

Blackdown Hills Big Bat Survey 2016



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Summary

The sixth Blackdown Hills Big Bat Survey was run by the Somerset Environmental Records Centre (SERC) with the help and support of the Somerset Bat Group (SBG) and the Blackdown Hills Area of Outstanding Natural Beauty Partnership (Blackdown Hills AONB). It was made possible with the generous financial support of the Blackdown Hills AONB through their Sustainable Development Fund. Without these three bodies it would not have been possible. Equally, the whole survey depended on the enthusiasm and expertise of an army of volunteers giving their time to design and walk transects, stumble about in the dark and spend hours at a computer analysing the results.

The weather conditions for the 2016 survey were settled with temperatures of about 17°C, very little wind and no rain. Generally the summer was unusually dry over most of Southern England and it is possible that that may have reduced some insect populations. Warm humid nights tend to be best for hunting bats. For whatever reason the total of bat passes recorded was the lowest in the 6 years of this survey. It is also to be borne in mind that one transect was not surveyed and another was only partially completed. There were issues with a number of recordings and where the written forms or other subject forms of analysis were used instead of frequency division recordings it is likely that the number of passes have been underestimated. Nonetheless even on those transects which had no such problems there seems to have been less bat activity than in previous years.

Acknowledgements

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All the land holders that allowed the survey to take place around their holding.

Transects were created in 2011 and 2012 by Cath Shellswell, Lou Pickersgill, Edward Wells and Liz Biron.

Sound analysis undertaken using BatSound by Edward Wells and Cath Shellswell.

GIS analysis undertaken Somerset Environmental Records Centre (SERC).

Cover photograph: Edward Wells

Report Authors: Edward Wells, Cath Shellswell and Paula Hewitson.

1. INTRODUCTION

There are 17 species of bat known to breed in Britain and 16 of those are recorded in Somerset and Devon. Whilst a number of specific bat roosts within the Blackdown Hills AONB have been known for many years, the way in which bats use the landscape of this interesting and varied part of Somerset and Devon has been only sparsely studied. Flight records have been largely anecdotal. A survey for the National Bat Monitoring Programme of the Bat Conservation Trust in 2010 and 2011 revealed a number of sites for the nationally rare Bechstein's Bat (*Myotis bechsteinii*) in and near the Blackdown Hills. Clearly the area could be of great importance for bats.

As bats are highly mobile, their presence is a good indicator of the status of habitats and they can be used to monitor changes in the condition of the wider landscape. Habitat degradation, such as intensive land management, can deplete the invertebrate population and bats will move elsewhere. The way that the different bat species use the environment, particularly in relation to the use of linear landscape features to “commute” and feed opportunistically, is still a matter of research and debate but it can only help inform that debate to have comparative data covering a number of years showing where in the landscape bats are encountered. The Blackdown Hills represent an outstanding area in which to collect such data with their un-intensive land use and varied mosaic of habitats supported through high nature value farming and forestry.

In order to improve knowledge of the way in which the landscape of the Blackdown Hills AONB is used by bats, the AONB commissioned Somerset Environmental Records Centre (SERC) in 2011 to carry out a Batscapes study, using aerial photograph interpretation and the Integrated Habitats System (IHS), to map and predict areas likely to be suitable for the various British bat species. This work produced predictive maps for a number of species based on their known habitat requirements and on the distribution of known records. In addition to other Big Bat Surveys, the Somerset Bat Group undertook the development of a similar concept in the Blackdown Hills, supported by the AONB with the coordination contracted to SERC in 2011. The Blackdown Hills Big Bat Survey was designed following the model of the highly successful Mendip Hills Big Bat Survey.

The predictive maps produced in the Batscapes study were used to identify potentially good areas to survey. The survey method employed was a transect method with the actual routes used selected according to their practicality. Public paths were an essential part of the transect routes and public roads were avoided wherever possible. It was essential that the chosen route should be safe and able to be negotiated within a reasonable time.

The methods employed were designed to minimise any impacts on bats, essential to ensure validity of the results. The transects were not walked by large groups of people; groups consisted mostly of 4 or 5 people, walking carefully and quietly to not cause a significant intrusion. The potential impact of bats responding to the sounds from bat detectors was also considered – this is at a much lower frequency than the sound of actual bat calls. It is generally believed that bats do not associate the noises from bat detectors with their own sounds; however, if they do, there is no evidence available to indicate that

they alter their behaviour in any way when active within hearing of a bat detector. Therefore, small groups of people walking the transects with bat detectors was considered suitable for obtaining valid results.

It was equally essential that the survey did not disturb or put at risk any other wildlife, or any landowners, their livestock or their crops. Although the transects are along open access footpaths, all landowners were contacted prior to the survey to make them aware that the event was going ahead and the police were also informed to make sure that the unusual activity (and lights) did not raise alarm.

The survey has been held annually for six years and has always attracted over 60 people. The early popularity and success of the project enabled the number of transects to be increased from 12 to 16 routes in 2012 onwards. Much of the purpose of repeating a survey of this kind over a number of years is to try to iron out inconsistencies caused by variable factors such as weather and farming practice. In order to correct for differences caused by the time after sunset a particular area was surveyed the routes were walked in reverse in alternate years. Thus, in 2011, 2013 and 2015 the transect began at walk 1 and finished at point 6 (termed 'NORMAL' direction); in 2012, 2014 and 2016 the transect began at point 6 and finished at walk 1 (termed 'REVERSE' direction).

The Blackdown Hills Big Bat Survey, whilst providing a significant body of robust and meaningful data, also provided an opportunity for a large number of people to experience the pleasure of listening for bats in the company of more experienced bat people. Local naturalists have discovered a whole new world in their own neighbourhood, a world which only comes to life when the sun has gone down. 2016 is the summation of six years survey on the Blackdown Hills, and the information has led to a much more informed picture about bat activity and landscape use in this part of Somerset and Devon.

2. METHOD

The 2016 Blackdowns Big Bat Survey is a landscape survey to collect comparable data across the Area of Outstanding Natural Beauty:

(a) 16 predetermined routes (figure 1) were walked simultaneously comprising a series of 6 walking sections and 6 stationary points. Each team of volunteers listened to bats using heterodyne or frequency division bat detectors and listed what they heard in each section.

(b) At the same time one person in each group undertook a continuous recording on a wave recorder (such as a Zoom or Edirol recorder) using a frequency division Batbox Duet Detector. Two groups elected to use EM2 bat detectors and that fact is noted below in the account of the relevant transects. There has been no opportunity for the authors to compare the sensitivity of the EM2 with that of the BatBox Duet and any comparison between transects has to be treated with caution where different equipment has been used. The recordings were assigned to separate tracks for each section and then analysed to count the number of bat passes in each section and, so far as possible, assign those passes to species.

2.1 Training and Survey

Before the survey took place, Edward Wells ran a workshop on the 24th June 2016 to help inexperienced volunteers become acquainted with how to interpret the calls that they would hear whilst using a bat detector during the survey.

Fourteen transects were surveyed on 22nd of July 2016. The volunteers were divided between the selected transects, with a minimum of two people per transect but the majority of groups consisting of more. Heterodyne bat detectors were lent to volunteers who did not have their own detectors.

14 out of 16 transects were walked. Good frequency division data were obtained for 11. One transect was only half completed and the problems encountered on the other transects in which data are deficient are recorded below. Each walk consisted of six stops of five minutes and six walked sections lasting an average of about ten minutes. The stops were chosen strategically where there were potentially significant landscape features and the walks were mainly along established footpaths for the comfort and safety of the volunteers.

Each transect was walked in the direction followed in 2011 and latterly 2013 to ascertain whether there are differences in bat activity depending on the time of evening. For clarity in comparing years, on the maps and tables of this report the numbering of stops and walks has been shown the same for both directions ('NORMAL' and 'REVERSE') and a note has been made for the years when the survey was walked in reverse. All landowners along each transect were asked for permission to access their land.

To create each route, a walk was drafted using OS Explorer Map 115, 116 and 128. The transects were subsequently checked to measure the timings of each section at a steady walking pace and define the different habitats at the stops. The volunteers were provided with maps of the transect they were undertaking, a risk assessment and asked to walk the route in daylight to familiarise themselves with the route for safety prior to the survey. Further information that was provided to volunteers is available from SERC.

Before starting the surveys, the volunteers met for a brief health and safety talk and then travelled to the beginning of each transect. Individuals with a mixture of bat experience from beginner to very experienced were assigned to each group. One person in each group recorded the route continuously using a Batbox Duet and a wave recorder. The surveys started at 21:30 and finished at approximately 23:00. A chosen volunteer in each group travelled to the Otterford Village Hall at Churchinford to hand in the recordings and survey forms.

2.2 Sound Analysis

The number of bat passes made by each species or group was counted to provide a measure of bat activity along each walk section and stop section. A bat pass is a continuous stream of echolocation calls indicating a bat flying past. The number of bat passes is therefore best understood as an index of bat

activity rather than the absolute number of bats in the area. Except for the bats of the genus *Myotis* and *Plecotus* (Long-eared bats) each species has a spectrogram which is usually distinctive.

2.3 Limitations of the Survey

There are several factors that may affect the results and comparison between the routes:

- Differences in the range of individual bat detectors – individual detectors of the same type can vary in range depending on factors such as local environmental conditions and battery strength. To minimise this effect, new batteries can be used.
- Changes in environmental conditions, such as daylight length and factors relating to the stage in the breeding season, can be compensated for by carrying out the surveys at the same time on the same night. However, less predictable factors, such as temperature, wind speed and direction, and levels of precipitation before and during the survey, all of which will affect invertebrate activity and thus bat activity, are less easy to compensate for and thus may affect the results.
- Observer error misidentifying bat passes and counting the number of bat passes – the standard procedure for counting bat passes was followed; however there is scope for error if more than one bat of the same species /genus is passing the bat detector at one time. There is also the potential to misidentify species, particularly if the call is faint.
- Some of the transects delivered no objectively analysable data. Two routes were recorded as heterodyne signals and not in frequency division, and one was recorded at the wrong sampling rate. In the case of the heterodyne recordings we relied on the written notes taken by the surveyors supported by a subjective opinion of the recordings. In the case of the recordings at a sampling rate of 22 bits per seconds it was possible to obtain sonograms but not a power spectrum to measure peak frequencies. There is a lower level of confidence in the identification of the species “missed” in this way but given the experience of the recorders concerned we considered it appropriate to accept their identification even though it could not be subjected to objective verification by sound analysis. There is a greater danger of inaccuracies in identifying species from bat passes from heterodyne recordings, and individual bat passes are more difficult to distinguish if more than one bat is flying past the bat detector at the same time resulting in counting errors. There is also a greater risk that bat species echolocating at different frequencies may be missed, for example, heterodyne detectors are unlikely to pick-up both a Noctule Bat pass and Lesser Horseshoe Bat pass at the same time as the difference in frequency is too large if the detector is tuned to either the lower or higher end of the spectrum. The absence of a measure of peak frequency makes separation of the three species of pipistrelle and identifying “big bats” (Noctule, Serotine and Leisler’s Bat) both difficult and unreliable.
- Faint recordings – on a number of transects some of the echolocation calls on the recording were too faint to identify the bat species. Faint recordings also make it difficult to extract a peak frequency for the echolocation calls of pipistrelle species. Where the genus of bat was uncertain the recording is marked in the report as “bat species” and where there is sufficient confidence

to assign a recording to the genus *Pipistrellus* but not to a species the recording is marked as “Pipistrelle species”.

- Differences in range of bat echolocation calls:
 - certain bat species may echolocate particularly quietly, for example Barbastelle Bat;
 - or may not echolocate at all and use passive hearing, for example Long-eared Bats;
 - or may have a particularly high echolocation frequency which may not travel as far compared with lower frequencies, for example Horseshoe Bats.

This affects the capacity of the detector to pick-up and record bat passes unless the bat is close, and as a consequence some species may be recorded less frequently than other species.

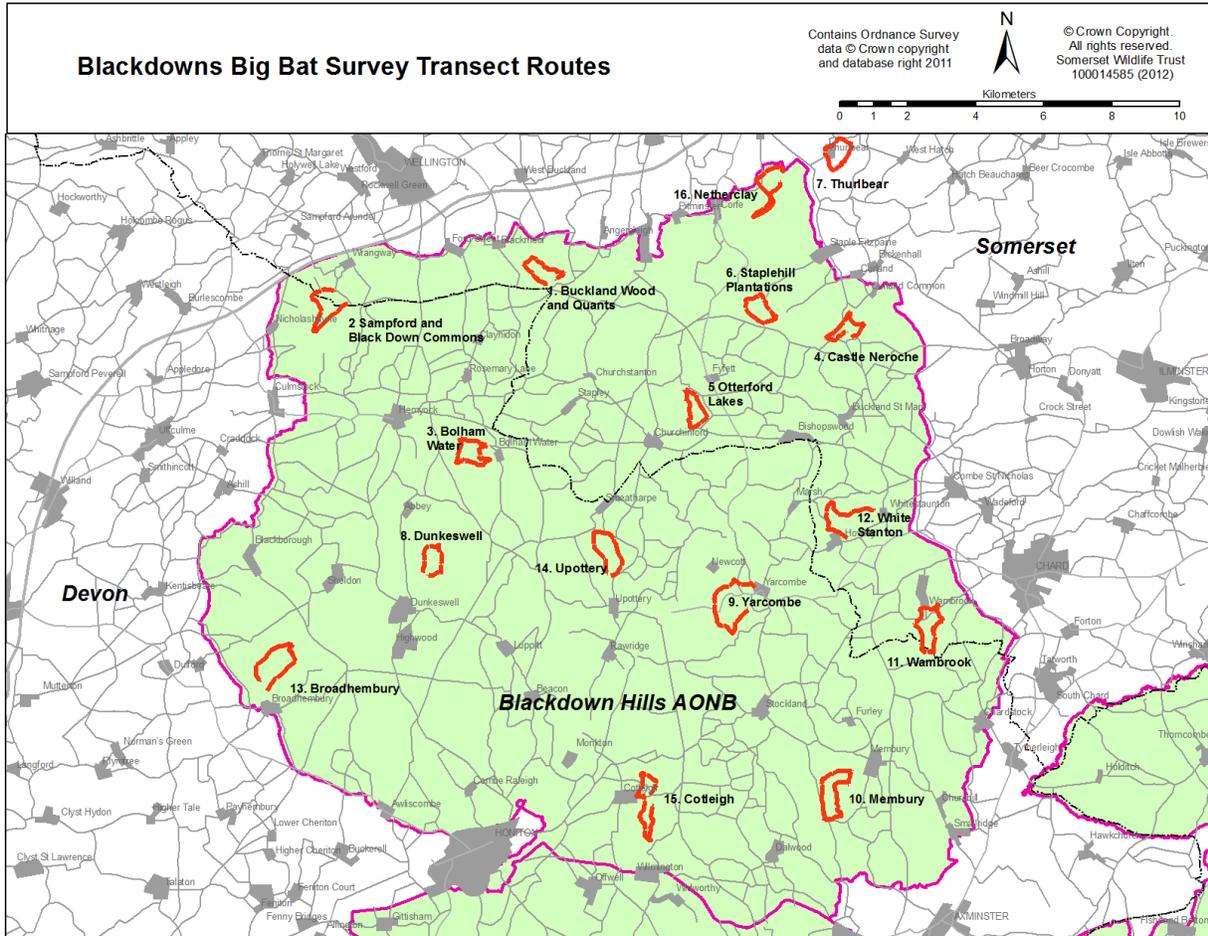


Figure 1: Map of the bat transects undertaken as part of the Blackdowns Big Bat Survey

3. RESULTS AND SOUND ANALYSIS

3.1 Overall summary

There were issues with a number of recordings and where the written forms or other subject forms of analysis were used instead of frequency division recordings it is likely that the number of passes have been underestimated. Nonetheless, even on those transects which had no such problems there seems to have been less bat activity than in previous years.

Through all 6 years of survey Common Pipistrelle passes have represented 63-74% of all passes analysed. However, the percentage of passes was 61.6% in 2016, which is the lowest abundance noted. For three transects it was not possible to establish the peak frequency of the calls and that measurement is essential for identifying pipistrelles to species level. It is for that reason that the percentage of bat passes shown as "Pipistrelle species" is unusually high in 2016 at 4.3% of all passes. Given the preponderance of Common Pipistrelles over the other pipistrelle species it is likely that most if not all of those uncertain recordings are in fact calls of Common Pipistrelles.

Soprano Pipistrelles produced a percentage of calls that was the same as in 2014 and, the rise in this species that had appeared in the early years of this survey seems to have been a matter of natural variation year on year rather than a continued trend.

Nathusius' Pipistrelle was recorded for the second year even though the habitat is not the open water that is normally associated with this species. It is a migratory animal and it is always possible that these bats are males coming to SW England ahead of the females to establish territories for courtship. No social calls were recorded but that is something that bat workers in the ANOB may wish to look out for in coming years.

For three out of the six years we recorded Leisler's Bat, a species which is not common in Somerset and Devon and the distribution and abundance of which is not well understood.

The concern that we expressed in the 2015 report that Myotis bats seemed to be declining from year to year may have been misplaced. From a disappointing 5.8% of passes in 2015 they have recovered to 10.3% in 2016. It seems now that 10-15% is normal and that 2011 at 19.3% and 2015 at 5.8% are the typical years. The total in 2016 may also be an under-estimate because it is not always easy to separate Myotis and Pipistrelle species from heterodyne recordings. There were puzzlingly few Myotis passes at Otterhead Lakes where Daubenton's and Natterer's Bats have been seen in abundance in past years. The former in particular has a higher water requirement than most other bats and the dryness of the summer may have had an influence but there is also a question as to the quality of the water if it is not producing the aquatic insects these bats need.

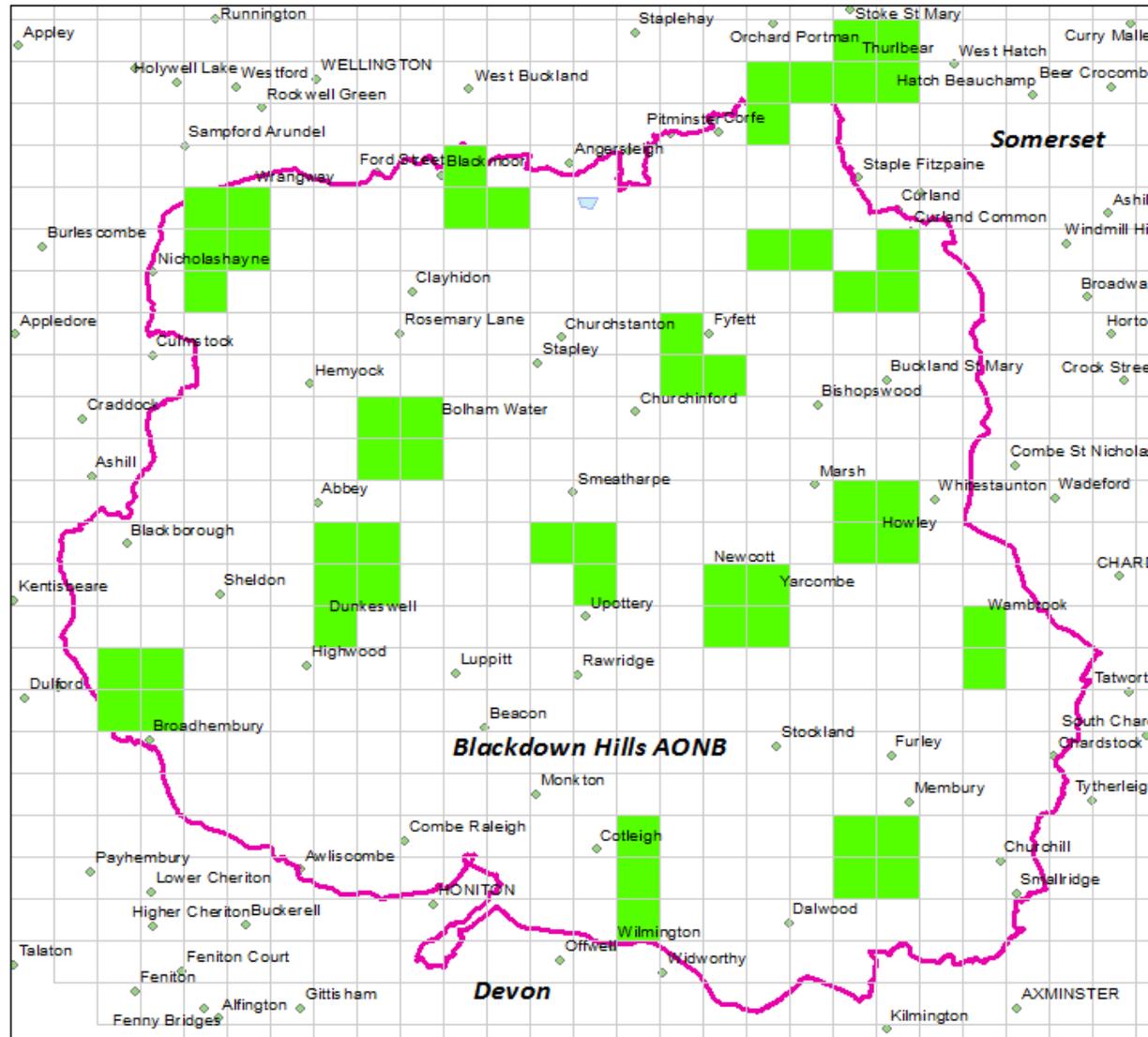
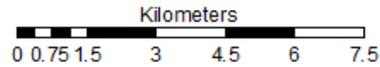
Table 1 shows the number of bat passes and proportion of total calls for all the species recorded, and the following maps show the cumulative presence of species recorded across the Blackdown Hills. The results only show presence of bats identified from the recordings and cannot indicate the absence of a particular species as the survey does not cover the entirety of each square kilometre and, as a consequence, there is the possibility that species may have been missed. The following maps show the presence of each species within each monad surveyed in the Blackdown Hills between 2011-2016.

Table 1: Number and proportion of bat passes recorded for each species / group.

Species / Species Group	Year											
	2011		2012		2013		2014		2015		2016	
	Passes	Total (%)										
Lesser horseshoe	5	0.2	5	0.1	3	0.1	8	0.3	9	0.3	5	0.3
Common 45 pip	1543	66	2774	70.2	1549	63.1	1774	63	2533	73.5	980	61.6
Soprano 55 pip	125	5.3	315	8	291	11.9	408	14.5	407	11.8	230	14.5
Nathusius' pip	0	0	0	0	0	0	0	0	1	<0.1	1	0.1
Pipistrelle	16	0.7	63	1.6	25	1	39	1.4	80	2.3	66	4.1
Serotine	87	3.7	55	1.4	126	5.1	55	2	61	1.8	51	3.2
Noctule	14	0.6	2	<0.1	15	0.6	5	0.2	12	0.3	22	1.4
Leisler's	5	0.2	0	0	1	<0.1	0	0	0	0	1	0.1
Myotis	452	19.3	588	14.9	296	12.1	375	13.4	200	5.8	164	10.3
Long-eared	3	0.1	5	0.1	0	0	6	0.2	14	0.4	1	0.1
Barbastelle	23	1	2	<0.1	10	0.4	11	0.4	12	0.3	1	0.1
Unidentified	68	2.9	143	3.6	138	5.6	129	4.6	119	3.5	69	4.3
TOTAL	2341	100	3952	100	2454	100	2810	100	3448	100	1591	100

Cumulative Common Pipistrelle Passes 2011-2016 Blackdowns Big Bat Survey

Blackdown Hills AONB
 Common Pipistrelle Passes

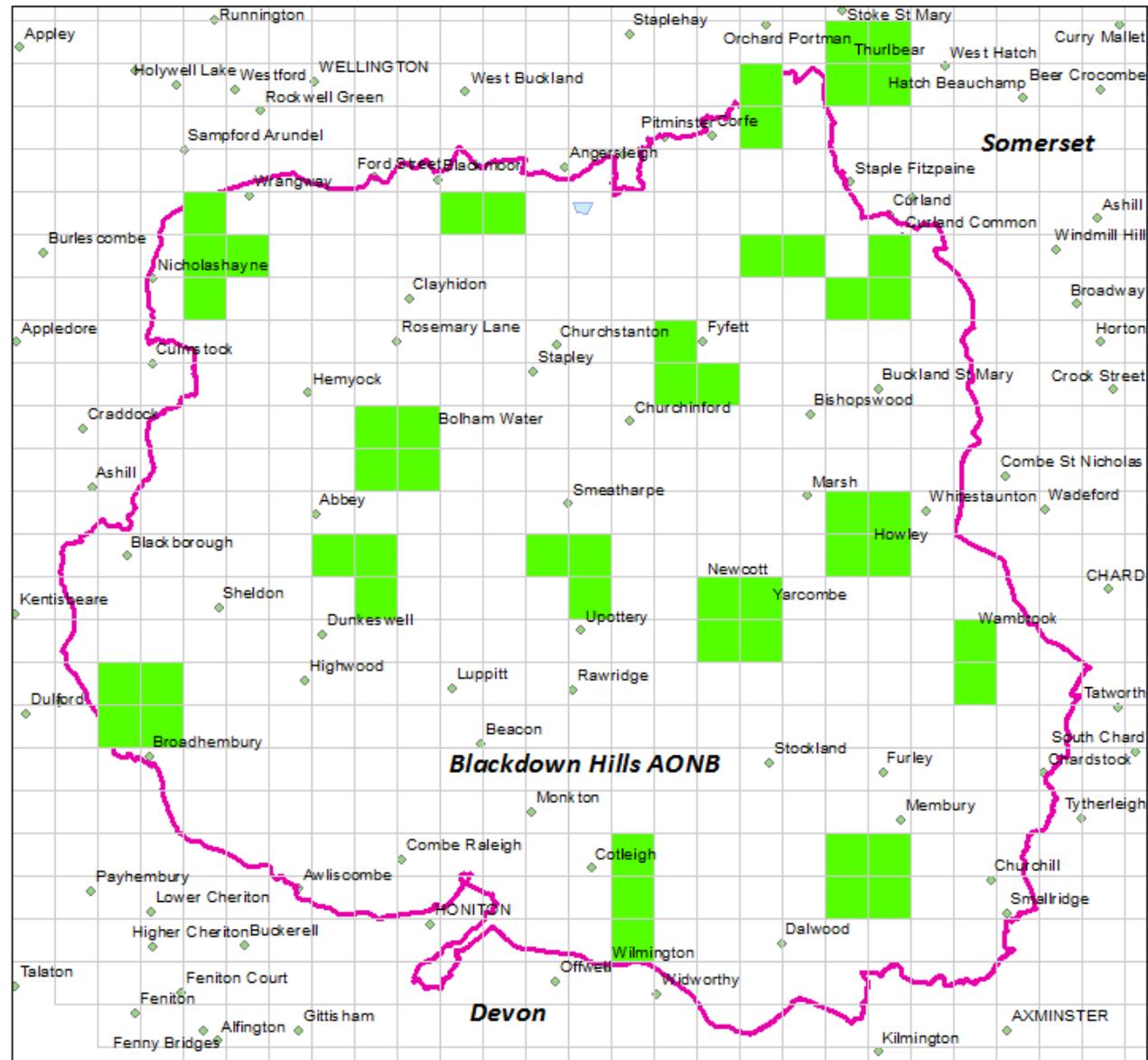


Cumulative Soprano Pipistrelle Passes 2011-2016 Blackdowns Big Bat Survey

Blackdown Hills AONB
 Soprano Pipistrelle Passes



Kilometers
 0 0.75 1.5 3 4.5 6 7.5

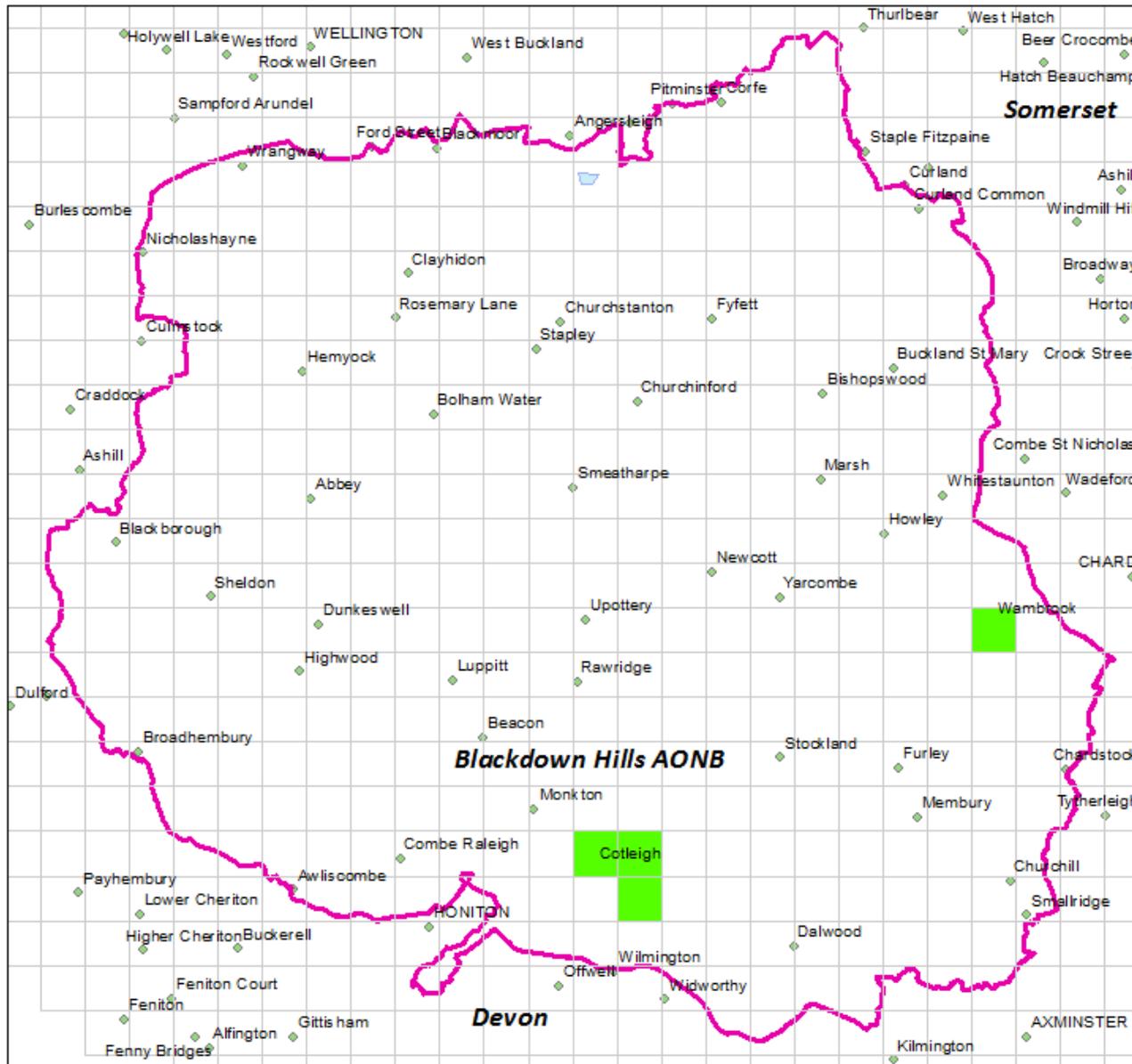


Cumulative Nathusius Pipistrelle Passes 2011-2016 Blackdowns Big Bat Survey

Blackdown Hills AONB
 Nathusius Bat Passes



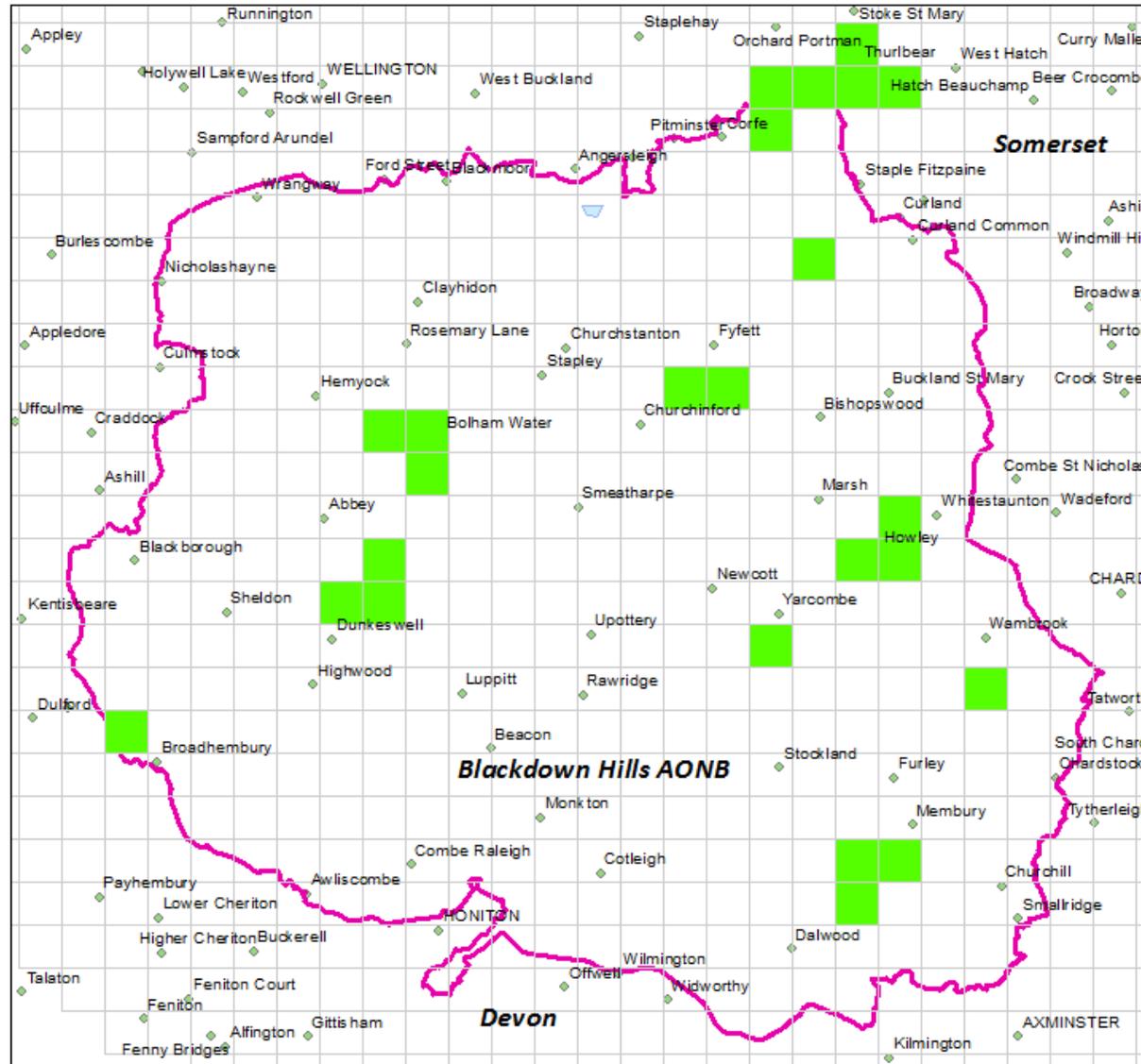
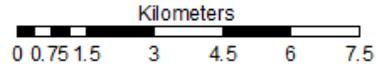
Kilometers
 0 0.75 1.5 3 4.5 6 7.5



Cumulative Noctule Passes

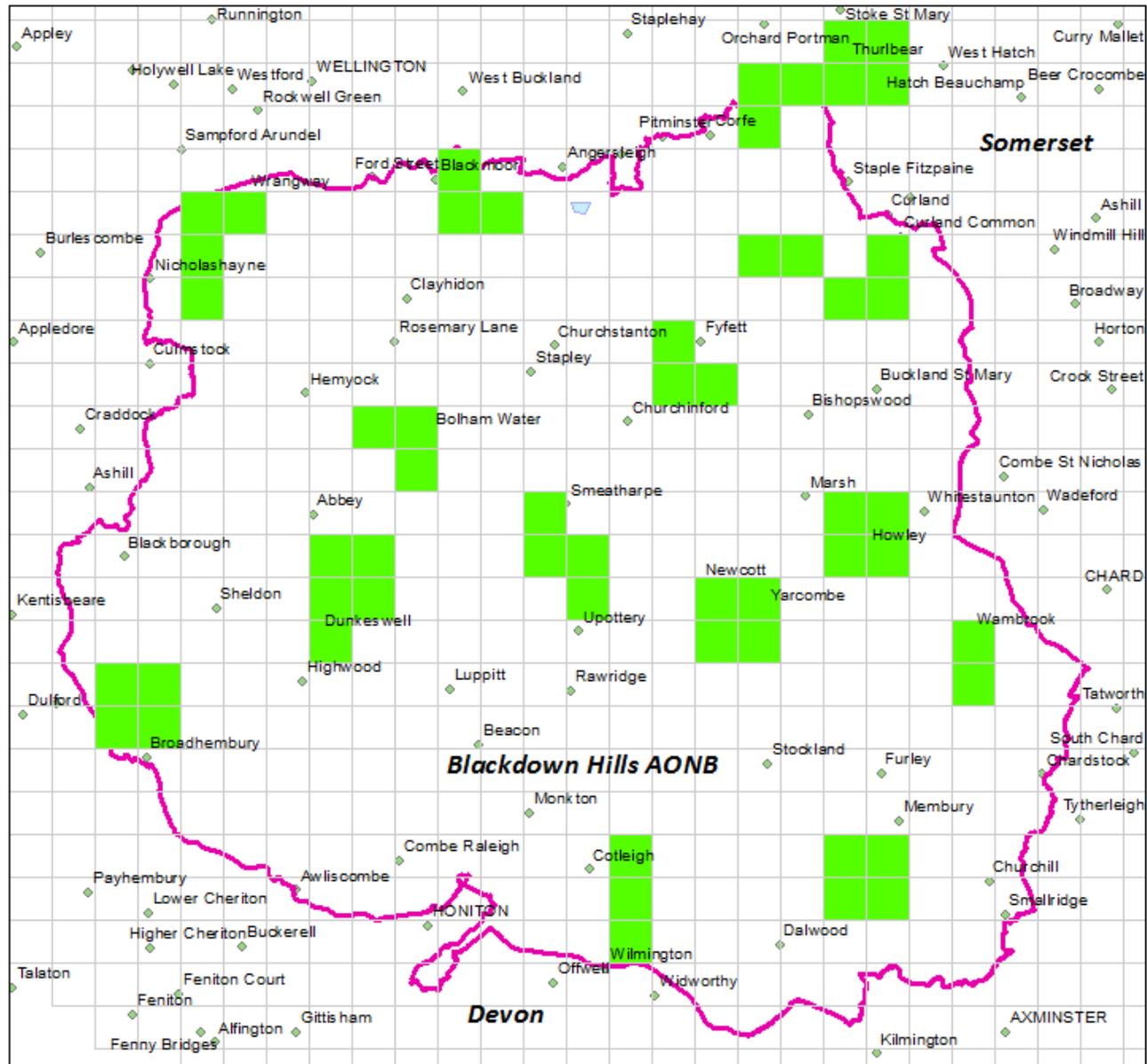
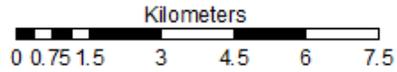
2011-2016 Blackdowns Big Bat Survey

Blackdown Hills AONB
Noctule Passes



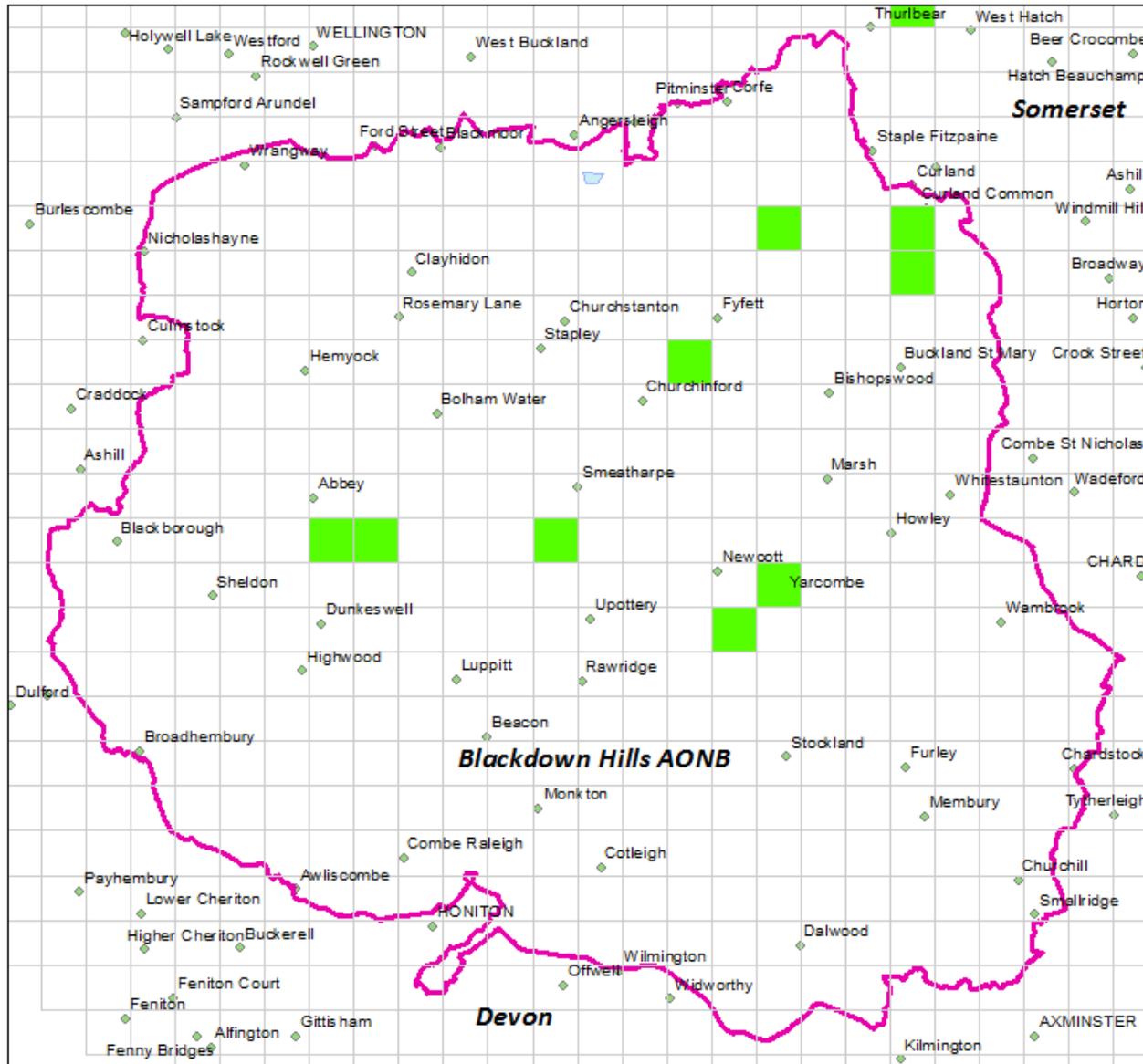
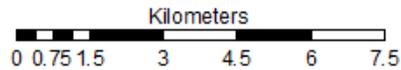
Cumulative Myotis Species Passes 2011-2016 Blackdowns Big Bat Survey

Blackdown Hills AONB
Myotis sp Passes



Cumulative Barbastelle Passes 2011-2016 Blackdowns Big Bat Survey

Blackdown Hills AONB
Barbastelle Passes



3.2 Bat passes recorded along each transect route

The recordings from each transect were analysed separately and divided into the walk and stop sections shown in the following tables and maps. It is, of course, impossible to draw any firm conclusions from data collected on one night only and the following observations must be treated with caution. Six years of surveying can however allow some tentative comparisons and at least show those areas which appear to be consistently used by large numbers of bats.

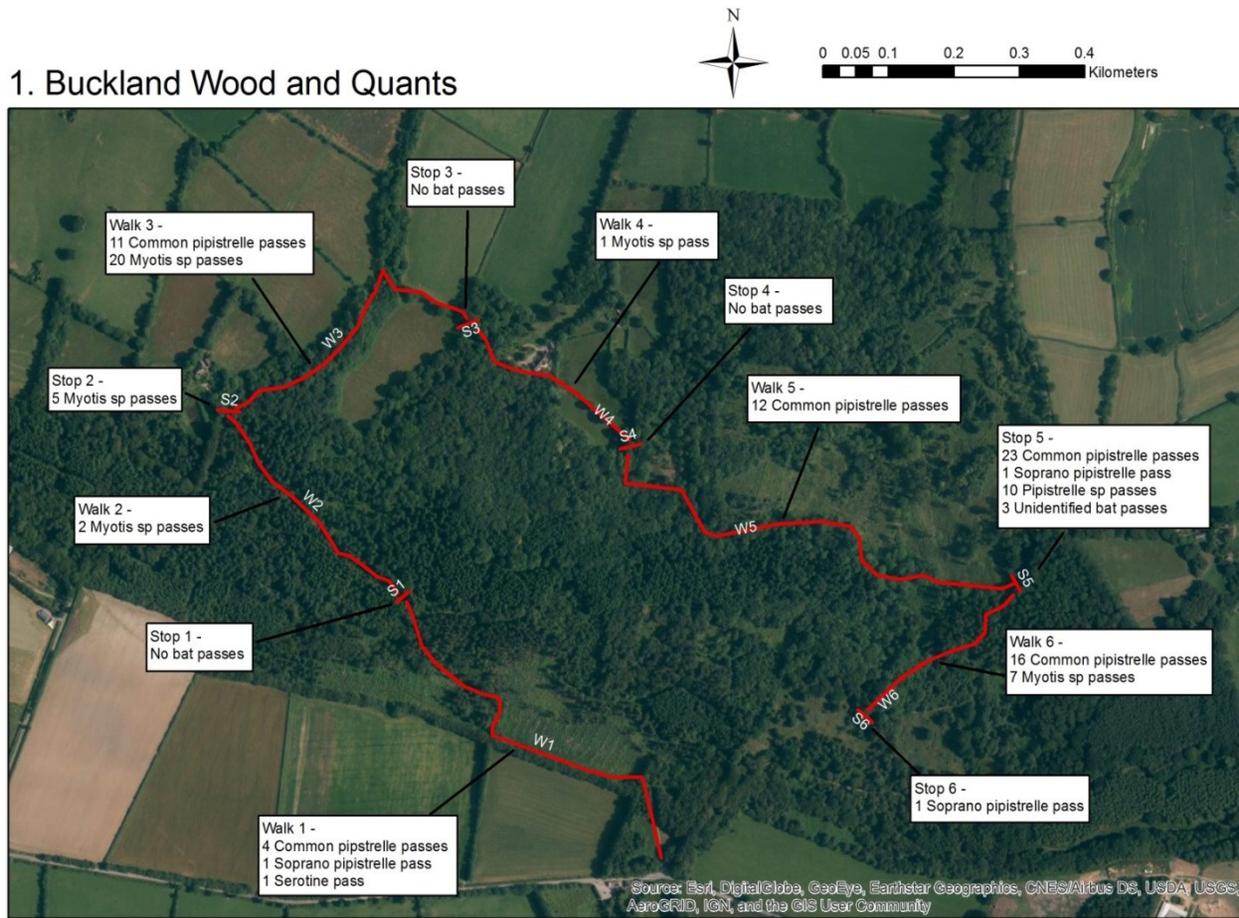
3.2.1 Transect 1: Buckland Wood and Quants

Year	Bat species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	9		1	21	1	19			2	7	3		63
	Myotis sp	4		3		11	16	1		4				39
	Unidentified bat passes		1											1
2012*	Lesser Horseshoe													0
	45 Pipistrelle			3		1		7		2				13
	Myotis sp					11	2	4			3			20
	Unidentified bat passes						1	1				1		3
2013	Lesser Horseshoe												1	1
	45 Pipistrelle	4		54	11		6					1	2	78
	55 Pipistrelle												1	1
	Myotis sp					4		2		5		2	2	15
	Serotine				5									5
	Unidentified bat passes				6		1						1	8
2014*	45 Pipistrelle	6		2				6		4	8	6		32
	Myotis sp		2											2
2015 *	45 Pipistrelle	17	9	29	9	5	12	3	7	20	5	17		133
	55 Pipistrelle		1											1
	Pipistrelle sp				1	4			1	2				8
	Myotis sp					7	3	6		3				19
	Long-eared bat sp						1			1			1	3
	Unidentified bat passes	1	1		1	2		1	1	1	1	1	1	10
2016*	45 Pipistrelle	4				11				12	23	16		66
	55 Pipistrelle	1									1		1	3
	Pipistrelle sp										10			10
	Myotis sp			2	5	20		1				7		35
	Serotine	1												1
	Unidentified bat passes										3			3

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

The first two sections are never very busy and that part of the Buckland Wood and Quants transect is rather exposed. A Serotine at Walk 1 is a little unexpected as it is not classic Serotine habitat. Walk 2 does seem to be used early in the night as it recorded 54 and 29 Common Pipistrelle passes in 2013 and 2015 respectively but in the “reverse years” only 3 in 2012 and none at all in 2014 and 2016. Something of the same pattern shows in other parts of this transect. There appears to be more Myotis activity than in previous years notably at Walk 3 and Walk 6. Stop 5 was busier than ever with pipistrelles. The Lesser Horseshoe Bat recorded in 2013 was surprising at the time and with more data looks even more “out of place”.

1. Buckland Wood and Quants



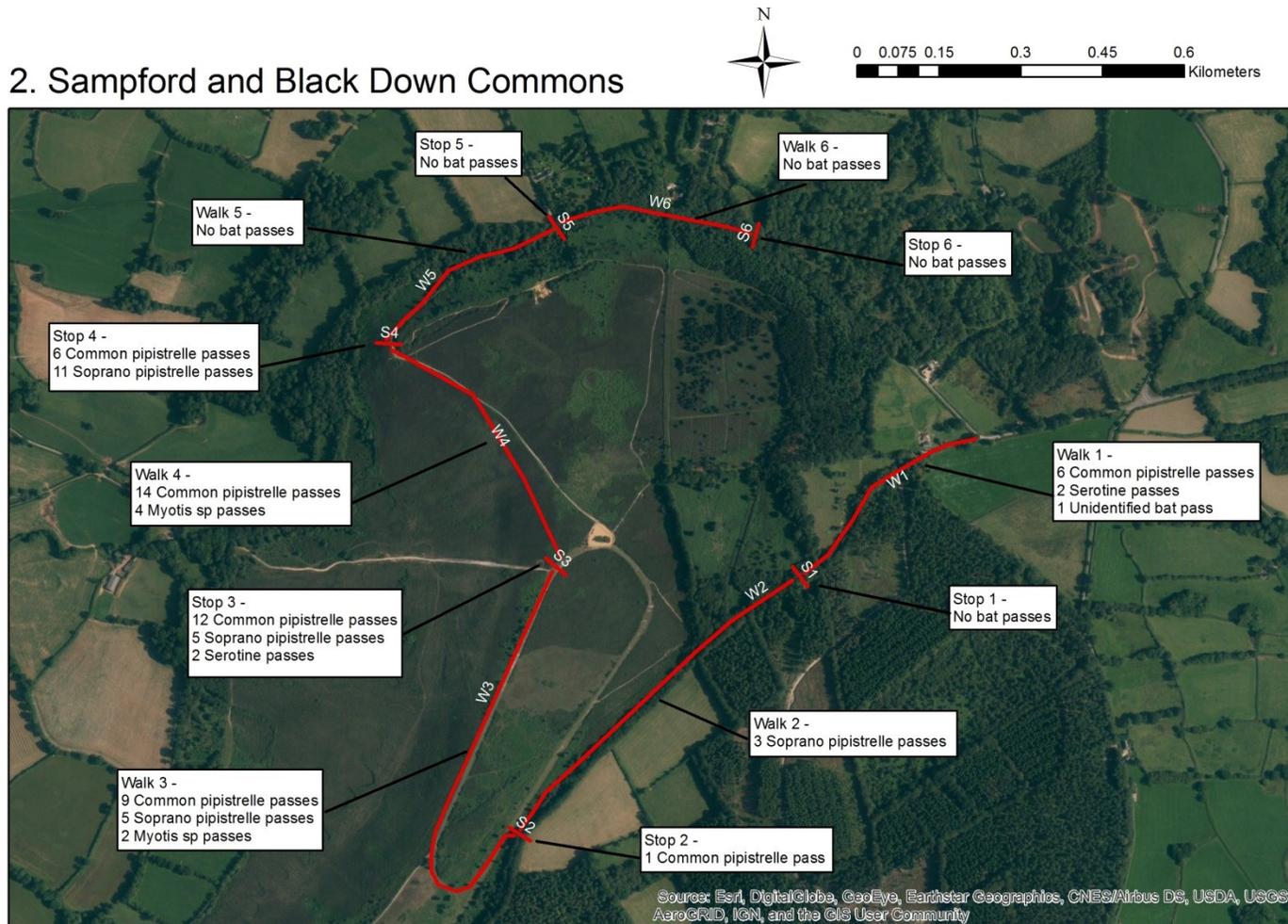
3.2.2 Transect 2: Sampford and Black Down Commons

Year	Bat species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	2	1	3		1	2					7	1	17
	Myotis sp										1	1	1	3
	Serotine				1	3					5			9
	Unidentified bat passes						1	1						2
2012*	45 Pipistrelle	8	1	5	2	3				16	31	3		69
	Pipistrelle sp												5	5
2013	45 Pipistrelle	2	5	21	4	24	24	21	2			5	41	149
	55 Pipistrelle	2				11	4	17			3			37
	Pipistrelle sp						3	1	1					5
	Myotis sp					1	3					1		5
	Unidentified bat passes			1			2	2						5
2014*	45 Pipistrelle	17		4	1	50	28	18	1	17	21		1	158
	55 Pipistrelle		1			4	12	4		2				23
	Serotine	3						1						4
	Myotis sp		2	2			3			1	3			11
	Unidentified bat passes			1		3	3	1	1	2				11
2015 *	45 Pipistrelle	4		14	13	8				15		6	12	72
	55 Pipistrelle	3	1	2	23							1		30
	Pipistrelle sp				5	1								6
	Myotis sp						1			1		1		3
	Long-eared bat sp											1		1
	Unidentified bat passes	1		3	1	1						1	2	9
2016*	45 Pipistrelle	6			1	9	12	14	6					48
	55 Pipistrelle			3		5	5		11					24
	Myotis sp					2		4						6
	Serotine	2					2							4
	Unidentified bat passes	1												1

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

It was a cooler and breezier year in 2016. That might have contributed to the dominance of Soprano Pipistrelle passes at Walk 2 where there were none until 2015. Conversely Stop 2 had only 1 pass as against a total of 42 in 2015. The much higher level of activity at Walk 3 in 2013 and 2014 may be related to the lighter winds. 2016 is much more like 2011, 2012 and 2015. Stop 4 is also exposed and usually not very productive but in 2016 there were 17 passes from two different species.

2. Sampford and Black Down Commons



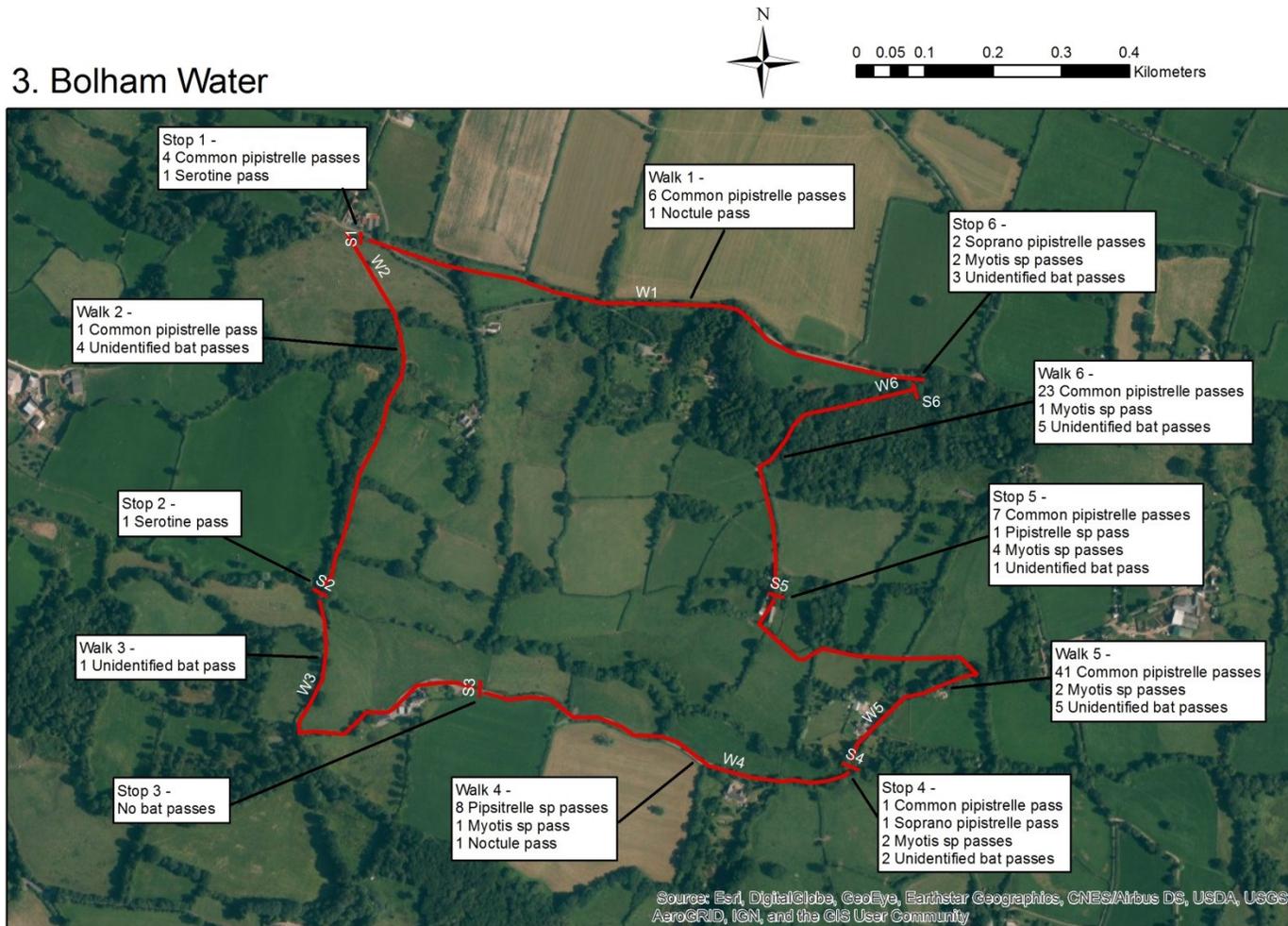
3.2.3 Transect 3: Bolham Water

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	31	17	1		5	3	31	23	34	47	67	49	308
	55 Pipistrelle									3	1			4
	Myotis sp	1		1	7					3		2	2	16
	Serotine									5				5
	Unidentified bat passes										1			1
2012*	45 Pipistrelle	6		12		5		6	18	36	40	27	47	197
	55 Pipistrelle	2		6		4		2	16	1		9	1	41
	Pipistrelle sp			1				1		2				4
	Myotis sp	1	2	7				3	16	3	6	26	1	65
	Unidentified bat passes	1		1				1	2	1		1		7
2013	45 Pipistrelle	5	4	1	10	7		3	2	1	8		1	42
	55 Pipistrelle	2		1	3	1		7	14	16	20	2	10	76
	Pipistrelle sp	2		1		1			2					6
	Myotis sp	2		3	45			4	13		2	1		70
	Unidentified bat passes	3		4	3	2		4	1			1	1	19
2014*	45 Pipistrelle	5	13	8	10	15		23	8	15	15	16	4	132
	55 Pipistrelle	3	10	5	3	1			5	8				35
	Myotis sp	1	3	10	37	8			1	1				61
	Unidentified bat passes		1		4	3		1		1	1			11
2015	45 Pipistrelle	10	38	39	22	3		20	13	9	11	30	11	206
	55 Pipistrelle	4	2	4				10	1		2		1	24
	Pipistrelle sp			3										3
	Serotine			2						2				4
	Myotis sp	1		4	3				5	1		1		15
	Unidentified bat passes	4		4					2			1		11
2016*	45 Pipistrelle	6	4	1					1	41	7	23		83
	55 Pipistrelle								1				2	3
	Pipistrelle sp							8			1			9
	Serotine		1		1									2
	Myotis sp							1	2	2	4	1	2	12
	Noctule	1						1						2
	Unidentified bat passes			4		1			2	5	1	5	3	21

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

Only heterodyne recordings available so any comparison is unreliable. The written forms on which we have had to rely in this case almost invariably under-estimate the number of passes and thus the lower than expected levels of activity in Walk 4 to Walk 5 and Walk 6 to Stop 6 may not reflect what was actually happening. The surveyors heard Noctule bats for the first time along this transect, which is a nice addition to information about bat activity throughout the Blackdown Hills.

3. Bolham Water



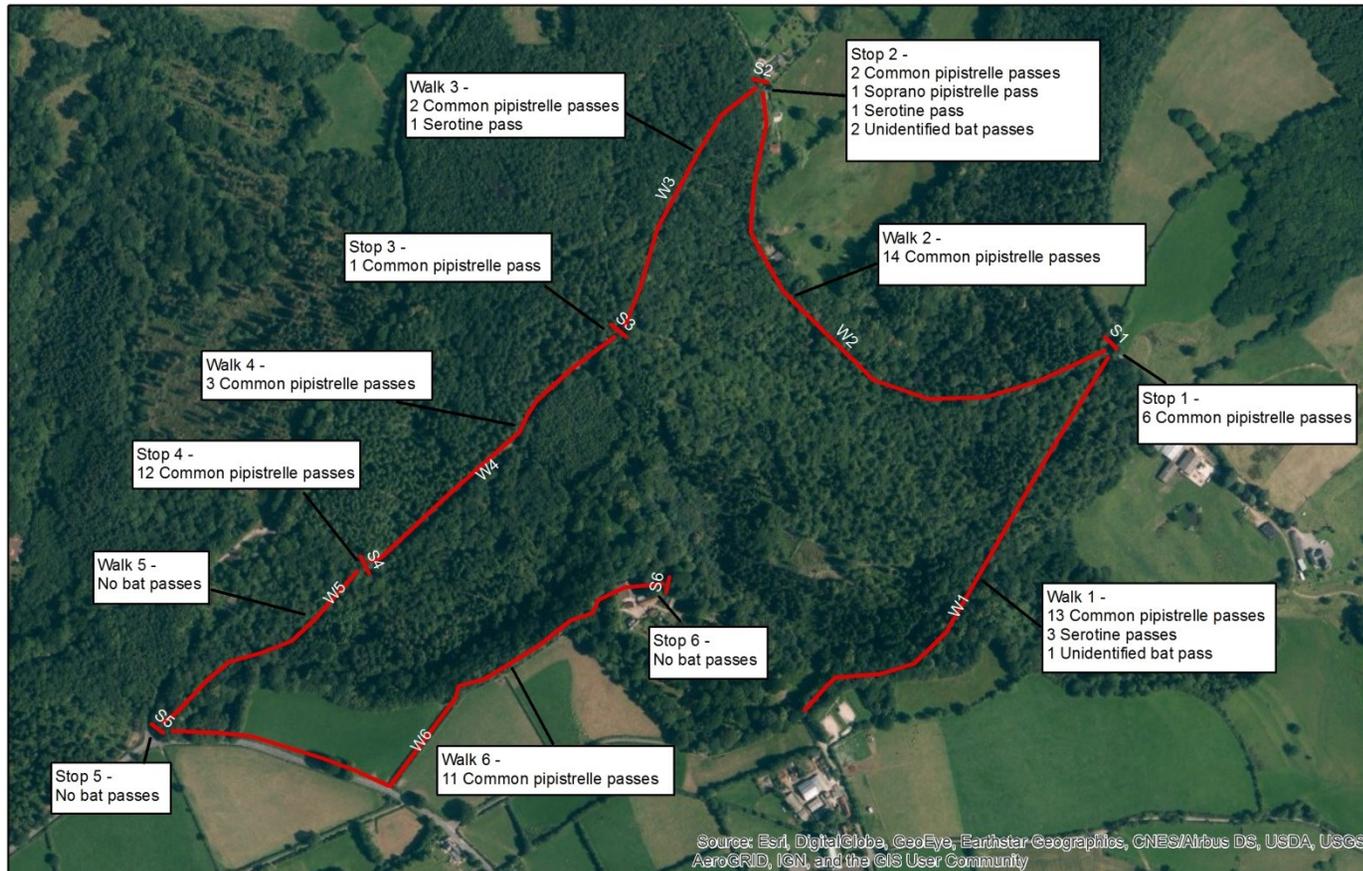
3.2.4 Transect 4: Castle Neroche

Year	Bat Species	Transect section												Total	
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6		
2011	Lesser Horseshoe											1		1	
	45 Pipistrelle	12	4			2	11	8	25	2	1	9	2	76	
	55 Pipistrelle	3				1								4	
	Pipistrelle sp	1				3	3		2	2			4	15	
	Myotis sp	3	1	9		3	6	9	1	6				3	41
	Barbastelle	3	3	3											9
	Unidentified bat passes	2	4		1		1	2		1		1	1	1	13
2012*	Lesser Horseshoe											1		1	
	45 Pipistrelle	10	65	36	1	9	2	22			1	27	2	175	
	Pipistrelle sp													0	
	Myotis sp		1						1					2	
	Serotine				2									2	
Unidentified bat passes							1		2		6		9		
2013	45 Pipistrelle	59	9	20	3	2	5	6	3	12		9	14	142	
	55 Pipistrelle	4	3	2		5			2				5	21	
	Pipistrelle sp								1				1	2	
	Myotis sp	4	2	9			1				3			19	
	Serotine			1			3							4	
	Barbastelle						10							10	
	Unidentified bat passes	2	1	1		1				1				6	
2014*	45 Pipistrelle	20	21	37	1	4	11	19	16	6	17	36	14	202	
	55 Pipistrelle		1	6	3			6			5	4	3	28	
	Pipistrelle sp	2									1			3	
	Myotis sp	1	1	17	2		1	2	5	1		1		31	
	Long-eared bat sp			2										2	
	Unidentified bat passes			2						1	2	2		7	
2015	45 Pipistrelle	98	39	30	3	15	31	29	2	22	37	29	12	347	
	55 Pipistrelle		2			2		6		1		1		12	
	Pipistrelle sp	1				2	1			2		1		7	
	Serotine								3					3	
	Myotis sp	1						1	7	1				10	
	Barbastelle			5										5	
	Unidentified bat passes	1				2		3				2		8	
2016*	45 Pipistrelle	13	6	14	2	2	1	3	12			11		64	
	55 Pipistrelle				1									1	
	Serotine	3			1	1								5	
	Unidentified bat passes	1			2									3	

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

Recorded at a sampling rate of 22 bits which we converted so as to be able to open the sonograms. The resulting images were not easy to read and it was not possible to get any reliable measure of peak frequency. Any comparison with previous years is impractical but the total of passes is improbably low in this very bat rich transect. It has always been a reliable place to record Barbastelles but without a peak frequency it is difficult to identify that species. It remains puzzling that this piece of mature deciduous woodland does not seem to harbour any Noctules.

4. Castle Neroche



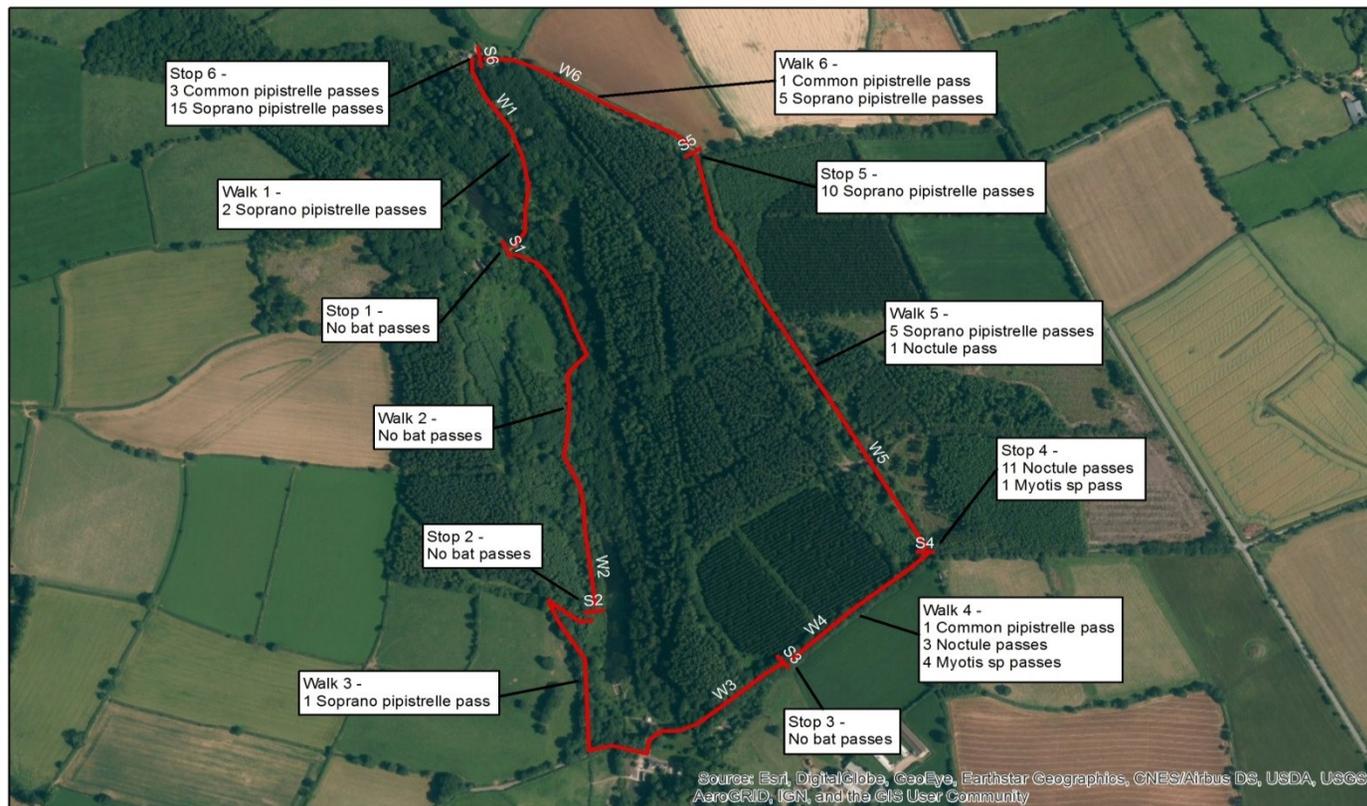
3.2.5 Transect 5: Otterford Lakes

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	46	28	36	1	53		3		10			12	189
	55 Pipistrelle	4				3							4	11
	Myotis sp	2	8	51	7	14	2				1		1	86
	Noctule				1	1			1					3
	Serotine			4	1	2								7
	Unidentified bat passes					1								1
2012*	45 Pipistrelle	1	29	47	119	43			1	6	8	4	36	294
	55 Pipistrelle	1	44	4	47	15								111
	Myotis sp		54	37	41	21							2	155
	Serotine				2							1		3
	Long-eared bat sp		1											1
	Unidentified bat passes		6	3		1				1				11
2013	45 Pipistrelle	18	3	10		5		5	3	4	3		1	52
	55 Pipistrelle	5				5		1		2	3			16
	Pipistrelle sp					2								2
	Myotis sp	1		8		9		1		7	2	2	1	31
	Noctule									1				1
	Unidentified bat passes	1	3	3		12		3	2	3	1		2	30
2014*	45 Pipistrelle	38	60	91	43	32			9	12	7	2	4	298
	55 Pipistrelle	27	35	24	6	4				1	3	2		102
	Pipistrelle sp					2								2
	Myotis sp	9	25	37		6				1	1	1		80
	Serotine				2									2
	Unidentified bat passes	1		7		2			5	2	1			18
2015	45 Pipistrelle	31	66	76	29	30	2	23	7	60	6	37	55	422
	55 Pipistrelle	1	2	5	7	5				2				22
	Pipistrelle sp							1						1
	Serotine			1		1								2
	Noctule				6	2								8
	Myotis sp	3		18	1	8	4	5						39
	Unidentified bat passes	1		2	4	3		2		5		2	2	21
2016*	45 Pipistrelle							1				1	3	5
	55 Pipistrelle	2				1				5	10	5	15	38
	Noctule							3	11	1				15
	Myotis sp							4	1					5

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

This transect was recorded using an EM2 detector. That may cast doubt on any comparative assessment, but nonetheless 2016 does look very different from the previous years. The pond at Stop 1 is usually full of bat activity as is the walk along the stream at Walk 2, but no bat activity was recorded at either in 2016. The pond may be less popular for feeding if it is weeded up but then one might expect more in the wood and by the lower lake at Stop 2. There seem to be disturbingly few *Myotis* bats. The better news is the return of *Noctules* to a site where they have a long history from well before the Big Bat Surveys began. The key to this site is likely to be the quality of the water bodies for insects and there has to be some concern that it has deteriorated.

5. Otterford Lakes



3.2.6 Transect 6: Staple Hill Plantations

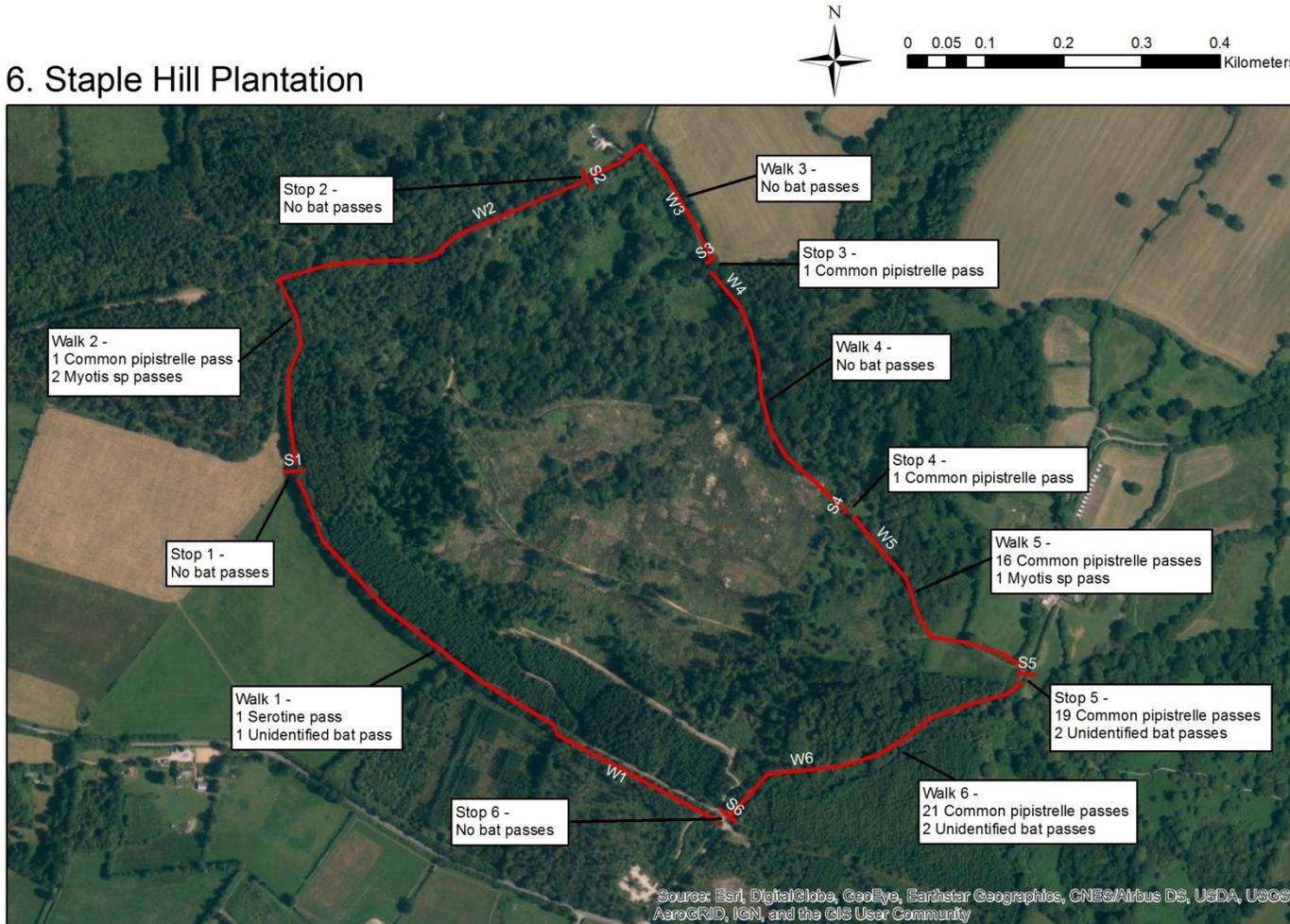
Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	4							3	16	1	8	7	39
	Myotis sp	3			4									7
	Serotine									2	3	1		6
	Unidentified bat passes				1	2								3
2012*	Lesser Horseshoe					1								1
	45 Pipistrelle			4				14	1	6		16		41
	Myotis sp					1					1	1		3
	Unidentified bat passes								1					1
2013	45 Pipistrelle	5		1	2			1	5	11	1	23	1	50
	55 Pipistrelle									4				4
	Myotis sp				5		1	4			1			11
	Serotine							4						4
	Unidentified bat passes						1			1				2
2014*	45 Pipistrelle				2			11	1	4	2	20		40
	55 Pipistrelle			3						1				4
	Myotis sp		Not recorded				2		1					3
	Serotine					3			1					4
	Unidentified bat passes			1										1
2015	45 Pipistrelle	7		8	1		2	9	2	5	3	9	11	57
	Pipistrelle sp						1	2		1		1	1	6
	Noctule										1			1
	Myotis sp					6	6	1						13
	Barbastelle			1										1
	Unidentified bat passes				1			1			1			3
2016*	45 Pipistrelle			1			1		1	16	19	21		59
	Serotine	1												1
	Myotis sp			2						1				3
	Unidentified bat passes	1									2	2		5

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

This is never the most intensive of transects and much of it is quite high and exposed. The most active part seems to be Walk 6 and that is so whether it is at the start or the end of the walk. Stop 2 seems to have bats only in “normal” years but even then not many. The first parts to be

walked in 2016 are very much more rewarding than the later parts with Stop 5 at its busiest ever. Walk 1 to Stop 4 recorded a total of only 6 passes. The lack of activity on the higher altitudes (e.g. Stop 6 and Stop 1) is unsurprising but why are there so few passes at the bottom of the hill? This transect had no Soprano Pipistrelles and only one “big bat”, but this year it has had an encouraging increase in Myotis species.

6. Staple Hill Plantation



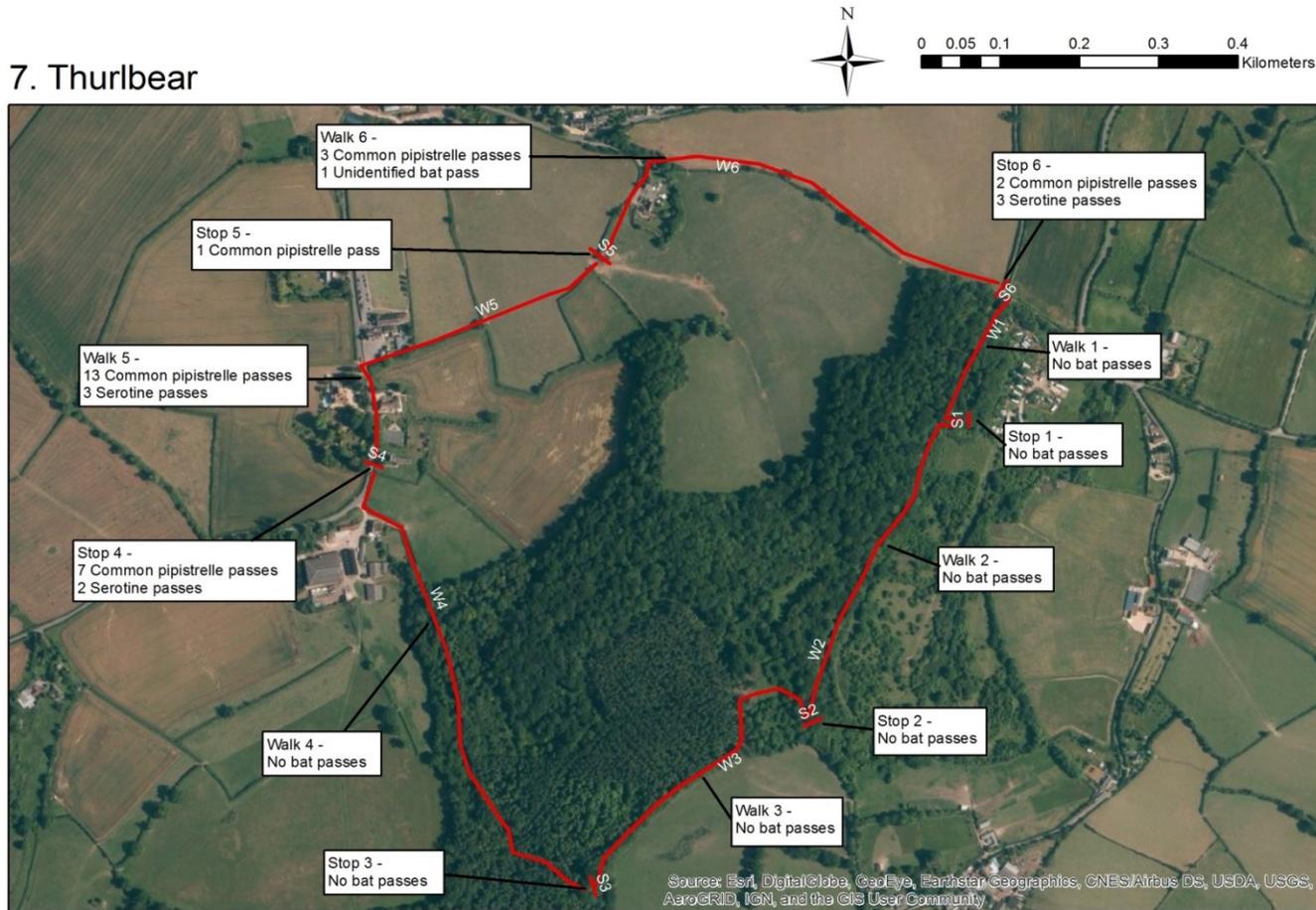
3.2.7 Transect 7: Thurlbear

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	2				1		10	7	9	2	10	11	52
	55 Pipistrelle							4				1		5
	Pipistrelle sp							1						1
	Myotis sp			3		7	1	1		2			1	15
	Noctule					1				1				2
	Serotine							3					1	4
	Unidentified bat passes	5				2								7
2012*	45 Pipistrelle	This portion of the survey was missed in 2012				10		20	25	17	1	7	23	103
	55 Pipistrelle	This portion of the survey was missed in 2012							3			1		4
	Pipistrelle sp	This portion of the survey was missed in 2012						1						1
	Myotis sp	This portion of the survey was missed in 2012					1	2	2	3		1		9
	Unidentified bat passes	This portion of the survey was missed in 2012						2	2					4
2013	45 Pipistrelle				1	20	3	10	1	5	2	8	2	52
	55 Pipistrelle		10	15		1		1		2				29
	Pipistrelle sp					1								1
	Myotis sp						2	3						5
	Serotine								4	2		3	5	14
	Noctule							3	1					4
2014*	45 Pipistrelle	2	1			2								5
	55 Pipistrelle							1	3	9				13
	Myotis sp	6		3		1		2		1				13
	Barbastelle		2											2
	Unidentified bat passes		1			2		1						4
2015	45 Pipistrelle		6	2	2	17	5	50	8	9		5	8	112
	55 Pipistrelle			1		3	3	31	1				1	40
	Pipistrelle sp					1								1
	Serotine								4	1	3		1	9
	Myotis sp			2		1		2	2			2		9
	Long-eared bat sp			1										1
	Unidentified bat passes			1		1	1	2					2	7
2016*	45 Pipistrelle	This portion of the survey was missed in 2016							7	13	1	3	2	26
	Serotine	This portion of the survey was missed in 2016							2	3			3	8
	Unidentified bat passes	This portion of the survey was missed in 2016										1		1

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

Unfortunately it was not possible to carry out more than 5 sections of this transect. The results that were obtained show a consistency which is not apparent in other transects. The anomalies seem to be in Walk 6 in 2011 to 2013 and in Stop 6 in 2012. This site is known from other bat work there to be influenced more than most by the weather and the whereabouts of livestock.

7. Thurlbear



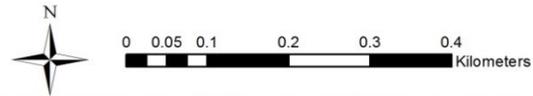
3.2.8 Transect 8: Dunkeswell

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	55	5	48	2	48	46	115	2	5		26	33	385
	55 Pipistrelle						3							3
	Myotis sp	7		18		20	4	7		7	16	14		93
	Noctule							2						2
	Serotine	8						3				1	1	13
	Unidentified bat passes	1	6			2	1	5		1		5		21
2012*	45 Pipistrelle	8	1	2	2	7			1	1	7	28	2	59
	55 Pipistrelle				1	1						5	1	8
	Myotis sp	6	5	1		19				1		3		35
	Noctule						1							1
	Long-eared bat sp		2							1				3
	Unidentified bat passes					5					1	1		7
2013	45 Pipistrelle	1	4	3	12	6	7	35	7	4	22	7	2	110
	55 Pipistrelle							1		2	3			6
	Pipistrelle sp	2						1						3
	Myotis sp			3	45	7		1	1	6		1		64
	Serotine					2	1			2				5
	Noctule											1		1
	Unidentified bat passes				11	5		6	1	2	3	2	2	32
2014*	45 Pipistrelle	20	4	2	3			3	1	27	1	19	11	91
	Myotis sp				30	5				12	2			49
	Serotine								2					2
	Barbastelle		2		1	1		3						7
	Long-eared bat sp									2				2
	Unidentified bat passes		1	1										2
2015	45 Pipistrelle		8	4		9					4		2	27
	55 Pipistrelle	2	1			19		18			4	8	1	53
	Pipistrelle sp					3		1		1				5
	Serotine										1			1
	Noctule											1		1
	Myotis sp				3	3					12			18
Unidentified bat passes				1	4			1			1		7	
2016*	Pipistrelle sp	1		1		8		1	6	4		9	6	36
	Serotine		1							1	8		2	12
	Noctule						1						3	4
	Unidentified bat passes					3		1			2		4	10

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

This transect was recorded as heterodyne signals only. The written form has probably under-estimated the number of passes but we felt we could rely on species identification with the exception of passes assigned by the surveyors to *Plecotus* species. Out of an abundance of caution we have listed such passes as Bat Species as Long-eared Bats are notoriously difficult to identify in the field. With those provisos it is noticeable that the first part (Stop 6 to Stop 4) was busier than normal. Walk 4 seems to do better in even years but as this is right in the middle of the walk whichever way round it is undertaken the difference seems unlikely to be the result of timing. There is a possibility of Serotines being mistaken for Common Pipistrelles and Myotis bats for pipistrelles even by experienced bat workers working in heterodyne.

8. Dunkeswell



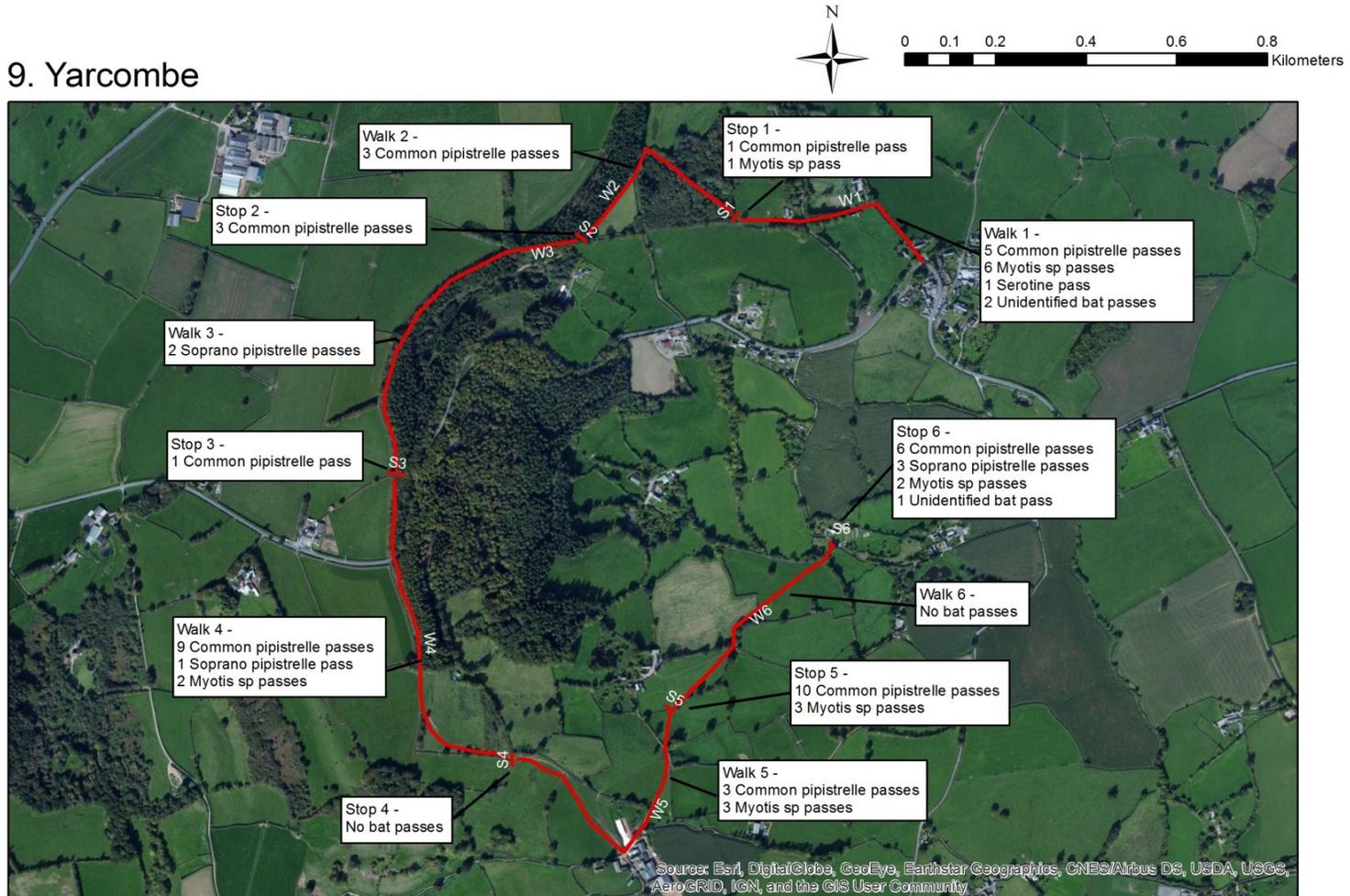
3.2.9 Transect 9: Yarcombe

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	15	1	7	1			6		14		14	20	78
	55 Pipistrelle								3					3
	Myotis sp	25	8			13					2			48
	Serotine		1					2				2		5
	Barbastelle									14				14
	Unidentified bat passes	3				3	1	2		2				11
2012*	45 Pipistrelle	24	1	8		1		15	4	55	90	21	32	251
	Myotis sp							5	1					6
	Serotine									3				3
	Unidentified bat passes		1	6	27	2		2		1				39
2013	45 Pipistrelle	9	4	25	16	23	8	1	2	17	12	19	6	142
	55 Pipistrelle	2		6		8	11							27
	Myotis sp	2	4	3			1	1						11
	Serotine	5				1								6
	Unidentified bat passes	1		1		3	4			1				10
2014*	45 Pipistrelle	5	6	2		6		15	10			10		54
	55 Pipistrelle					4				19		9	12	44
	Pipistrelle sp									1			1	2
	Myotis sp	3	1		1	2	1						3	11
	Noctule												1	1
	Unidentified bat passes	1		4						2			3	10
2015	45 Pipistrelle	9	19	31	22	8		5	3	15		5	16	133
	55 Pipistrelle			5		4			1	5		2		17
	Pipistrelle sp				1				2	3		1		7
	Serotine	2		1										3
	Myotis sp	8	2								12	1		23
	Barbastelle	2												2
	Unidentified bat passes								1	1				2
2016*	45 Pipistrelle	5	1	3	1		1	9		3	10		6	39
	55 Pipistrelle					2		1					3	6
	Myotis sp	6	1					2		3	3		2	17
	Serotine	1												1
	Unidentified bat passes	2											1	3

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

Here Walk 1 to Walk 2 seem to be busier in odd years so may be used by bats early in the night. Walking in the reverse direction surveyors may be arriving after the bats have fed for a bit and moved on. Walk 5 seems unusually quiet this time as was Walk 6. It is not easy to guess why. The level of activity at Stop 5 is fairly typical but this stop has had two unusual years. In 2012 there were 90 Common Pipistrelle passes and in 2014 no passes at all. What was attracting the flies in 2012 but not in other years?

9. Yarcombe



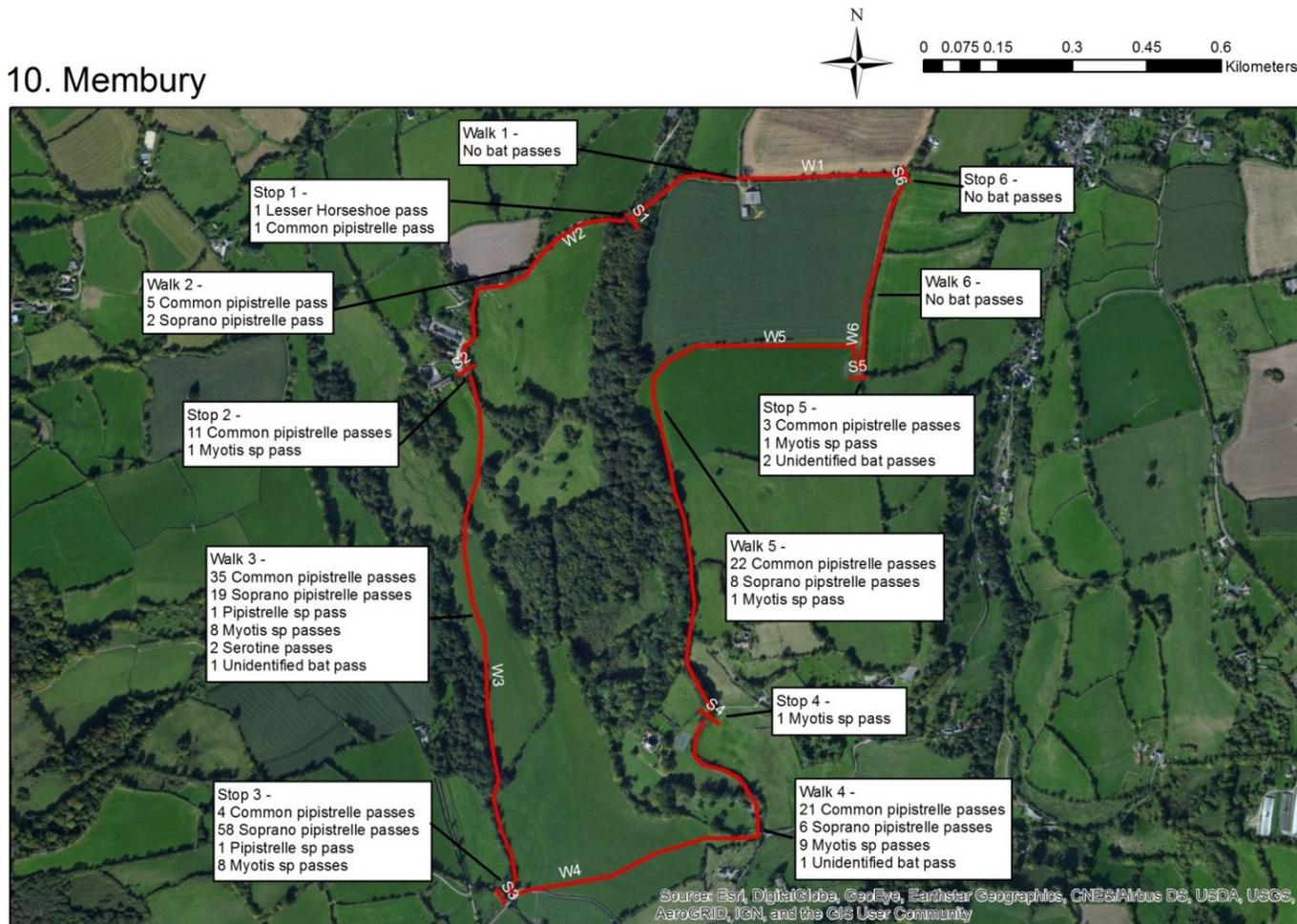
3.2.10 Transect 10: Membury

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	7		5	1	40	47	25		1	10	3	11	150
	55 Pipistrelle					30	26	11				2		69
	Myotis sp	3	11	2	1	9	6	21	1	5	1	22		82
	Noctule	1				2				1				4
	Leisler's					5								5
	Serotine			1		18		2		2				23
	Unidentified bat passes									1			1	2
2012*	Lesser Horseshoe									1				1
	45 Pipistrelle	3		5	3	22	12	5	3	21		22	39	135
	55 Pipistrelle			5	4	7		2	3	7		4	7	39
	Pipistrelle sp	2				1	1	1				1		6
	Myotis sp					4		17	3	14				38
	Serotine							3	1	3				7
	Unidentified bat passes	2				1		1				3		7
2013	45 Pipistrelle		14	4	8	9	30	4		10	4	5	8	96
	55 Pipistrelle		13	5		4	5	2						29
	Pipistrelle sp							1						1
	Myotis sp			2		1	4	2	3	2		1	1	16
	Serotine			3	33	3		3			2			44
	Noctule	2		6										8
	Unidentified bat passes			1	1									2
2014*	45 Pipistrelle	3		2	6	24	33	27		10		2	3	110
	55 Pipistrelle					10	5	1						16
	Myotis sp	2				2	14	3	4	7				32
	Serotine				3		1	1			1			6
2015	Lesser Horseshoe					1								1
	45 Pipistrelle	8	10	4	2	44	20	18	1	46	1	9	8	171
	55 Pipistrelle		1	2		18	2	4				2		29
	Pipistrelle sp					2								2
	Serotine							1						1
	Myotis sp			1		5	11				2			19
	Barbastelle		1											1
Unidentified bat passes			1						1				2	
2016*	Lesser Horseshoe		1											1
	45 Pipistrelle		1	5	11	35	4	21		22	3			102
	55 Pipistrelle			2		19	58	6		8				93
	Pipistrelle sp					1	1							2
	Myotis sp				1	8	8	9	1	1	1			29
	Serotine					2								2
Unidentified bat passes					1		1			2			4	

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

This is another case of a difference between odd and even years particularly at Stop 1. The Lesser Horseshoe at this section is interesting and compares with the ones at Walk 3 in 2015 and Walk 5 in 2012. Walk 3 is always very busy and 66 passes is encouraging. Stop 3 has recorded both common pipistrelle species in all but one year but never before have the Soprano Pipistrelles outnumbered the Common Pipistrelles. These two very similar species are often found feeding together but it is possible that there may be an element of competition between them. We do not seem to have any big bats.

10. Membury



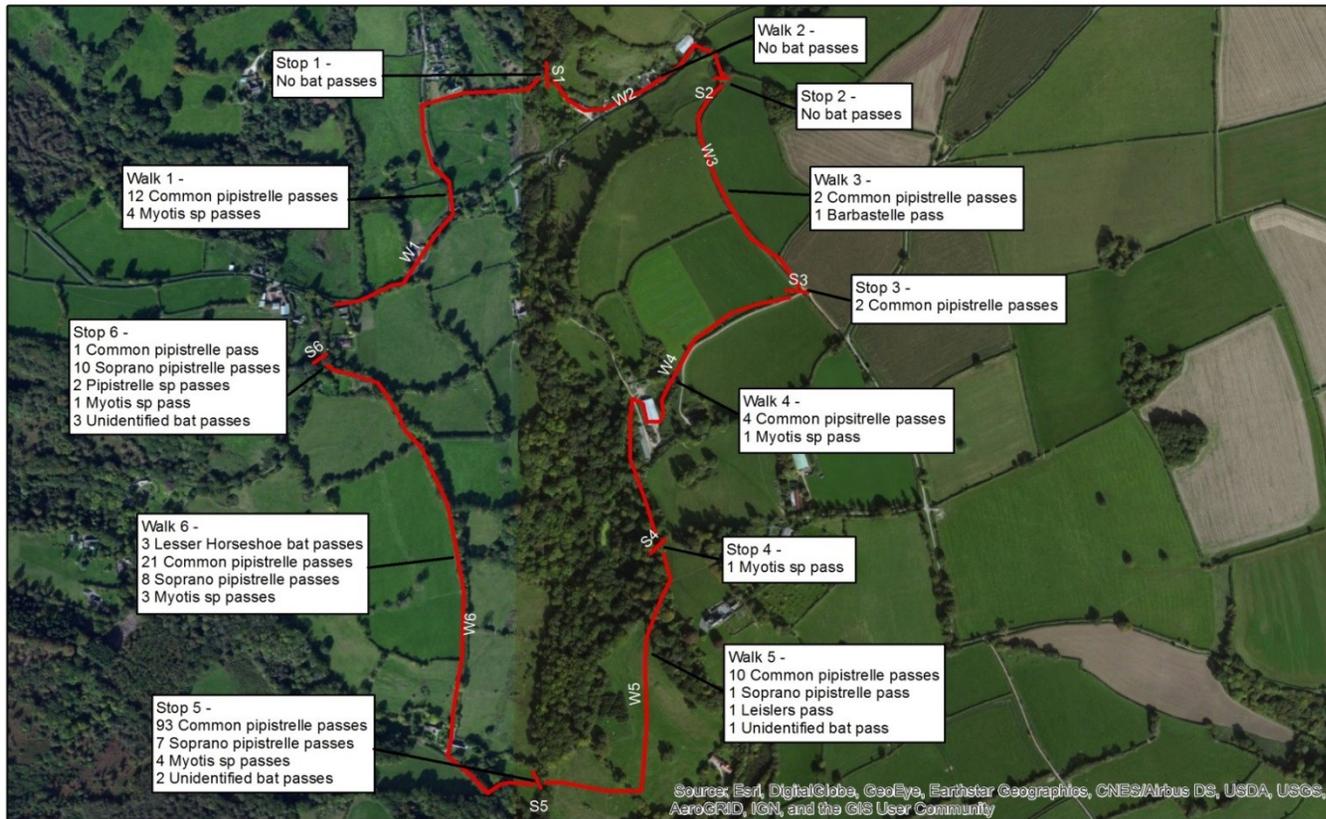
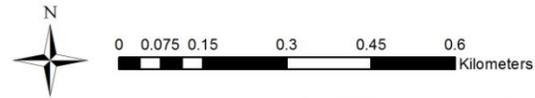
3.2.11 Transect11: Wambrook

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	Lesser Horse shoe											4		4
	45 Pipistrelle	16						6		3		6	20	51
	55 Pipistrelle						2	2		6	3	9	2	24
	Myotis sp	5								1		4	4	14
	Noctule											1		1
	Serotine					1				2		3		6
	Long-eared bat sp	3												
Unidentified bat passes							1						2	3
2012*	Lesser Horse shoe												1	1
	45 Pipistrelle		4	16	5			3		9		13	16	66
	55 Pipistrelle											11	3	14
	Pipistrelle sp										1		1	2
	Myotis sp					3				1	2	5	1	12
Unidentified bat passes										1			1	
2013	Lesser Horse shoe		2											2
	45 Pipistrelle			1			10			12		8		31
	55 Pipistrelle						1							1
	Myotis sp								1			5		6
	Serotine				1									1
	Leislars									1				1
	Unidentified bat passes			1								1		2
2014*	Lesser Horse shoe										1	2	3	6
	45 Pipistrelle	5		8	1			2		1	7	23		47
	55 Pipistrelle			6						3	1	1		11
	Pipistrelle sp			1								3	2	6
	Myotis sp	2		3						6	3	10	1	25
	Serotine											4		4
Unidentified bat passes			1						1	1	1		4	
2015	Lesser Horse shoe					1								1
	45 Pipistrelle	4		2	1	3	7	28	10	36		19	11	121
	55 Pipistrelle	1	1					3	1	1		4	4	15
	Nathusius' Pipistrelle		1											1
	Pipistrelle sp						7		5					12
	Serotine						12	6						18
	Myotis sp										1			1
	Long-eared bat sp							1						1
Unidentified bat passes							1						1	
2016*	Lesser Horse shoe											3		3
	45 Pipistrelle	12				2	2	4		10	93	21	1	145
	55 Pipistrelle									1	7	8	10	26
	Pipistrelle sp												2	2
	Myotis sp	4						1	1		4	3	1	14
	Barbastelle					1								1
	Leislars									1				1
Unidentified bat passes									1	2		3	6	

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

As usual very little was recorded in Stop 1 to Walk 3. There was some pipistrelle activity in Walk 1 but otherwise all of the activity seems to be at the start of the walk Stop 6 to Walk 5. The total of 98 Common Pipistrelle passes at Stop 5 is remarkable when it has only had 7 in 2014 and none at all in the other 4 years. The Lesser Horseshoe Bat at Walk 6 is fairly regular but this is the first time this transect has recorded Barbastelle or Leisler's Bat. There seem to be very few Myotis bats.

11. Wambrook



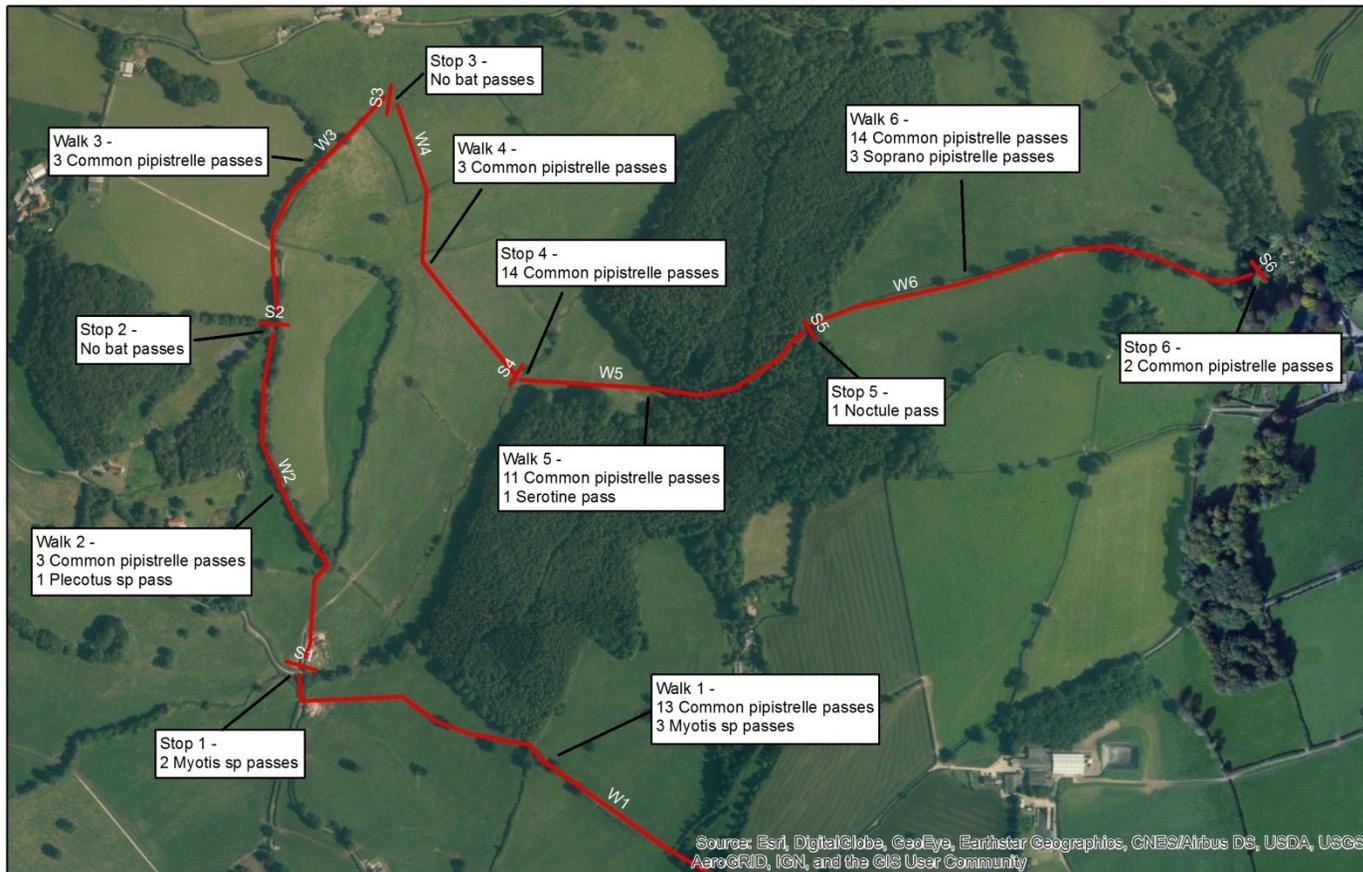
3.2.12 Transect 12: White Staunton

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	45 Pipistrelle	30		1				3	27	39	9	20	6	135
	55 Pipistrelle											1	1	2
	Myotis sp			1					1	1	2		3	8
	Noctule	2												2
	Serotine		1					2			5		1	9
Unidentified bat passes	2	1												3
2012*	45 Pipistrelle	16		41	17	12		2		10	4	42	56	200
	55 Pipistrelle	2			6					1		9	8	26
	Pipistrelle sp												1	1
	Myotis sp		1							1	1	11	1	15
	Serotine			1					1					2
Unidentified bat passes							1		1				5	7
2013	45 Pipistrelle	2	35	23			1	7	19	6		4	15	112
	55 Pipistrelle									1		2	5	8
	Pipistrelle sp		4											4
	Myotis sp			1					1					2
	Serotine		1	2										3
Unidentified bat passes		1	1							1			3	
2014*	45 Pipistrelle	34	46	12	4	2	1	10	26	8		22	47	212
	55 Pipistrelle		1	1								12	4	18
	Pipistrelle sp							2	1			1		4
	Myotis sp	1	1	2						1		9		14
	Serotine				1							1		2
	Long-eared bat sp								1			1		2
Unidentified bat passes											1		1	
2015	45 Pipistrelle		3	5	2	8			5	7	2	12	Not surveyed	44
	55 Pipistrelle				3	5			1	6	4	18		37
	Pipistrelle sp								1	2	7	1		11
	Serotine								1					1
	Myotis sp		1		1					1		2		5
	Long-eared bat sp								1					1
	Unidentified bat passes			1							2			3
2016*	45 Pipistrelle	13		3		3		3	14	11		14	2	63
	55 Pipistrelle											3		3
	Myotis sp	3	2											5
	Noctule										1			1
	Serotine									1				1
	Plecotus sp			1										1

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

This transect was recorded using an EM2 detector and the results cannot be regarded as reliably comparable. The totals do appear to be lower than normal. Common Pipistrelle passes were 135 in 2011, 200 in 2012, 112 in 2013, 212 in 2014 and 44 in 2015 with the section which is normally richest, Stop 6, unrecorded. This year with all 12 sections recorded the total is only 63. All bat passes only amounted to 74. This cannot be explained entirely by the different type of detector. One encouraging find was a Noctule for the first time since 2011.

12. White Stanton



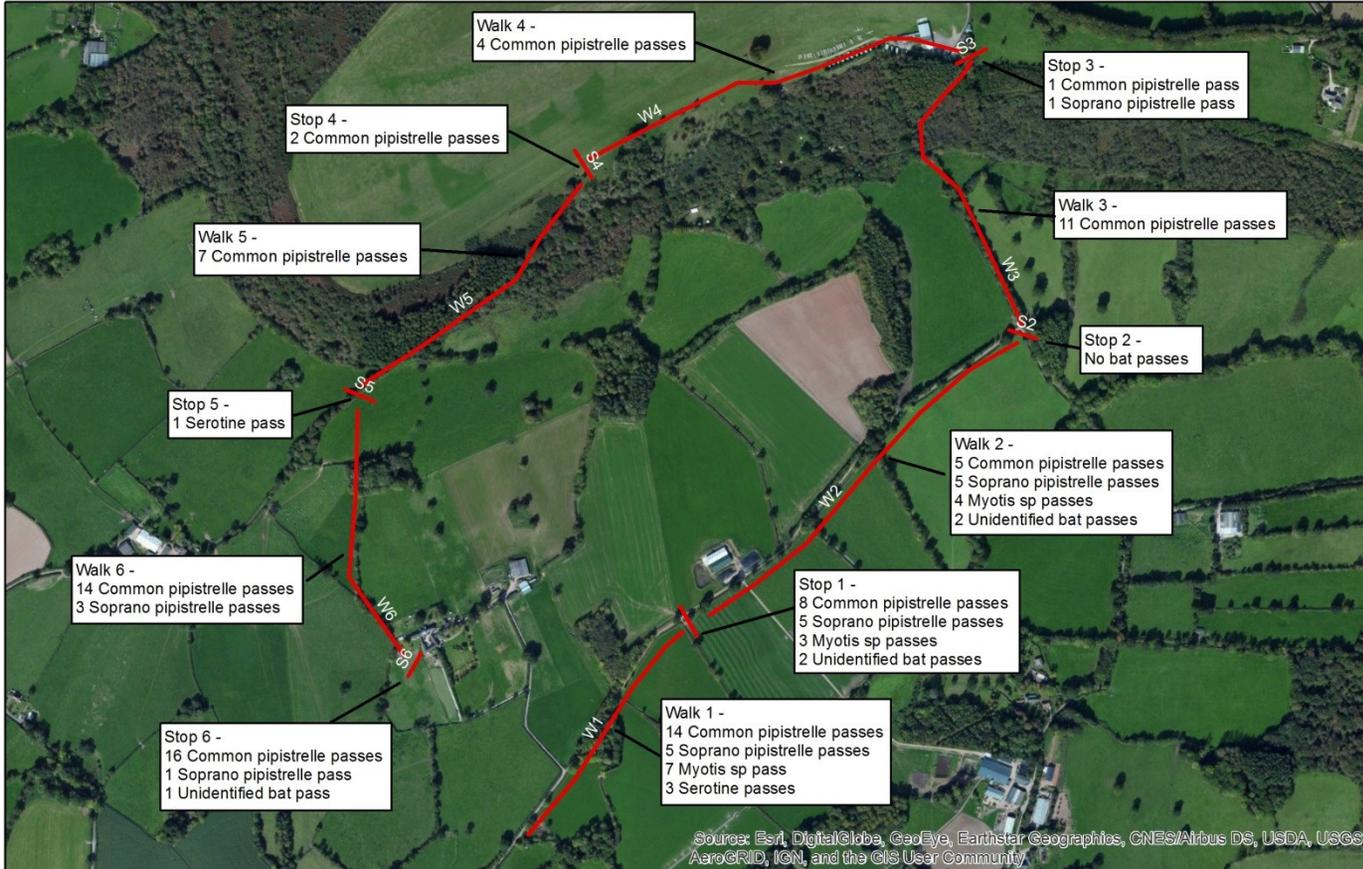
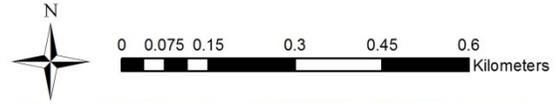
3.2.13 Transect 13: Broadhembury

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	This transect was not undertaken in 2011													
2012*	45 Pipistrelle	19	23	102	65	105		4	48	33	19	24	5	447
	55 Pipistrelle		1	27		3								31
	Pipistrelle sp	2	5	9						1				17
	Myotis sp	14	3	17		2						2		38
	Serotine												2	2
	Unidentified bat passes	1	1	10		6			1	2	5		1	27
2013	45 Pipistrelle	14	1	25	22	14	1	1		7	10	46	1	142
	55 Pipistrelle											1		1
	Myotis sp		4								1			5
	Serotine			2	2		1							5
	Unidentified bat passes			3				1						4
2014*	45 Pipistrelle	71	30	13	8	20		5	3	3	6	21	18	198
	55 Pipistrelle	7		3		3		3			1	2	1	20
	Pipistrelle sp		1										1	2
	Myotis sp	3							4			1		8
	Serotine		1	1		1			2					5
	Unidentified bat passes	1		3					3			3	2	12
2015	45 Pipistrelle	22	2	18	3	16	5	3		11	2	14		96
	55 Pipistrelle	3		8		1	1						1	14
	Pipistrelle sp						1			2				3
	Serotine			3	1			1						5
	Noctule											2		2
	Myotis sp				1									1
2016*	45 Pipistrelle	14	8	5		11	1	4	2	7		14	16	82
	55 Pipistrelle	5	5	5			1					3	1	20
	Myotis sp	7	3	4										14
	Serotine	3									1			4
	Unidentified bat passes		2	2									1	5

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

As for Transect 12 this was the lowest number of passes recorded in the years this transect has been walked. Common Pipistrelle passes were 447 in 2012 and 198 in 2014 but only 82 in 2016. The number of recorded passes of Soprano Pipistrelles, Myotis species and Serotines have varied very little over the 5 years but the commonest of all our bat species seems does not appear to be as abundant as it was and it raises the questions of where they have gone to and why? The near absence is particularly noticeable at Walk 1 to Walk 3.

13. Broadhembury



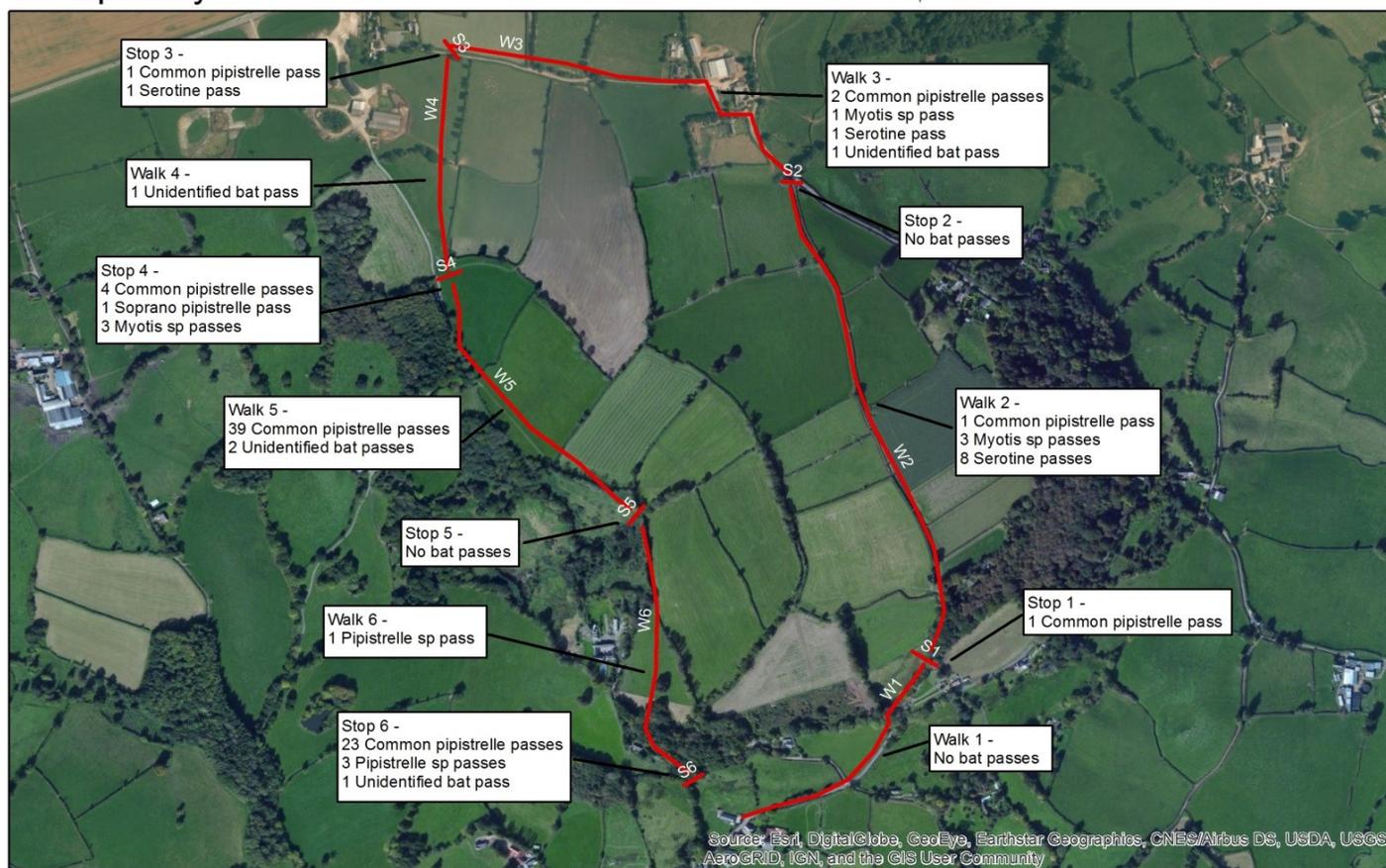
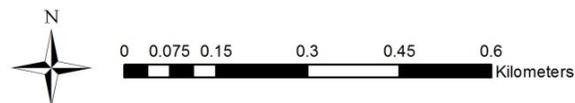
3.2.14 Transect 14: Upottery

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	This transect was not undertaken in 2011													
2012*	45 Pipistrelle	41	91	26	35	18	67	90	94	61	1	24	12	560
	55 Pipistrelle	2	2			3		1		9	1	4	5	27
	Pipistrelle sp		1	1	19			1	4					26
	Myotis sp	5	16							1	1	1		24
	Serotine		1	1			3	24	2	1				32
	Barbastelle							2						2
	Long-eared bat sp								1					1
	Unidentified bat passes		1					1	9			2	1	14
2013	45 Pipistrelle	29	18	19	12	12	5	7	5	15		3		125
	55 Pipistrelle	3	12	5		1								21
	Pipistrelle sp									1				1
	Myotis sp	1												1
	Serotine					1			1					2
	Unidentified bat passes		1			2	1		2					6
2014*	45 Pipistrelle	7	6	4		5	2	2	3	5	1	1	5	41
	55 Pipistrelle			3			3			2	2			10
	Myotis sp	3		1			1		6		1		1	13
	Serotine										1			1
	Barbastelle									1				1
	Unidentified bat passes	3	2							1		1		7
2015	45 Pipistrelle	6	14	15	11	4		3	11	60		21	1	146
	55 Pipistrelle	2	2	4	6				2			3	15	34
	Pipistrelle sp					2								2
	Serotine									7				7
	Myotis sp			3										3
	Long-eared bat sp								1	3		1		5
	Barbastelle									3				3
	Unidentified bat passes		1		2				4	1		3	3	14
2016*	45 Pipistrelle		1	1		2	1		4	39			23	71
	55 Pipistrelle								1					1
	Pipistrelle sp											1	3	4
	Myotis sp			3		1			3					7
	Serotine			8		1	1							10
	Unidentified bat passes					1		1		2			1	5

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

The results here are quite similar to those for 2014. There was only one Soprano Pipistrelle recorded but 71 Common Pipistrelle passes was higher than in 2014 but lower than in the odd years of 2013 and 2015 and far lower than the anomalous 560 in 2012. 2012 also showed atypically large numbers of passes from both Myotis species and Serotines. It was a remarkable year and the virtue of repeating the survey for another 4 years is that it becomes clear how odd that first year was.

14. Upottery



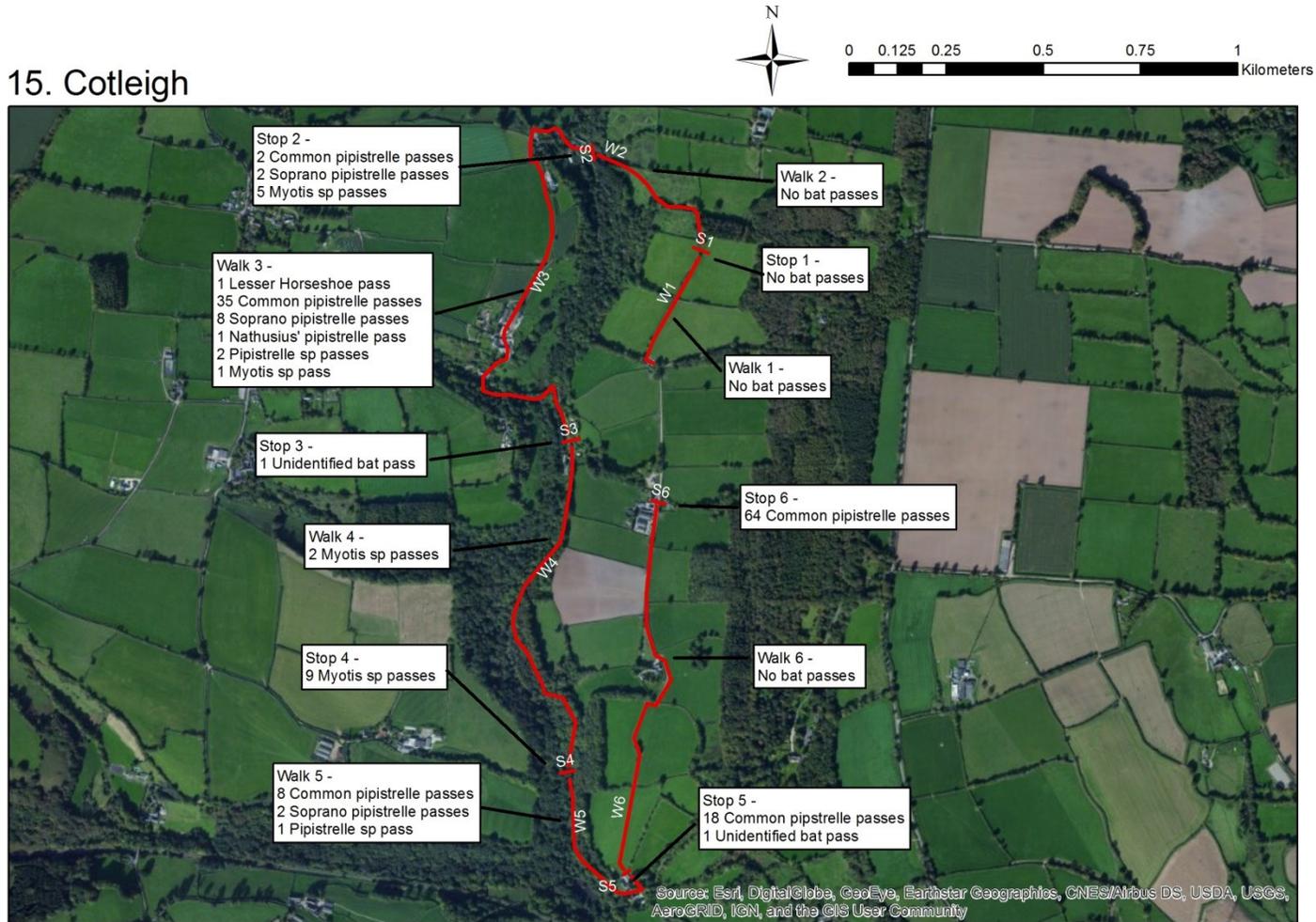
3.2.15 Transect 15: Cotleigh

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	This transect was not undertaken in 2011													
2012*	45 Pipistrelle					1	2	10					2	15
	55 Pipistrelle					3								3
	Myotis sp	1		1	2	1	1	7	6					19
	Serotine				3		1							4
2013	45 Pipistrelle			15	6	35	6	9	1	1	6	6		85
	55 Pipistrelle				1									1
	Myotis sp		2					1	7	9			4	23
	Serotine											1		1
	Unidentified bat passes								1		2	1	2	6
2014*	Lesser Horseshoe							2						2
	45 Pipistrelle	2		4	27	56	2	8	3	1	8	6	18	135
	55 Pipistrelle			2	46	4	1			3	2	7	18	83
	Pipistrelle sp					3		1						4
	Myotis sp				3		3	3						9
	Serotine					1	1							2
	Unidentified bat passes			1	6				1		2		6	16
2015	Lesser Horseshoe					3								3
	45 Pipistrelle	1	1	19	30	24		16	33	21	49	20		214
	55 Pipistrelle				7	5				9				21
	Serotine					1		1	1	1				4
	Myotis sp			1		1			2	3				7
Unidentified bat passes			1		3								4	
2016*	Lesser Horseshoe					1								1
	45 Pipistrelle				2	35				8	18		64	127
	55 Pipistrelle				2	8				2				12
	Pip nath					1								1
	Pipistrelle sp					2				1				3
	Myotis sp				5	1		2	9					17
	Unidentified bat passes						1				1			2

* The 2012, 2014 and 2016 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

The results for this transect are not consistent although the central part of the walk is usually the busiest. That makes the 64 Common Pipistrelle passes at Stop 6 exceptional. Just as Transect 14 had an anomaly in 2012 so did this one not in this case an abnormally high count but an oddly low one. There were 12 Common Pipistrelle passes in that year and in succeeding years 85, 135, 214 and 127. 85 Soprano Pipistrelle passes in 2014 also stands out as unusual. In three years out of five this transect has recorded a Lesser Horseshoe Bat.

15. Cotleigh



3.2.16 Transect 16: Netherclay

Year	Bat Species	Transect section												Total
		Walk 1	Stop 1	Walk 2	Stop 2	Walk 3	Stop 3	Walk 4	Stop 4	Walk 5	Stop 5	Walk 6	Stop 6	
2011	This transect was not undertaken in 2011													
2012*	45 Pipistrelle	29		2		14	5	5	49	17	12	14	2	149
	55 Pipistrelle					5		2	3	1				11
	Myotis sp	17	5			14		3	62	3	40	3		147
	Noctule												1	1
	Unidentified bat passes	1	1	1						2	1			6
2013	45 Pipistrelle	1	3				2	31	80	10	4	9	1	141
	55 Pipistrelle		2	1				4	6					13
	Myotis sp			1				3	6	1		1		12
	Serotine				5		5	11	5	3		3		32
	Noctule												1	1
	Unidentified bat passes			1			1	1						3
2014*	45 Pipistrelle	3	1	2	3	5	1		2			2		19
	55 Pipistrelle					1								1
	Pipistrelle sp	1		1	1	6	1	1			3	2		16
	Myotis sp		2			5								7
	Serotine	7	5	1		5			3			1		22
	Noctule	1		1		2								4
	Unidentified bat passes	1	2		2	10		1	1	2		3		22
2015	Lesser Horseshoe					2	2							4
	45 Pipistrelle		3	7	15	59	8	51	52	31	3	1	2	232
	55 Pipistrelle			1	20	4	1	4	27					57
	Pipistrelle sp				2	1				3				6
	Myotis sp					3	2	2		3	3	1	1	15
	Long-eared bat sp					1		1						2
	Unidentified bat passes				2	8		1	1	4	1			17
2016*	This transect was not undertaken in 2016													

* The 2012 and 2014 surveys were completed in reverse starting at Stop 6 and finishing at Walk 1.

This transect was not carried out in 2016

16. Netherclay

