuate notably, not only throughout the seasons but can change notably from one month to the next, each survey only acts as a snapshot in time and gives an indication of the numbers of bats using the site, however, numbers present may fluctuate daily with changes in weather, roost location and bats moving to other sites/foraging areas.
- 4.2 Bats are known to commute and forage over the site, given individuals large foraging areas and limited view of surveyors it is often, especially in woodland settings, not possible to identify accurately if a bat is foraging or commuting. Bats can commonly forage continuously along linear features and so foraging individuals may be counted as commuting when they are foraging and may be counted more than once.
- 4.3 Previous research on the site has shown that individuals can return to the roost quickly after emerging, sometimes within the hour, therefore individuals may be counted returning as well as leaving during surveys.

## 5 Discussion

- 6.1 The surveys conducted in August and September are considered a thorough representation of bat activity during this time, although surveys were limited to these months this is a time when juveniles are Volant and active as much as adults and represents a peak in time with the highest numbers of bats present throughout the site.
- 6.2 The fixed point counts were consistent with the previous fixed point counts that were conducted at similar locations in 2013 (See table 2) where only low numbers of bats were identified present, especially lesser horseshoe bats.
- 6.3 The 2015 surveys have identified slightly higher survey results than in 2013, however, this is due to having a more concentrated survey effort with three surveyors covering potential flight line 1, it must also be considered that if bats were foraging up and down the linear woodland located at location 1 then these bats would be repeatedly counted incorrectly increasing the number of bats believed to be commuting along this route.

i		Location	LHB	Pip sp	Myotis	GHB
	29/05/2013	1	3	17	2	
	29/05/2013	2		8		
	20/06/2012	1		12	3	
	20/06/2013	2	1	8		1

Table 2 – Showing results of fixed point counts in May and June 2013

N.B-the 2013 survey locations in table 2 above are along the same flight lines but are not the exact same locations as the 2015 surveys.

- 6.4 The number of lesser horseshoe bats identified crossing both location 1 and 2 in both 2013 and 2015 surveys are considered very low, this is especially when compared to other commuting routes identified across the site (Reference AEWC report Bat survey Northern Quarter 2013). Location 1 using 3 surveyors has had a peak of 9 lesser horseshoe bats on one occasion and an average of 3.3 bats per survey, however there are 4 other locations across the site and outside the development area in the 2013 surveys that had 10 or more lesser horseshoe bats recorded commuting with peaks of 72 individual lesser horseshoe bats alone in 2013 at one location crossing a main road. The main commuting routes have over 20 times the number of lesser horseshoe bats identified commuting than identified at this location.
- 6.5 The static logger surveys have recorded very similar results to the 2013 surveys. The presence of the following species has been confirmed or most likely present (for more cryptic species) from the static surveys at the site during August and September.
  - Common pipistrelle
  - Soprano pipistrelle
  - Nathusius' pipistrelle

•Myotis species - Note that it has not been possible to confidently assign bats within the Myotis complex to species level due to the similarity of their echolocation calls and known overlap between recorded characteristics currently available to separate the species; •Noctule

- •Leisler's
- •Lesser Horseshoe bat
- •Greater horseshoe bat
- •Brown long-eared bat
- Barbastelle bat
- 5.1 One of the static loggers failed during the monitoring on the site, however, given the high concentration of loggers present within such a small area this is highly unlikely to have affected the overall results and it is not considered that that given this was close to the other loggers the results of this would have affected the proportions of species identified present.
- 6.6 The only species recorded in 2013 not recorded on this survey was Serotine, however this survey was only surveying a small area of the whole site. The proportion of species recorded is similar to 2013 and shows that the vast majority of recordings are of Pipistrelle bats, mostly Common pipistrelle. Common and Soprano Pipistrelle bats made up 74% of all bat calls identified, a further 23% of the calls were not identified leaving all other species calls making up only 3% of all calls combined.
- 6.7 With a total of only 33 files Lesser horseshoe bats accounted for only 0.11% of all recordings demonstrating that with approximately only one thousandth of the total number of recordings activity for this species is considered to be low.
- 5.2 The static loggers recorded a very high number of recordings, these included a high number of noise files and Unidentified files, these are where the software identified this as most likely being a bat but cannot be identified, such as due to quietness of the recording. This high number of recordings, especially noise files, is largely due to the logger being set at a very sensitive level.
- 5.3 The Unidentified recordings are predominantly bat recordings, which could be of all species, but are commonly Common Pipistrelle, especially social calls. It is

considered less likely that these unidentified calls include a number of Lesser Horseshoe bats due to the distinctiveness of this species echolocation.

- 5.4 While all the Unidentified calls and Noise files have not been manually examined and identified to species level, which will contain a proportion of additional bat calls, the calls identified are considered to be an accurate proportional result of all the bat recordings for the site, these are generally similar to the recordings taken for the whole site in 2013, although these covered a wide area and different habitats which can show different species assemblages.
- 5.5 All of the 2015 surveys support the 2013 surveys in that the level of Lesser Horseshoe bat activity in much of this area is considered low, both the number of bat passes on the fixed point counts and the number of recordings on the static loggers for Lesser Horseshoe bats is low and does not indicate that there is high bats activity for this species present in these areas.

### Annex A – Weather Conditions

Weather conditions for surveys FPC – Fixed point count SM2 – static logger surveying

Date	Survey	Time of	Time of	Temperature (°C)		Rain Total (cm)	Wind Max (km/h)
Date	Survey	sunset	sunrise	At sunset	Min during night		wind wax (km/n)
24/8	FPC/SM2	20:15	06:09	12.6	9.8	0.3	11
25/8	SM2	20:12	06:11	13.3	8.6	0.1	13
26/8	SM2	20:10	06:12	13.7	10.8	1.7	26
27/8	FPC/SM2	20:08	06:14	12.9	10.6	0.6	18
28/8	SM2	20:06	06:16	13.9	10.1	0.3	18
29/8	SM2	20:04	06:17	15.0	11.8	0.0	13
30/8	SM2	20:01	06:19	13.9	13.0	0.2	13
31/8	FPC/SM2	19:59	06:20	12.1	10.8	1.0	18
3/9	FPC	19:52	06:25	10.6	7.3	0.0	13
7/9	FPC/SM2	19:43	06:32	13.9	7.2	0	11
8/9	SM2	19:41	06:33	11.5	8.6	0	16
9/9	SM2	19:39	06:35	14.1	9.1	0	21
10/9	SM2	19:36	06:37	16.4	9.9	0	18
11/9	FPC/SM2	19:34	06:38	15.8	10.4	0	21
12/9	SM2	19:32	06:40	11.7	9.2	0.6	18
13/9	SM2	19:29	06:41	12.6	9.1	0.05	18

#### <u>Annex B –</u>

Grid references of surveyors for fixed point counts

Grid references of SM2 static Loggers

Surveyor/Logger	Grid Reference
Surveyor – Position 1A	SO 64517 15531
Surveyor – Position 1B	SO 64530 15510
Surveyor – Position 1C	SO 64538 15494
Surveyor – Position 2	SO 64628 15381
Static Logger 1	SO 64272 15198
Static Logger 2	SO 64227 15156
Static Logger 3	SO 64268 15130
Static Logger 4	SO 64237 15043
Static Logger 5	SO 64308 15064
Static Logger 6	SO 64278 14989

SM2 settings



## Annex C – Survey data collected form Fixed Point Counts

Date24th AugustLocationFPC Location 1A

				Height	
Time	Species	Commuting	Foraging	(m)	Comments
20:44:38	P.pip	Ν		12	Bat was approx. 40m SW of surveyor
20:50:11	P.pip		Yes		Heard but not seen for 2 minutes
20:53:55	R.hip				Heard not seen
20:54:05	P.pyg	NE-SW		11	
20:54:08	P.pip		Yes		Heard not seen
20:54:23	P.pip				Heard not seen
21:00:00	P.pyg				Heard not seen
21:17:28	R.hip	NE-SW		9	
21:19:46	P.aur	SW-NE		8	
21:21:47	M.sp.				Heard not seen
21:28:20	N.noc				Heard not seen
21:28:59	M.sp.				Very feint, heard not seen
21:30:00	P.aur				Heard not seen
21:33:20	P.aur				Heard not seen
21:39:25	P.aur	SW-NE		7.5	
21:40:35	M.sp.	Yes			Close, heard not seen
21:41:22	M.sp.	SW-NE		8.5	
21:52:43	E.ser	Yes			Heard not seen
21:58:42	P.pip		Yes		Heard not seen
22:00:07	E.ser				Very feint, heard not seen
22:05:31	E.ser				Very feint, heard not seen
22:15:20	P.pip				Very feint, heard not seen

Date	24th August 2015
Location	FPC location 1B

				Height	
Time	Species	Commuting	Foraging	(m)	Comments
20:29:24	P.pyg	NE-SW		10m	
20:30:11	P.pyg		Yes-	12	
20:32:34	P.pyg		Yes-	8-13m	Foraging for over 5min in area
20:35:38	P.pyg	NE-SW		7	
20:37:21	P.pyg		Yes-	12	bat arrived from NE and foraging in clearing
20:38:00	P.pyg		Yes-		continuous foraging in area
20:40:24	P.pyg	NE-SW		10	
20:43:21	P.pip	NE-SW		10	SP still also foraging in area.
20:48:56	P.pyg	NE-SW		12	Still other bat foraging in area
20:51:37	P.pip		Yes-	10	
20:54:10	P.pyg				Heard but not seen
21:02:33	P.pyg				Heard but not seen
21:06:49	M.sp				very quiet - heard but not seen
21:26:13	M.sp				very quiet - heard but not seen
21:35:15	M.sp				Heard but not seen
21:37:18	M.sp				Heard but not seen
21:38:32	P.aur				Quiet -Heard but not seen
21:42:10	P.pip		Yes		not seen - feeding buzz
21:43:44	P.pip	NE-SW		10	
21:48:42	P.pip	NE-SW		6	
21:58:23	P.pip		Υ		Not seen - feeding for over 1 min in area
21:59:38	P.pip				pass over quickly - not seen
22:11:25	M.sp	NE-SW		6-8m	
22:15:21	P.pip		Υ		Not seen - foraging briefly

22.16.20	Dunin		0.00	fanasia	a in anon hafana maying off NC
22:16:30	P.pip	SW-NE	9m	IOraging	g in area before moving off NE

Date	24th August 2015		
Location	FPC Location 1C		

Time	Species	Commuting	Foraging	Height	Comments
20:30:43	P.pyg				Heard not seen
20:34:19	P.pip				Heard not seen
20:40:41	P.pyg		Y	12	Foraging over clearing
20:43:57	P.pyg	W-E	Y	11	
20:53:40	R.hip		Y	6.5	Foraging SE of surveyor position
21:02:58	R.hip	N-S		8	
21:07:20	M.sp				Very brief, faint
21:18:41	P.aur				Heard not seen
21:21:29	P.aur	S-N			Heard not seen, seemed to be commuting N
21:27:47	P.pyg				Heard not seen
21:28:41	N.noc		Y		Heard not seen
21:37:13	P.aur	Y			Brief commuting pass, heard not seen
21:40:10	P.aur				Heard not seen
21:45:26	E.ser	Y			Heard not seen
21:49:15	M.sp				Heard not seen, very faint and brief
21:51:31	E.ser	Y			Heard not seen
21:59:25	P.pip				Heard not seen

Date	24th August 2015				
Location	FPC location 2				
Time	Species	Commuting	Foraging	Height	Comments
20:42:32	P.pip	South		2m	
20:56:37	M.sp				Heard not seen
20:57:45	P.pyg		Yes		Heard not seen
21:12:12	M.sp				Heard not seen - single brief pass
21:15:25	M.sp				Heard not seen
21:22:38	M.sp				Heard not seen
21:27:56	P.pip				Heard not seen
21:30:02	R.fer				very faint call, heard not seen
21:55:09	P.pip				Heard not seen

Date	27.08.15				
Location	FPC location 1A				
Time	Species	Commuting	Foraging	Height	Comments
20:42:11	P.pip				Heard not seen
20:49:08	P.pip	NE to SW			Commuted from NE but did not continue SW past surveyor
20:51:45	P.pyg	NE to SW		11	
21:01:06	P.pyg				Heard not seen
21:06:12	M.sp.	Yes			Unable to see - commuting along the woodland strip but unable to say which direction
21:17:19	M.sp.				Quiet, heard not seen
21:20:48	M.sp.				Very close/flying low? Heard not seen
21:32:23	P.pip				Heard not seen
21:38:34	M.sp.				Heard not seen
22:00:54	P.pip				

	22:01:19	P.pip		10	Flying N away from woodland strip
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Date	27.08.15
Location	FPC location 1B

				Height	
Time	Species	Commuting	Foraging	(m)	Comments
20:23:27	P.pyg		Yes	15	
20:25:13	Chiroptera sp.	NE-SW		8	No echolocation
20:28:06	P.pyg		Yes	10	Foraging for over 2 minutes in area
20:31:35	P.pyg	NE-SW		8	
20:35:27	P.pyg	NE-SW		13	
20:38:51	M.sp.	NE-SW		7	
20:40:12	P.pip		Yes	10	Originally approached from SW along woodland strip
20:51:51	P.pyg	N-S		12	
					Appeared briefly from SW at edge of clearing then immediately returned
20:24:14	Chiroptera sp.			10	SW. No echolocation
21:13:22	P.aur				Quite close, heard not seen
21:17:02	P.pip				Heard not seen
21:19:49	P.pyg				Heard not seen
21:24:39	P.pyg				Heard not seen
21:40:33	P.pyg				Heard not seen
21:55:47	P.pyg		Yes		Heard not seen
22:00:44	P.pip		Yes	12	Flying NE, feeding buzz

Date	27.08.15
Location	FPC location 1C

Time	Species	Commuting	Foraging	Height (m)	Comments
20:25:22	Chiroptera sp.	NE-SW		10	No echolocation
20:28:33	P.pyg		Yes		Very brief, heard not seen
20:35:26	P.pyg				Very feint, heard not seen
20:38:59	P.aur				Very feint, heard not seen
20:39:32	P.pip	NE-SW	Yes	8.5	Commuting NE-SW but foraged briefly in clearing before continuing
20:40:19	P.pip				Heard not seen
20:52:00	P.pyg				Heard not seen
20:52:12	R.hip	SW-NE		10.5	
21:17:11	P.pip				Heard not seen
21:27:55	R.hip				Very feint, heard not seen
21:37:44	R.hip		Yes	7	Appeared to approach from NE, forage briefly around me then continue SW
21:39:56	P.pip				Heard not seen
21:41:55	P.aur				Very feint, heard not seen
21:43:06	P.aur				Very feint, heard not seen
21:43:36	P.aur				Very feint, heard not seen
21:48:13	N.noc	Yes			Heard not seen
21:57:52	P.pip	Yes			Heard not seen
22:00:53	P.pip				Heard not seen

Date	27.08.15
Location	FPC location 2

Time	Species	Commuting	Foraging	Height (m)	Comments
20:59:25	P.pip	Yes			Heard not seen
21:02:31	P.pyg	N-S		6	
21:06:07	P.aur	N-S		6	
21:07:59	P.pyg	N-S		6	
21:15:03	N.noc	Yes			Heard not seen
21:30:17	N.noc				Heard not seen
21:30:53	P.pip	Yes			Heard not seen
21:34:34	P.pip				Social calls. Heard not seen
22:01:03	R.hip				Feint, brief, heard not seen

Date	31st August 2015
Location	FPC location 1A

Time	Species	Commuting	Foraging	Height	Comments	
20:19:25	P.pyg	NE-SW		9		
20:22:50	P.pip				Heard not seen	
20:27:28	P.pyg	N-S		10		
20:33:30	P.pip	N	Yes	12	Foraging briefly over surveyor then flew N	
20:41:44	Chiroptera sp.	W-E		9	Suspect P.aur	
20:49:58	Chiroptera sp.	NE-SW		12	Suspect Pip.sp.	
21:11:43	P.aur				Heard not seen	
21:12:40	P.aur	N-S		10		
21:20:25	E.ser	Yes			Heard not seen	
21:22:23	M.sp.				Feint, heard not seen	
21:22:53	M.sp.				Feint, heard not seen	
21:39:40	E.ser	Yes			Heard not seen	
21:41:38	M.sp.	S-N-S	Yes	11	Foraged briefly over surveyor	
21:45:36	N.noc				Feint, heard not seen	
21:49:23	P.pip & E.ser				Heard not seen	
21:57:38	R.fer				Heard not seen	

Date	31st August 2015
Location	FPC location 1B

Time	Species	Commuting	Foraging	Height	Comments
20:20:14	P.pyg		Yes	13	
20:24:23	P.pyg	N-S		10	
20:25:28	P.pyg	NE-SW		12	
20:28:48	Chiroptera sp.	NE-SW	Yes	7	No echolocation, broad-winged, gleaning, suspect P.aur
20:32:33	P.pip	S	Yes	15	Foraging over surveyor then headed S
20:35:03	Chiroptera sp.	N-S-N		10	No echolocation, broad-winged, gleaning, suspect P.aur
20:36:24	P.pip	NE-SW	Yes	15	
20:37:04	Chiroptera sp.	S-N	Yes	7	No echolocation, broad-winged, gleaning, suspect P.aur
20:40:44	Chiroptera sp.	S-N	Yes	5	No echolocation, broad-winged, gleaning, suspect P.aur
21:16:30	P.aur	SW-NE		15	
21:36:50	P.aur				Heard not seen
21:39:15	P.pip				Heard not seen
21:40:03	P.pyg				Heard not seen

Date	31st August 2015
Location	FPC location 1C

Time	Species	Commuting	Foraging	Height	Comments	
20:22:19	P.pyg	NE-SW	Yes	9	Brief foraging loop above surveyor	
20:29:18	R.hip	NE-NW	Yes	6	Towards Location 1B	
20:31:57	P.pyg	NE-SW		11		
20:32:36	P.pip		Yes		Heard not seen	
20:36:09	P.pip	SW-NE-SW	Yes		Foraging briefly above surveyor	
20:36:17	Chiroptera sp.	NE-SW		7-9m	No echolocation. P.aur?	
20:40:39	Chiroptera sp.	SW-NE		6.5	No echolocation. P.aur?	
20:42:16	Chiroptera sp.		Yes	7-10m	No echolocation. P.aur?	
20:49:55	P.pyg				Heard not seen	
20:59:51	E.ser				Heard not seen	
21:04:41	Chiroptera sp.		Yes	6.5	No echolocation. P.aur?	
21:18:29	M.sp.				Heard not seen	
21:36:52	P.aur				Heard not seen	
21:38:13	P.pip	Yes			Heard not seen	
21:39:14	P.pip				Feint, heard not seen	
21:42:27	P.pip		Yes		Heard not seen	

Date	31th August 2015
Location	FPC location 2

Time	Species	Commuting	Foraging	Height	Comments
20:33:09	R.hip	N-S-N	Y	2.2	Foraging, commuted from north, heading back north
20:35:45	P.pip				Heard not seen, both very faint
20:39:55	P.aur	S-N	Y	3	Adjacent to ditch, feeding on commute
20:45:05	P.pip	Y			Heard not seen
20:47:30	P.aur				Heard not seen
20:49:56	P.pyg	Y			Heard not seen
20:54:32	P.aur		Y		Faint, heard not seen
21:00:07	P.aur				Heard not seen
21:00:28	R.hip				Heard not seen
21:02:17	R.hip	SE-NW		4	
21:04:55	P.pip				Heard not seen
21:13:56	P.pip	S-N			Along eastern side of ditch, heard not seen
21:26:36	P.pip				Heard not seen
21:27:01	P.pip	Y			Heard not seen
21:29:25	E.ser				Heard not seen
21:30:50	P.pyg		Y		Heard not seen
21:40:47	N.noc	Y			Heard not seen
21:44:38	P.pip	Y			Heard not seen
21:49:48	P.aur				Very faint, heard not seen
21:51:20	P.pip				Heard not seen
21:56:30	P.aur	Y			Heard not seen

21:57:21	E.ser	N-S		Along eastern side of ditch
22:00:22	P.pip			Heard not seen

Date	3rd September 2015
Location	FPC location 1A

Time	Species	Commuting	Foraging	Height	Comments
20:04:50	P.pyg		Yes	8-16m	
20:06:58	P.pyg	NE-SW		7	
20:15:02	R.hip				Heard not seen
20:18:51	P.pyg	NE-SW		14	
20:19:39	N.noc				Heard not seen
20:22:10	P.pyg				Heard not seen
20:22:56	P.pyg				Heard not seen
20:49:20	M.sp.				Feint, heard not seen
20:50:39	R.hip				Heard not seen
21:04:11	E.ser				Feint, heard not seen
21:06:32	P.pip			7	
21:09:27	E.ser				Heard not seen
21:09:42	E.ser				Heard not seen
21:11:50	E.ser				Heard not seen
21:17:02	R.hip x 2	NE-W		7	
21:19:38	P.pip & E.ser				Heard not seen
21:31:14	E.ser				Heard not seen
21:35:34	P.pyg				Heard not seen
21:42:13	P.aur x 2				Heard not seen
21:44:44	M.sp.	NE-SW		10-11m	

21:54:32	P.pip			Heard not seen
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Date	3rd September 2015
Location	FPC location 1B

Time	Species	Commuting	Foraging	Height	Comments
20:03:47	P.pyg	N-S			
20:07:00	P.pyg	NE-SW			
20:12:42	P.pyg	N-S		8-10m	
20:17:12	P.pyg	N-S		8-10m	
20:53:11	P.pyg				Heard not seen
20:55:44	P.pip	NE-SW-NW		10	
21:02:27	P.pyg				Heard not seen
21:29:23	M.sp.				Heard not seen
21:36:53	Chiroptera sp.	S-N		9	No echolocation
21:41:38	M.sp.				Heard not seen

Date	3rd September 2015
Location	FPC location 1C

Time	Species	Commuting	Foraging	Height	Comments
20:12:41	P.pip	NE-SW		11	
20:13:50	R.hip				Heard not seen
20:17:14	P.pyg	N-S		9	
20:21:10	P.pyg	S-NE		8	
20:22:51	P.pip	S-W		10	
20:36:16	R.hip	NE-SW		7	
20:40:25	P.pip				Heard not seen
20:41:01	P.aur	SW-NE		10.5	
20:48:42	P.pyg				Heard not seen
20:51:29	R.hip	NE-SW		8	
20:55:46	P.pip				Heard not seen
21:08:56	N.noc	Yes			Heard not seen
21:13:44	E.ser	Yes			Heard not seen
21:23:14	P.aur				Heard not seen
21:24:46	R.hip	SW-N		6	
21:26:32	M.sp.	Yes			Heard not seen
21:30:22	M.sp.	Yes			Heard not seen
21:44:00	R.hip				Heard not seen

Date	3rd September 2015
Location	FPC location 2

Time	Species	Commuting	Foraging	Height	Comments
20:15:00	P.pyg	N-S-N	Y	4.5	Commute from north, feeding, heading back north
20:26:24	P.pyg	N-S			Along hedgerow
20:31:09	P.pip				Along hedgerow
20:38:09	P.aur	N-S-N		3	
20:43:24	R.hip	N-S		6	Crossing from left hedgerow to right (west to east)
20:46:50	R.hip				Heard not seen
20:47:56	P.pyg				Heard not seen
20:57:50	P.pip				Heard not seen, very faint
21:00:59	P.pip	S-N			Along eastern hedgerow, social calls
21:08:50	R.hip	N-S-N			Heard not seen, seemed to be along eastern hedgerow
21:28:07	P.pyg				Heard not seen
21:30:41	E.ser	Y			Heard not seen
21:38:11	P.aur		Y		Heard not seen
21:40:30	R.hip				Heard not seen
21:46:14	P.aur				Heard not seen, faint

Date	7th September
Location	FPC location 1A

Time	Species	Commuting	Foraging	Height	Comments
19:59:05	P.pyg	NW-SE		16	Flying over treetops towards location 1C
20:02:12	P.pip				Heard not seen
20:04:17	P.pyg				Very feint, heard not seen
20:05:17	P.pyg		Yes		Foraging nearby
20:07:44	P.pip				Very feint, heard not seen
20:09:22	P.pip		Yes		Heard not seen
20:23:16	P.pip	Yes			Heard not seen
20:29:22	M.sp.	E-W		9	Large myotis
20:36:13	P.pyg		Yes		Heard not seen
20:37:55	P.pip				Heard not seen
20:41:51	P.pip	S-N		7.5	
20:42:36	P.pip				Heard not seen
20:48:42	P.aur				Very feint, heard not seen
20:50:12	N.noc				Heard not seen
20:51:33	P.pip				Heard not seen
20:57:33	P.pip		Yes		Heard not seen
20:59:35	M.sp.	S-N-S	Yes	7.5	
20:59:40	Chiroptera sp.	Yes			Heard not seen
21:03:05	Pip.sp.				Social calls, heard not seen

21:05:36	Chiroptera sp.	S-N		7	No echolocation, broad-winged, suspect P.aur
21:11:07	P.pip		Yes		Heard not seen
21:14:24	R.hip				Heard not seen
21:14:34	P.pyg				Heard not seen
21:17:37	P.pip				Heard not seen
21:31:52	P.pyg	Yes			Heard not seen
21:44:00	Chiroptera sp.	Yes			Heard not seen
Date	7th September 20	)15			

Location FPC location 1B

Time	Species	Commuting	Foraging	Height	Comments
19:51:54	P.pip	NE-SW		8.5	
19:59:07	P.pyg	S-N	Yes	10.5	Commuting but brief foraging loop over surveyor
20:05:22	P.pyg	Yes			Heard not seen
20:06:18	P.pip		Yes	12	Approached from N, foraging until 21:07:44 then headed N again
20:06:38	P.pyg				Feint heard not seen while P.pip still foraging
20:21:38	P.aur				Heard not seen
20:23:14	P.aur				Heard not seen
20:24:27	P.pyg				Heard not seen
20:42:36	P.pip				Heard not seen
20:49:08	M.sp.	S-N	Yes	11	Commuting but brief foraging loop over surveyor
20:50:45	M.sp.				Heard not seen
20:51:35	P.pip				Heard not seen
20:51:48	P.pip				Heard not seen
20:52:26	P.pip				Heard not seen
20:56:38	P.pyg				Heard not seen
20:57:28	P.pip				Heard not seen
21:06:06	M.sp.				Heard not seen
21:15:47	P.aur	S-N		12	

21:34:06	Chiroptera sp.	E-W	11	No echolocation
21:35:22	E.ser			Heard not seen
21:43:27	P.aur			Heard not seen

Date	7th September 2015
Location	FPC location 1C

Time	Species	Commuting	Foraging	Height	Comments
20:06:58	P.pip		Yes		In direction of location 1B, heard not seen
20:15:18	P.pyg	NE-SW		9	
20:20:58	P.pip	SW-NE		12	Coming from above stream, over surveyor and towards woodland edge
20:21:41	P.aur				Very feint, heard not seen
20:24:31	P.pyg				Heard not seen
20:27:58	P.aur				Very feint, heard not seen
20:43:55	P.aur				Very feint, heard not seen
20:50:45	M.sp.				Very feint, heard not seen
20:51:15	P.pip	Yes			Heard not seen
20:55:18	E.ser				Heard not seen
20:56:06	P.pip				Heard not seen
20:59:37	P.aur				Heard not seen
21:01:12	E.ser				Very feint, heard not seen
21:16:15	P.pip	Yes			Heard not seen
21:17:22	P.aur	Yes			Heard not seen
21:17:48	P.pip				Heard not seen
21:24:00	P.aur	Yes			Heard not seen
21:26:30	M.sp.				Very feint, heard not seen

21:33:36	P.pyg		Heard not seen
21:43:04	P.pip		Heard not seen

Date	7th September 2015				
Location	FPC location 2				

Time	Species	Commuting	Foraging	Height	Comments
20:06:00	P.pyg	N-S	Y	4	
20:38:53	P.pyg		Y		Heard not seen
20:43:34	P.aur	Y			Heard not seen
21:07:44	P.aur				Heard not seen
21:10:55	P.pyg				Heard not seen
21:15:43	P.pip	N-S		5	
21:32:49	P.pip	N-S		5	

Date	11th September 2015				
Location	FPC location 1A				

Time	Species	Commuting	Foraging	Height	Comments
19:50:22	P.pip	N-S		10	
20:03:22	M.sp.	N-S		6	
20:06:56	P.pip				Heard not seen
20:07:27	P.pip	S	Yes	10	Foraging overhead then flew S
20:09:05	P.pyg				Heard not seen
20:09:19	R.hip				Heard not seen
20:20:15	P.pip & P.pyg				Heard not seen
20:20:47	P.pip				Heard not seen
20:22:30	P.pip				Heard not seen
20:23:07	P.pip				Heard not seen
20:23:29	P.pip				Heard not seen
20:32:55	P.pip				Foraging for 2 minutes. Heard not seen
20:41:22	M.sp.				Heard not seen
20:41:50	R.hip				Heard not seen
20:42:24	P.pip				Heard not seen
20:44:29	P.pyg				Heard not seen
20:45:14	P.pyg				Social calls, heard not seen

20:46:42	Chiroptera sp.	NE-SW	7	Broad-winged bat, seen not heard
20:50:25	E.ser			
21:10:19	P.pip			Heard not seen
21:13:42	P.pip			Heard not seen
21:17:02	P.pip			Social calls, 1 minute, heard not seen
21:24:33	P.pip			Heard not seen
21:26:02	P.pip			Social calls, 2 minutes, heard not seen

Date	11th September 2015	7			
Location	FPC location 1B				
Time	Species	Commuting	Foraging	Height	Comments
19:38:02	P.pip		Y	12	
19:43:28	P.pyg	N-S-N			
19:44:00	P.pip	Y			Ν
19:47:04	P.pip		Y		
19:49:52	P.pip	N-S	Y	11	
19:51:05	P.pip		Y		
19:53:39	P.pip	N-W		11	
19:54:00	Chiroptera sp.	N-E		6	Not echolocating
20:00:00	Chiroptera sp.	S-N		8	Not echolocating
20:05:45	P.pip		Y		Still foraging overhead
20:12:00	P.pyg		Y		Heard not seen
20:13:38	P.pyg	S-N		9	
20:20:37	P.pip		Y		Heard not seen
20:22:49	P.pip, P.pyg		Y		Heard not seen
20:23:50	N.noc				Heard not seen
20:26:55	R.hip				Heard not seen
20:29:10	P.pip				Heard not seen
20:33:00	P.pip	SW-NE		12	
20:40:47	P.pyg				Heard not seen
20:42:27	P.pyg				Heard not seen
20:44:30	P.pyg	W-E		5	
20:48:24	P.aur				Heard not seen
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20:56:45	P.pip				Heard not seen
20:58:28	P.pip	N-S-N			
21:00:01	P.pip		Y	11	Foraging along stream
21:01:25	P.pip		Y	10	Still foraging overhead
21:04:17	P.pip		Y	10	Still foraging overhead
21:09:50	Chiroptera sp.		Y	6	Silent bat, probable P.aur
21:11:22	M.sp				Heard not seen
21:16:03	P.pip				Heard not seen
21:23:10	P.pip	E-W		9	
21:25:53	P.pip				Heard not seen
21:28:45	P.pip	Ν	Y	7	
21:29:50	P.pip	Ν	Y	6	
21:30:33	P.pyg		Y	11	Foraging N-S-N along stream

Date	11th September 2015
Location	FPC location 1C

Time	Species	Commuting	Foraging	Height	Comments
19:37:43	P.pip		Yes		For several minutes, plus social calls, heard not seen
19:52:17	P.pip				For several minutes, heard not seen
19:59:45	P.aur				Very feint, heard not seen
20:03:54	P.pyg	NE-W		10	
20:10:34	P.pyg		Yes		Heard not seen
20:12:03	P.pyg	NE-SW	Yes	6	Coming away from the stream to edge of woodland strip
20:19:56	P.pyg		Yes		Heard not seen
20:22:56	P.pyg				Heard not seen
20:23:55	N.noc				Heard not seen
20:31:26	P.pip		Yes		Heard not seen
20:39:11	P.aur				Very feint, heard not seen
20:43:00	P.pyg				Heard not seen

				Very feint, heard not seen
20:45:27	P.pyg		Yes	Heard not seen
20:47:30	P.pip	Yes		Heard not seen
20:48:18	M.sp.	Yes		Heard not seen
20:58:34	P.pip			Heard not seen
20:59:16	P.pip			Heard not seen
21:05:57	E.ser			Heard not seen
21:07:57	R.hip			Heard not seen
21:16:05	P.pip		Yes	Social calls, heard not seen, intermittent until 21:30
21:31:50	M.sp.	Yes		Heard not seen
Date 11t	th September 2015			

Location FPC location 2

Time	Species	Commuting	Foraging	Height	Comments
19:51:46	P.pip	N-S		4	
20:10:23	P.pip				Heard not seen
20:10:53	P.pip	N-S		6	Over middle of ditch
20:15:11	R.hip	N-S		3	
20:23:09	E.ser	Y			Heard not seen
20:26:17	P.pip	N-S			Heard not seen
20:27:16	P.pip	Y			Heard not seen
20:29:45	P.aur				Heard not seen
20:41:10	R.hip	N-S		5.5	Along eastern hedgerow
20:44:20	P.pip	Y			Heard not seen
20:55:22	P.pyg		Y		
20:57:58	M.sp				Heard not seen
21:13:33	P.pip	Y		4.5	Along eastern hedgerow
21:19:41	R.hip				Heard not seen
21:24:14	N.noc				Heard not seen
21:28:01	P.aur				Heard not seen

21:32:33	B.bar	S-N		5.5	Along eastern hedgerow
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Annex D – Static logger individual results

Table D1 – Static logger 1 - August

	P.;	pip	P.pyg		Myot	tis Sp	N.noc/N	.lei/E.ser	P.a	aur	R.ł	nip
Date	No of	No of	No of	No of	No of	No of						
Date	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled
	per night	files	per night	files	per night	files						
24-25/08/15	14	15	0	0	0	0	0	0	0	0	1	1
25-26/08/15	5	5	1	2	2	2	0	0	0	0	0	0
26-27/08/15	84	118	4	4	8	8	0	0	2	2	1	1
27-28/08/15	234	464	30	38	2	2	1	1	0	0	0	0
28-29/08/15	66	71	17	18	2	2	0	0	0	0	0	0
29-30/08/15	21	26	3	4	3	3	0	0	2	2	0	0
Total	424	699	55	66	17	17	1	1	4	4	2	2

	P.p	pip	P.¢	руg	Myot	tis Sp	N.noc/N	.lei/E.ser	P.a	aur	R.I	nip
	Avorago	% of		% of		% of		% of		% of		% of
Time	Average No of	minutes	No of	minutes	No of	minutes	No of	minutes	No of	minutes	No of	minutes
inne	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of
	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity
	pernour	per hour		per hour		per hour		per hour		per hour		per hour
2015-2100	0.33	0.74	0.00	0.00	0.00	0.00	0.17	0.37	0.00	0.00	0.17	0.37
2100-2200	6.50	10.83	1.00	1.67	0.33	0.56	0.00	0.00	0.17	0.28	0.00	0.00
2200-2300	8.17	13.61	1.50	2.50	0.50	0.83	0.00	0.00	0.33	0.56	0.00	0.00
2300-0000	15.67	26.11	2.00	3.33	1.17	1.94	0.00	0.00	0.00	0.00	0.00	0.00
0000-0100	16.67	27.78	1.50	2.50	0.17	0.28	0.00	0.00	0.00	0.00	0.00	0.00
0100-0200	9.83	16.39	1.00	1.67	0.50	0.83	0.00	0.00	0.00	0.00	0.00	0.00
0200-0300	5.67	9.44	1.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0300-0400	3.33	5.56	1.00	1.67	0.17	0.28	0.00	0.00	0.00	0.00	0.00	0.00
0400-0500	2.00	3.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.28
0500-0600	2.50	4.17	0.17	0.28	0.00	0.00	0.00	0.00	0.17	0.28	0.00	0.00
0600-0615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	70.67	117.96	9.17	15.28	2.83	4.72	0.17	0.37	0.67	1.11	0.33	0.65

Table D2 – Static logger 1 – September

	P.;	oip	P.p	oyg	Myot	tis Sp	P.a	aur	R.ł	nip
Date	No of	No of								
Date	minutes	labeled								
	per night	files								
07-08/09/15	5	5	0	0	2	2	5	9	1	1
08-09/09/15	0	0	0	0	1	1	1	1	0	0
09-10/09/15	5	7	0	0	1	1	0	0	0	0
10-11/09/15	6	8	11	12	1	1	2	2	0	0
11-12/09/15	7	8	5	5	1	1	0	0	1	1
12-13/09/15	19	30	4	6	1	1	0	0	0	0
Total	42	58	20	23	7	7	8	12	2	2

	P.;	pip	P.p	руg	Myot	tis Sp	P.a	aur	R.I	nip
	Average	% of	Nelef	% of	No. of	% of	No. of	% of	No. of	% of
Time	No of	minutes of	No of minutes	minutes of						
	minutes	activity	per hour	activity						
	per hour	per hour		per hour		per hour		per hour		per hour
1945-2100	0.17	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000-2100	1.67	2.78	1.33	2.22	0.50	0.83	0.00	0.00	0.17	0.28
2100-2200	3.00	5.00	0.67	1.11	0.00	0.00	0.00	0.00	0.00	0.00
2200-2300	1.00	1.67	0.00	0.00	0.17	0.28	0.00	0.00	0.00	0.00
2300-0000	0.17	0.28	0.33	0.56	0.17	0.28	0.17	0.28	0.17	0.28
0000-0100	0.67	1.11	0.33	0.56	0.00	0.00	0.67	1.11	0.00	0.00
0100-0200	0.33	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0200-0300	0.00	0.00	0.50	0.83	0.00	0.00	0.00	0.00	0.00	0.00
0300-0400	0.00	0.00	0.17	0.28	0.17	0.28	0.33	0.56	0.00	0.00
0400-0500	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.28	0.00	0.00
0500-0600	0.00	0.00	0.00	0.00	0.17	0.28	0.00	0.00	0.00	0.00
0600-0645	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	7.00	12.50	3.33	5.56	1.17	1.94	1.33	2.22	0.33	0.56

Table D3 – Static logger 2 - August

	P.p	pip	P.p	уg	P.r	nat	Myot	tis Sp	N.noc/N.	lei/E.ser	P.a	aur	B.barb		R.hip	
Date	No of	No of	No of	No of	No of	No of	No of	No of								
Date	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled								
	per night	files	per night	files	per night	files	per night	files								
24-25/08/15	116	299	2	2	1	1	0	0	1	1	1	1	0	0	0	0
25-26/08/15	165	430	2	2	0	0	3	4	0	0	1	1	1	1	0	0
26-27/08/15	8	10	0	0	0	0	1	1	0	0	0	0	0	0	0	0
27-28/08/15	435	1245	0	0	0	0	17	18	0	0	0	0	2	2	0	0
28-29/08/15	265	432	2	2	0	0	4	4	1	1	1	1	4	4	1	1
29-30/08/15	14	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1003	2437	6	6	1	1	25	27	2	2	3	3	7	7	1	1

	P.(	oip	P.p	уg	P.r	nat	Myo	tis Sp	N.noc/N	.lei/E.ser	P.a	aur	B.b	arb	R.ł	nip
	Average	% of		% of		% of		% of		% of		% of		%of		% of
Time	Average No of	minutes	No of	minutes	No of	minutes	No of	minutes	No of	minutes	No of	minutes	No of	minutes	No of	minutes
inne	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of	minutes	per	minutes	of
	perhour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity						
	pernou	per hour		per hour		per hour		per hour		per hour		per hour		per hour		per hour
2015-2100	15.00	33.33	0.00	0.00	0.20	0.44	0.00	0.00	0.00	0.00	0.20	0.44	0.00	0.00	0.00	0.00
2100-2200	35.80	59.67	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2200-2300	31.20	52.00	0.60	1.00	0.00	0.00	0.40	0.67	0.00	0.00	0.20	0.33	0.20	0.33	0.00	0.00
2300-0000	24.00	40.00	0.00	0.00	0.00	0.00	0.60	1.00	0.20	0.33	0.00	0.00	0.00	0.00	0.20	0.33
0000-0100	17.60	29.33	0.20	0.33	0.00	0.00	0.60	1.00	0.00	0.00	0.00	0.00	0.40	0.67	0.00	0.00
0100-0200	20.20	33.67	0.00	0.00	0.00	0.00	1.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0200-0300	14.40	24.00	0.00	0.00	0.00	0.00	1.60	2.67	0.00	0.00	0.20	0.33	0.00	0.00	0.00	0.00
0300-0400	16.00	26.67	0.40	0.67	0.00	0.00	0.80	1.33	0.00	0.00	0.00	0.00	0.20	0.33	0.00	0.00
0400-0500	20.00	33.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.67	0.00	0.00
0500-0600	6.40	10.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.33	0.00	0.00
0600-0615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	200.60	342.67	1.20	2.00	0.20	0.44	5.00	8.33	0.40	0.67	0.60	1.11	1.40	2.33	0.20	0.33

Table D4 – Static logger 2 - September

	P.p	pip	P.p	руд	P.r	nat	Myot	tis Sp	N.noc/N	lei/E.ser	P.a	aur	B.b	arb	R.I	nip	R.t	fer
Date	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of	No of
Date	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled
	per night	files	per night	files	per night	files	per night	files	per night	files	per night	files	per night	files	per night	files	per night	files
07-08/09/15	313	1305	10	10	3	3	8	8	1	1	1	1	24	27	0	0	0	0
08-09/09/15	220	710	10	11	0	0	5	8	1	1	2	2	5	6	0	0	0	0
09-10/09/15	227	616	10	15	0	0	3	3	0	0	3	3	13	16	0	0	2	2
10-11/09/15	349	929	10	19	1	1	2	2	1	1	0	0	5	5	0	0	0	0
11-12/09/15	56	89	3	3	0	0	2	2	0	0	0	0	0	0	0	0	0	0
12-13/09/15	152	431	2	3	2	2	5	5	0	0	1	1	2	2	0	0	0	0
13-14/09/15	108	360	2	2	0	0	2	2	2	2	0	0	6	6	1	1	0	0
Total	1425	4440	47	63	6	6	27	30	5	5	7	7	55	62	1	1	2	2
			-							/=								
	P.p		Ρ.μ	руg	P.r		Myo	· · ·	N.noc/N		P.a		B.b	arb	R.I		R.t	fer
Time	Average No of	% of minutes	No of	% of minutes	No of	% of minutes	No of	% of minutes	No of	% of minutes	No of	% of minutes	No of	% of minutes	No of	% of minutes	No of	% of minutes
nne	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of	minutes	of
	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity
	pernoui	per hour		per hour														
1945-2100	3.43	22.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000-2100	49.71	82.86	1.29	2.14	0.00	0.00	0.86	1.43	0.14	0.24	0.14	0.24	5.14	8.57	0.00	0.00	0.00	0.00
2100-2200	45.86	76.43	1.00	1.67	0.00	0.00	0.43	0.71	0.43	0.71	0.29	0.48	1.57	2.62	0.14	0.24	0.00	0.00
2200-2300	22.86	38.10	2.29	3.81	0.29	0.48	0.57	0.95	0.14	0.24	0.14	0.24	0.43	0.71	0.00	0.00	0.00	0.00
2300-0000	19.57	32.62	0.57	0.95	0.29	0.48	0.29	0.48	0.00	0.00	0.00	0.00	0.14	0.24	0.00	0.00	0.14	0.24
0000-0100	16.71	27.86	0.14	0.24	0.14	0.24	0.29	0.48	0.00	0.00	0.14	0.24	0.00	0.00	0.00	0.00	0.00	0.00
0100-0200	13.57	22.62	0.14	0.24	0.00	0.00	0.57	0.95	0.00	0.00	0.00	0.00	0.14	0.24	0.00	0.00	0.00	0.00
0200-0300	6.29	10.48	0.29	0.48	0.14	0.24	0.29	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0300-0400	11.29	18.81	0.29	0.48	0.00	0.00	0.43	0.71	0.00	0.00	0.14	0.24	0.00	0.00	0.00	0.00	0.00	0.00
0400-0500	7.29	12.14	0.29	0.48	0.00	0.00	0.14	0.24	0.00	0.00	0.14	0.24	0.29	0.48	0.00	0.00	0.00	0.00
0500-0600	6.14	10.24	0.29	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.24	0.00	0.00	0.14	0.24
0600-0645	0.86	1.90	0.14	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	203.57	356.90	6.71	11.27	0.86	1.43	3.86	6.43	0.71	1.19	1.00	1.67	7.86	13.10	0.14	0.24	0.29	0.48

Table D5 – Static logger 3 - August

	P.p	pip	P.p	oyg	Myot	is Sp	N.noc/N	.lei/E.ser	B.b	arb	R.I	nip	R.t	fer
Date	No of	No of	No of	No of	No of	No of	No of	No of						
Date	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled
	per night	files	per night	files	per night	files	per night	files						
24-25/08/15	82	142	0	0	1	1	1	1	0	0	3	4	0	0
25-26/08/15	159	355	0	0	0	0	0	0	0	0	1	1	0	0
26-27/08/15	207	400	1	3	0	0	1	1	0	0	1	1	1	1
27-28/08/15	524	2883	1	2	2	2	0	0	1	1	0	0	0	0
28-29/08/15	546	2858	33	74	2	2	0	0	0	0	1	1	0	0
29-30/08/15	510	3028	13	18	1	1	0	0	0	0	1	1	0	0
30-31/08/15	231	666	2	2	0	0	0	0	0	0	1	1	0	0
Total	2259	10332	50	99	6	6	2	2	1	1	8	9	1	1

	P.p	pip	P.p	уg	Myot	tis Sp	N.noc/N	lei/E.ser	B.b	arb	R.ł	nip	R.	fer
	Average	% of		% of		% of		% of		%of		% of		% of
Time	No of	minutes	No of	minutes	No of	minutes	No of	minutes						
mile	minutes	of	minutes	of	minutes	of	minutes	of	minutes	per	minutes	of	minutes	of
	per hour	activity	per hour	activity	per hour	activity	per hour	activity						
	pernou	per hour		per hour		per hour		per hour		per hour		per hour		per hour
2015-2100	18.71	41.59	0.00	0.00	0.00	0.00	0.14	0.32	0.00	0.00	0.14	0.32	0.00	0.00
2100-2200	51.43	85.71	0.14	0.24	0.29	0.48	0.00	0.00	0.14	0.24	0.86	1.43	0.14	0.24
2200-2300	44.71	74.52	0.71	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2300-0000	44.00	73.33	0.43	0.71	0.14	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0000-0100	41.43	69.05	0.71	1.19	0.14	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0100-0200	31.00	51.67	0.14	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0200-0300	23.86	39.76	0.14	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0300-0400	25.00	41.67	1.86	3.10	0.29	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0400-0500	26.00	43.33	1.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0500-0600	16.57	27.62	2.00	3.33	0.00	0.00	0.14	0.24	0.00	0.00	0.14	0.24	0.00	0.00
0600-0615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	322.71	548.25	7.14	11.90	0.86	1.43	0.29	0.56	0.14	0.24	1.14	1.98	0.14	0.24

Table D6 – Static logger 3 - September

	P.;	oip	P.p	руg	Myot	tis Sp	N.noc/N	.lei/E.ser	P.a	aur	R.I	nip
Date	No of	No of	No of	No of	No of	No of						
Date	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled	minutes	labeled
	per night	files	per night	files	per night	files						
07-08/09/15	140	630	2	4	0	0	0	0	0	0	0	0
08-09/09/15	94	304	3	5	0	0	0	0	0	0	2	2
09-10/09/15	165	550	5	6	1	1	1	1	1	1	0	0
10-11/09/15	68	126	15	27	0	0	0	0	0	0	0	0
11-12/09/15	9	13	2	2	0	0	0	0	0	0	1	1
12-13/09/15	76	326	0	0	1	1	0	0	0	0	0	0
Total	552	1949	27	44	2	2	1	1	1	1	3	3

	P.;	pip	P.;	руg	Myot	tis Sp	N.noc/N	.lei/E.ser	P.a	aur	R.ł	nip
	Average	% of	No.of	% of minutes	No of	% of	Neof	% of	No.of	% of	No.of	% of
Time	No of minutes	minutes of	No of minutes	of	minutes	minutes of	No of minutes	minutes of	No of minutes	minutes of	No of minutes	minutes of
	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity
10.15 0.100	4.00	per hour	0.00	per hour	0.00	per hour	0.00	per hour	0.00	per hour		per hour
1945-2100	1.00	6.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000-2100	40.17	66.94	0.33	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.28
2100-2200	23.67	39.44	0.83	1.39	0.33	0.56	0.00	0.00	0.00	0.00	0.17	0.28
2200-2300	9.67	16.11	0.17	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2300-0000	3.67	6.11	0.17	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0000-0100	2.67	4.44	1.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.28
0100-0200	2.00	3.33	1.17	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0200-0300	0.83	1.39	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.28	0.00	0.00
0300-0400	1.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0400-0500	1.00	1.67	0.17	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0500-0600	5.33	8.89	0.67	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0600-0645	1.00	2.22	0.00	0.00	0.00	0.00	0.17	0.37	0.00	0.00	0.00	0.00
Total	92.00	158.89	4.50	7.50	0.33	0.56	0.17	0.37	0.17	0.28	0.50	0.83

Table D7 – Static logger 4 - August

	P.,	oip	P.p	oyg	Myo	tis Sp	B.b	arb	R.I	nip
Date	No of	No of								
Date	minutes	labeled								
	per night	files								
24-25/08/15	2	2	2	2	1	1	0	0	2	2
25-26/08/15	7	7	5	5	0	0	0	0	0	0
26-27/08/15	14	15	10	10	0	0	0	0	2	2
27-28/08/15	23	26	6	6	1	1	1	1	2	2
28-29/08/15	34	42	5	5	3	3	0	0	0	0
29-30/08/15	4	6	6	6	1	1	0	0	0	0
Total	84	98	34	34	6	6	1	1	6	6

	P.,	pip	P.p	руg	Myot	tis Sp	B.b	arb	R.ł	nip
	Average	% of		% of		% of		%of		% of
Time	Average No of	minutes	No of	minutes	No of	minutes	No of	minutes	No of	minutes
inne	minutes	of	minutes	of	minutes	of	minutes	per	minutes	of
	per hour	activity	per hour	activity	per hour	activity	per hour	activity	per hour	activity
	pernou	per hour		per hour		per hour		per hour		per hour
2015-2100	0.00	0.00	0.17	0.37	0.00	0.00	0.00	0.00	0.17	0.37
2100-2200	0.83	1.39	0.17	0.28	0.00	0.00	0.17	0.28	0.50	0.83
2200-2300	0.67	1.11	0.67	1.11	0.17	0.28	0.00	0.00	0.17	0.28
2300-0000	2.83	4.72	1.17	1.94	0.00	0.00	0.00	0.00	0.00	0.00
0000-0100	2.50	4.17	0.83	1.39	0.17	0.28	0.00	0.00	0.00	0.00
0100-0200	1.33	2.22	0.67	1.11	0.17	0.28	0.00	0.00	0.17	0.28
0200-0300	1.50	2.50	1.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00
0300-0400	1.83	3.06	0.17	0.28	0.17	0.28	0.00	0.00	0.00	0.00
0400-0500	2.33	3.89	0.50	0.83	0.17	0.28	0.00	0.00	0.00	0.00
0500-0600	0.17	0.28	0.33	0.56	0.17	0.28	0.00	0.00	0.00	0.00
0600-0615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	14.00	23.33	5.67	9.54	1.00	1.67	0.17	0.28	1.00	1.76

## Table D8 – Static logger 4 - September

	P.;	pip	P.p	oyg	Myot	is Sp	P.a	aur	R.I	nip
Date	No of	No of								
Date	minutes	labeled								
	per night	files								
07-08/09/15	7	7	8	8	3	3	1	1	0	0
08-09/09/15	2	2	2	2	1	1	0	0	1	1
09-10/09/15	4	4	8	8	0	0	0	0	1	1
10-11/09/15	10	11	11	12	3	3	0	0	0	0
11-12/09/15	10	10	4	5	2	2	0	0	1	1
12-13/09/15	1	1	1	1	0	0	0	0	0	0
Total	34	35	34	36	9	9	1	1	3	3

	P.;	pip	P.p	руg	Myo	tis Sp	P.a	aur	R.I	nip
	Average	% of		% of		% of		% of		% of
Time	No of	minutes								
	minutes	of								
	per hour	activity								
	pernour	per hour		per hour		per hour		per hour		per hour
1945-2100	0.00	0.00	0.17	1.11	0.00	0.00	0.00	0.00	0.00	0.00
2000-2100	0.50	0.83	1.00	1.67	0.50	0.83	0.17	0.28	0.33	0.56
2100-2200	1.50	2.50	2.17	3.61	0.17	0.28	0.00	0.00	0.00	0.00
2200-2300	0.83	1.39	1.67	2.78	0.00	0.00	0.00	0.00	0.00	0.00
2300-0000	1.00	1.67	0.50	0.83	0.17	0.28	0.00	0.00	0.00	0.00
0000-0100	1.00	1.67	0.00	0.00	0.33	0.56	0.00	0.00	0.00	0.00
0100-0200	0.67	1.11	0.00	0.00	0.17	0.28	0.00	0.00	0.00	0.00
0200-0300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.28
0300-0400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0400-0500	0.17	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0500-0600	0.00	0.00	0.17	0.28	0.17	0.28	0.00	0.00	0.00	0.00
0600-0645	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	5.67	9.44	5.67	10.28	1.50	2.50	0.17	0.28	0.50	0.83

## Table D9 – Static logger 5 - August

	P.;	pip	P.p	уg	Pip	Sp	Myot	is Sp	P.a	aur	R.ł	nip
Date	No of	No of										
Date	minutes	labeled										
	per night	files										
24-25/08/15	43	66	6	6	0	0	2	3	0	0	0	0
25-26/08/15	27	42	3	5	0	0	0	0	0	0	0	0
26-27/08/15	55	82	10	13	0	0	0	0	0	0	0	0
27-28/08/15	136	202	0	0	0	0	0	0	1	1	0	0
28-29/08/15	82	109	11	12	2	2	0	0	0	0	0	0
29-30/08/15	208	273	2	2	0	0	2	2	3	3	0	0
30-31/08/15	169	392	36	56	0	0	6	6	1	1	3	3
Total	720	1166	68	94	2	2	10	11	5	5	3	3

	P.,	pip	P.¢	руg	Pip	sp	Myot	tis Sp	P.a	aur	R.I	nip
	Average	% of		% of								
Time	No of	minutes										
	minutes	of										
	per hour	activity										
	pernou	per hour		per hour								
2015-2100	9.14	20.32	0.57	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2100-2200	11.57	19.29	2.71	4.52	0.00	0.00	0.29	0.48	0.14	0.24	0.00	0.00
2200-2300	15.57	25.95	3.57	5.95	0.14	0.24	0.29	0.48	0.14	0.24	0.00	0.00
2300-0000	18.43	30.71	1.57	2.62	0.00	0.00	0.29	0.48	0.14	0.24	0.00	0.00
0000-0100	15.86	26.43	0.14	0.24	0.00	0.00	0.29	0.48	0.00	0.00	0.14	0.24
0100-0200	10.43	17.38	0.57	0.95	0.14	0.24	0.00	0.00	0.00	0.00	0.14	0.24
0200-0300	5.57	9.29	0.14	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.24
0300-0400	7.29	12.14	0.29	0.48	0.00	0.00	0.29	0.48	0.00	0.00	0.00	0.00
0400-0500	5.43	9.05	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.48	0.00	0.00
0500-0600	3.57	5.95	0.14	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0600-0615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	102.86	176.51	9.71	16.51	0.29	0.48	1.43	2.38	0.71	1.19	0.43	0.71

Table D10 – Static logger 5 - September

	P.(	pip	P.p	oyg	R.I	hip
Date	No of	No of	No of	No of	No of	No of
Date	minutes	labeled	minutes	labeled	minutes	labeled
	per night	files	per night	files	per night	files
07-08/09/15	27	34	6	7	0	0
08-09/09/15	54	96	16	23	2	2
09-10/09/15	56	78	5	5	1	1
10-11/09/15	18	22	1	2	0	0
Total	155	230	28	37	3	3

Time	P.pip		P.pyg		R.hip	
	Average No of minutes per hour	% of		% of		% of
		minutes	No of	minutes	No of	minutes
		of	minutes	of	minutes	of
		activity	per hour	activity	per hour	activity
		per hour		per hour		per hour
1945-2100	0.75	5.00	0.00	0.00	0.00	0.00
2000-2100	21.25	35.42	4.25	7.08	0.25	0.42
2100-2200	7.25	12.08	0.50	0.83	0.00	0.00
2200-2300	5.25	8.75	1.75	2.92	0.00	0.00
2300-0000	0.75	1.25	0.00	0.00	0.25	0.42
0000-0100	0.50	0.83	0.00	0.00	0.00	0.00
0100-0200	1.50	2.50	0.00	0.00	0.00	0.00
0200-0300	0.00	0.00	0.00	0.00	0.00	0.00
0300-0400	0.00	0.00	0.00	0.00	0.25	0.42
0400-0500	0.00	0.00	0.00	0.00	0.00	0.00
0500-0600	0.25	0.42	0.25	0.42	0.00	0.00
0600-0645	1.25	2.78	0.25	0.56	0.00	0.00
Total	38.75	69.03	7.00	11.81	0.75	1.25