British Energy Group PLC
Sizewell Bat Survey Report 2007

1. Introduction

1.1 Background to Development

British Energy (BE) is at the early stages of investigating the feasibility of building new nuclear power stations at a range of sites within their UK land holding. Sizewell has been identified as one potential site for investigation and likely progression to EIA. Entec UK Ltd has been appointed by BE to lead and co-ordinate the baseline ornithological and terrestrial ecological work and assessment for Sizewell and has subcontracted Baker Shepherd Gillespie (BSG) to undertake baseline bat surveys of the area. This report presents the results of survey work undertaken within the BE land holding by BSG in 2007.

1.2 Proposed Works

An area of land directly north of the Sizewell 'A' and 'B' Power Stations has been identified as having the potential to accommodate nuclear new build. This area, which covers 0.32km2/32ha and has an approximate central grid reference of TM473640, is referred to in this document as 'the preliminary works area'. It should be noted that this initial development footprint is purely indicative, as environmental, landscape and visual, hydrological and other constraints have not yet been considered and taken into account. These would all be addressed as a matter of course as part of an EIA.

No detailed information on the exact nature of the proposed nuclear power station can be provided at this stage, but it is assumed for the present that the power station would be water-cooled and that there would be a requirement for additional works associated with this in the sub-tidal zone. Due to the presence of statutorily designated sites of nature conservation importance to the north and east of the preliminary works area, it is likely that the route of any access road to this block of land will be through the area of plantation forestry (Dunwich Forest and Goose Hills) to the west. Further, it is likely that any construction compounds for the build would adjoin this access road, taking in further areas of plantation and adjacent arable land.

Figure 1 shows the proposed footprint of the new power station (the preliminary works area). The positions of associated infrastructure such as access tracks and construction compounds are indicative at this stage.

1.3 Preliminary Works Area Description and Context

The preliminary works area comprises open sheep grazed pasture, fringed by reinstated coastal dune vegetation parts of which have been planted with trees and scrub. The hydrology and pedology of the site were irreversibly altered as a result of works associated with the building of the Sizewell 'A' and 'B' Stations (adjacent to its southern boundary), and as a result it has lost much of its botanical merit. Habitats adjoining or in close proximity to the site are of considerable ecological interest however. These include wet meadows (and associated wetland

habitats and ditch systems), dune systems, shingle plant communities and wet semi-natural woodland. The quality of the shingle, grazing marsh and associated wetland habitats have led to substantial areas of these in close proximity to the site being designated for their ecological interest. Previous bat surveys have recorded seven bat species on the Sizewell Estate including barbastelle (*Barbastella barbastellus*), one of the UK's rarest species, and one of only five UK bat species listed on Annex II of the EU Habitats Directive.

1.4 Legislation and Policy Guidance

1.4.1 Biodiversity Action Plan

Seventeen species of bat are known to be resident in the UK, seven of which are on the new list of priority species in the UK Biodiversity Action Plan, adopted by the Government in 2007. Species included on this list have been identified by the UK Government as needing special conservation help because of their rarity and/ or decline in numbers over recent decades. Species Action Plans (SAPs) have been developed to identify conservation priorities, propose action, and set targets to try and maintain and restore populations. Bat populations are at risk from changes to the landscape (such as agricultural practices), and developments can cause loss of roosting, foraging or commuting habitat and be a contributing factor to population decline.

A clear understanding of the level and nature of use of a survey area by bats is necessary to ensure that environmental measures (mitigation, enhancement and offsetting) associated with a development can be appropriately targeted, and put in the context of local and national conservation priorities. The SAPs promote the favourable management of land, especially in the vicinity of known roost sites, and aim to maintain and enhance existing bat populations. These can lead to the designation of important sites for rarer species and notification to the local authority of important roosts such as maternity or hibernation sites.

Most of the Species Action Plans (SAPs) in the Suffolk Biodiversity Action Plan are based on National Biodiversity Action Plans. The process of identifying BAP priorities in Suffolk began in 1997, and an initial plan (Tranche 1) was produced in 1998. Priority species included the common pipistrelle (*Pipistrellus pipistrellus*). Tranche 2, published in 2000 has been withdrawn and revised plans are in production. Priority species on Tranche 2 included barbastelle.

1.4.2 Protective Legislation Relating to Bats

All bat species and their roosts are protected in the UK under the Conservation (Natural Habitats, &c.) (Amended) Regulations 2007 (Schedule 2), which implements the EC Directive 92/43/EEC (the Habitats Directive). In addition, lesser and greater horseshoe bat, Bechstein's bat and barbastelle are listed in Annex II of the Habitats Directive, which requires sites to be designated in member states for their protection.

All bat species and their roosts are also protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and under the Countryside and Rights of Way Act 2000. Taken together, these Acts and Regulations makes it illegal to:

- Intentionally or deliberately kill, injure or capture bats;
- Deliberately or recklessly disturb bats;
- Damage, destroy or obstruct access to bat roosts;
- Possess or transport a bat or any part of a bat, unless acquired legally; and

- Sell, barter or exchange bats, or parts of bats.

In response to a European Court Judgement that ruled the United Kingdom had not correctly transposed the Habitats Directive into UK law in a number of areas, recent changes have been made to the Habitats Regulations. Caselaw driving these changes included a judgement in 2005 which ruled that existing species protection provisions in the Habitats Regulations were not fully compatible with the strict species protection regime required by the Habitats Directive (www.defra.gov.uk). Subsequently, the Conservation (Natural Habitats, & c.) (Amendment) Regulations 2007 entered into force in August 2007. In summary, the Amended Regulations have:

- Removed the majority of defences originally put into the Habitats Regulations, including the 'incidental result of an otherwise lawful action' defence;
- Placed greater emphasis on individuals and organisations involved in works that could affect European Protected Species to give more careful consideration to their presence, their breeding sites and resting places.

To ensure that these changes to the Habitat Regulations are practical and realistic, it is intended that the threshold level at which significant disturbance occurs will be raised such that low level disturbance that affects an animal rather than the species as a whole, or that only affects "*a small number*" of a "*larger*" population, will not require an European Protected Species licence. Further information can be found at:

http://www.naturalengland.org.uk/conservation/wildlife-management licensing/docs/Disturbance_of_protected_species.pdf.

The Natural Environment and Rural Communities Act 2006 (NERC Act) states, in Section 40(1), that "*every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*". Section 40(3) of the NERC Act 2006 goes on to state that "*conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat*".

Section 41(1) of the NERC Act 2006 states that "*the Secretary of State must, as respects England, publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity*".

In paragraph 16 of Planning Policy Statement 9, the Government indicates that local authorities should take steps to further the conservation of species of principal importance for the conservation of biodiversity in England and should ensure that that these species are protected from adverse effects of development, where appropriate, by using planning conditions or obligations. Species of principal importance include priority bat species in the UK Biodiversity Action Plan[1].

The Bat Mitigation Guidelines published by English Nature state, *'It is the responsibility of the developer, usually via a consultant, to produce evidence on the presence of bats on a site at which works are proposed'*.

[1] In 2007, the Government has published a new list of UK Biodiversity Action Plan priority species and habitats. This has not currently been adopted under the NERC Act 'Section 41 list', but it is expected that most, or all, priority species and habitats will be included.

Developments that compromise the protection afforded to bats under the provisions of the Conservation (Natural Habitats, &c.) Regulations 1994 almost invariably require a licence from Natural England. Three tests must be satisfied before a licence to permit otherwise prohibited acts can be issued:

- Regulation 44(2)(e) states that licences may be granted by Natural England to 'preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';
- Regulation 44(3)(a) states that a licence may not be granted unless Natural England is satisfied 'that there is no satisfactory alternative';
- Regulation 44(3)(b) states that a licence cannot be issued unless Natural England is satisfied that the action proposed 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

In conclusion, a licence permits otherwise unlawful actions and it is the responsibility of the developer, or their appointed advisor, to decide whether a licence is required for work that has the potential to affect bat populations. It is important that the developer carries out a thorough survey and accurate assessment to help avoid committing offences. It is also the responsibility of the developer to design and implement a mitigation scheme that meets the licensing requirements and ensures, as far as possible, the long-term future of any bat population affected. Licence applications (under Regulation 44(2)(e) of the Habitats Regulations) will be determined by Natural England.

1.5 Status of Bats in Suffolk

Of the 16 species of bat that are known to be resident in the UK, the species listed in **Table 1** are known to occur in Suffolk:

Table 1 Status of Bat Species in Suffolk

English Name	Scientific Name	Status in Suffolk	Notes	Source of Information
Common pipistrelle	*Pipistrellus pipistrellus*	Common and widespread	-	Richardson (2000)
Soprano pipistrelle	Pipistrellus pygmaeus	Common and widespread	-	Richardson (2000)
Brown long-eared bat	*Plecotus auritus*	Common and widespread	Second only to pipistrelles in terms of number of 10km squares occupied in the county	Suffolk Bat Group
Natterer's bat	*Myotis nattereri*	Regularly recorded	The number of records trebled following the bats in barns survey in 1996. The species uses most of the known hibernation sites in the county.	Suffolk Bat Group

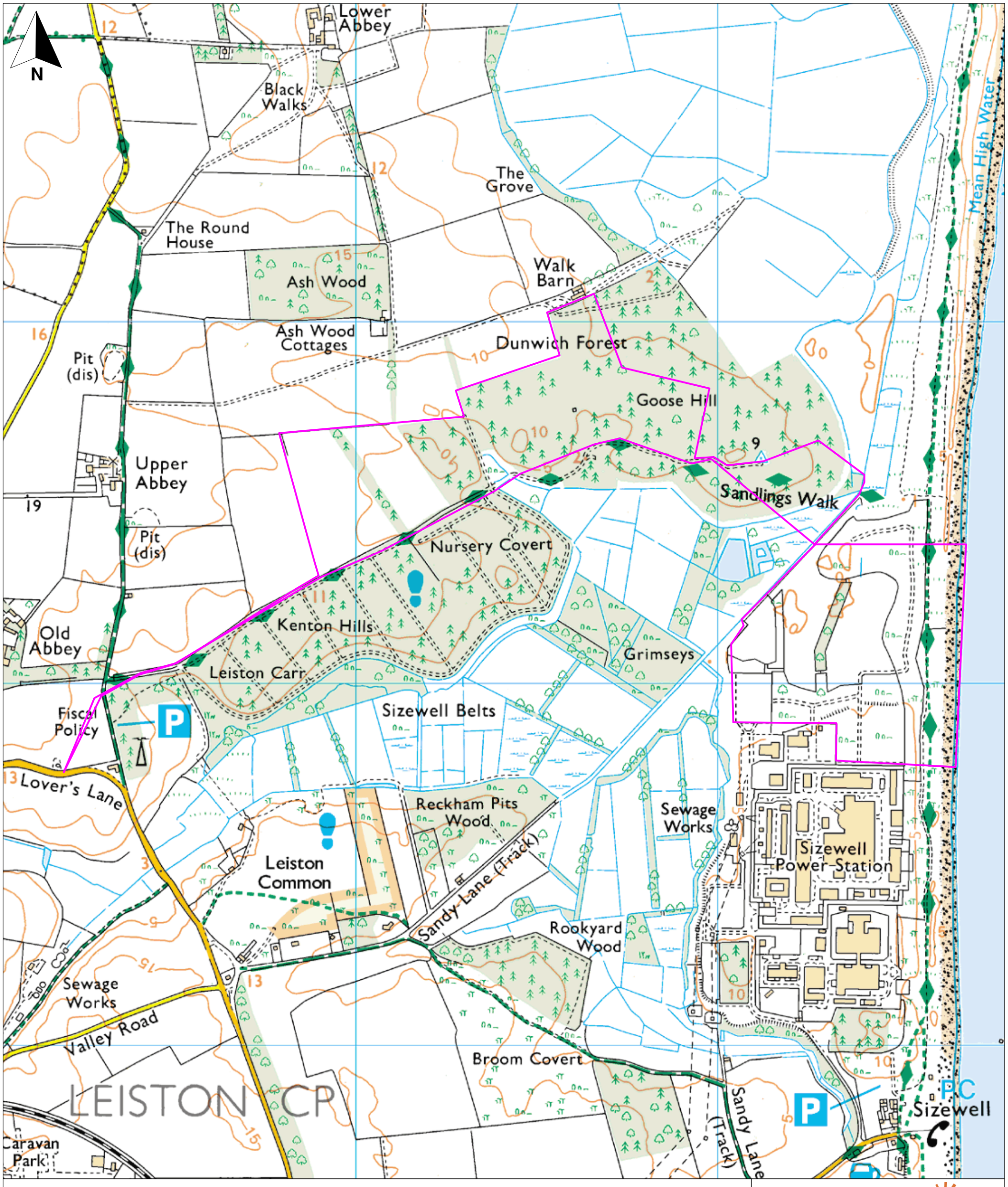
Table 1 (continued) Status of Bat Species in Suffolk

English Name	Scientific Name	Status in Suffolk	Notes	Source of Information
Whiskered bat	*Myotis mystacinus*	Extremely scarce	Until January 2000 all records were from two hibernation sites, and refer to single animals. A breeding roost has yet to be discovered in the county	Suffolk Bat Group
Brandt's bat	*M. brandtii*	Extremely scarce		Richardson (2000)
Daubenton's bat	*M daubentonii*	Widespread and locally common		Richardson (2000)
Noctule	*Nyctalus noctula*	Widespread (in low numbers)	Widespread throughout the county albeit in small numbers	Richardson (2000) and Suffolk Bat Group
Leislers	*N. leisleri*	Uncommon	Only three nursery colonies are known in the county. Appears to be confined to the north-west of the county	Suffolk Bat Group
Serotine	*Eptesicus serotinus*	Widespread (in low numbers)	There are approximately 45 known colonies in Suffolk.	Suffolk Bat Group
Barbastelle	*Barbastella barbastellus*	Scarce		Richardson (2000)
Lesser horseshoe bat	*Rhinolphus ferrumequinum*	Very rare (very few records)	A single bat (presumed to be the same individual) has been recorded at a hibernation site in February for the last nine to fourteen years.	Suffolk Bat Group and Alan Miller of the Suffolk Wildlife Trust

1.6 Purpose of Survey Work

The bat surveys carried out in 2007 form part of the baseline survey programme that is being conducted to inform the ecological assessment section of an Environmental Statement (ES) for the proposed development. The aims of the surveys were to:

- Identify tree roosts or trees with the potential to support roosting bats which could be affected by the proposals. This was achieved by carrying out a visual inspection of trees and the woodland within the preliminary works area and Dunwich Forest;
- Determine the level and nature of bat use of the survey area by:
  - Undertaking five evening bat activity surveys from June to September using walked transects with listening stations positioned along the route and;
  - Setting up static Anabats at selected locations to record from dusk to dawn at the time of each survey visit;
- Provide a preliminary evaluation of the value of the survey area to bats;



Key:

Preliminary Works Area

0 m 250 m

British Energy

Sizewell Bat Report 2007

Figure 1
Preliminary Works Area

February 2008
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- Identify information gaps that need to be addressed through further appropriate survey; and,
- Identify appropriate mitigation, enhancement and compensation measures to ensure the bat interest of the area is maintained and enhanced.

2. Methods

2.1 Desk study

2.1.1 Records of Bats

A desk study of ecological information was carried out by Entec for the proposed development. Sources of available information that have been identified to date are:

- The results of a data search of all wildlife records carried out by Suffolk Biological Records Centre (SBRC) (March, 2007) for a 3km radius search area around the preliminary works area.

Historical information was also obtained from the following reports:

- The Decommissioning ES for Sizewell A Power Station (British Nuclear Group, 2005);
- Greater Gabbard Offshore Windfarm 132kV Underground Cable Route Options. Report to National Grid (Entec UK Ltd, 2007).

In addition, prior to undertaking the surveys, methods were discussed with Alan Miller of Suffolk Wildlife Trust, a prominent member of the local bat group[2], who is involved with the implementation of habitat management on the Sizewell Estate and has many years of knowledge of the local area.

2.2 Field Surveys

2.2.1 Tree Survey

Mature deciduous trees along the route of the indicative east-west access track and trees along the field margin to the north of the access track and west of Hilltop Covert were visually inspected on the 7th and 8th June 2007. The locations of these trees are shown on **Figure 2**. Features which could support roosting bats, such as holes, cracks, splits, loose bark and dense ivy covering were noted, and their height and aspect were recorded, as were any signs of actual use by bats such as droppings, scratches, smudge marks or urine staining. The position of trees exhibiting one or more of these features was noted on a plan. The weather conditions at the time of the tree survey were: 22°C, clear, light wind and dry.

There are many other trees which could be affected by the development proposals. However, these were all plantation pine trees which had few or no roosting features. Some were felled during the survey period as part of ongoing forest management. Although sample areas within

[2] Suffolk Bat Group have been contacted for information, but no response had been received at the time of issue of this report.

the conifer plantation at Dunwich Forest / Goose Hills were examined, the area was not the subject of a 'tree-by-tree assessment' (as the conifers had been planted in even-age woodland blocks and were of a similar structural condition). No double leadered trees[3] were noted.

2.2.2 Evening Bat Activity Surveys

A total of five evening bat activity surveys were undertaken. Surveys were conducted on 7th June 2007, 6th July 2007, 16th August 2007, 28th August 2007 and 12th September 2007 respectively. The survey timing corresponds to the active season for bats and spans the months in which bats rear their young. The surveys were timed to provide a sample of activity through this important period in the annual cycle of bats. For each survey a different transect route was walked incorporating up to 16 listening stops. Each transect route was walked once and consisted of a loop section and an 'out and back' section. Varying transect routes were used in order to sample all areas of the survey area for bat activity at different times of the evening within the narrow time window of greatest bat activity. The prevailing weather conditions, sunset times, start and finish times and duration of each survey are set out in **Table 2**. During each survey two surveyors walked a circuit of the transect routes together (for health and safety reasons) listening to bat echolocation calls using heterodyne detectors and continuously recording bat calls using frequency division detectors (either a Duet bat detector in conjunction with a mini disc recorder or an Anabat SD1 recorder). Regular stops were made at 'listening stations' along the route. Bat activity was recorded for between one and three minutes and the time of arrival at each station was noted so that the recorded bat calls could be assigned to the surveyor's location when the recording was made.

Figures 3-7 show the transect routes and the transect points walked on the five dates.

Table 2 Times, Dates and Weather Conditions During Bat Activity Surveys

Date	Sunset time	Temperature	Wind	Rain	Cloud	Start /finish	Transect walk duration
07June 07	21.15	17-140C	light	dry	clear	21.09-23.15	2hrs 06mins
06 July 07	21.16	16-140C	light	dry	60% clearing	21.20 – 00.46	3hrs 26mins
16 Aug 07	20.20	15-110C	still	dry	clear	20.05-22.55	2hrs 50mins
28 Aug 07	19.55	14-130C	still	dry	clear	19.50-22.57	3hrs 03mins
12 Sept 07	19.30	15-120C	still	misty	80% cloud	19.35-21.24	1hr 49mins

[3] Double leadered trees are those where the trunk divides into two. Cavities developing in trees with this type of trunk have been seen to contain bat roosts in at least one study (Mortimer, 2005).

2.2.3 Automated Overnight Activity Surveys

On each of the five survey visits two Anabat SD1s (automated recording bat detectors with timed sound file feature) were left to record overnight. These were positioned in a variety of habitats and in different parts of the survey area. The locations of the Anabats are shown on **Figures 3-7,** and are labelled **A-J**. The Anabats were located just above ground level (1m above) or in the fork of a tree at approximately 1.5 to 2m above ground level. The reason for this positioning was to avoid recording the calls of crickets which would mask bat recordings.

2.3 Personnel

All the survey work (with the exception of the bat activity survey work on 6th July 2007) was undertaken by Dr Sandie Sowler MIEEM and Gerry Westmacott. Both surveyors are experienced Natural England licensed bat workers (Natural England licence numbers 20071050 and 20071049). The bat activity survey work undertaken on 6th July 2007 was carried out by Helen Lucking MIEEM and Alastair Wrigley, also experienced Natural England licensed bat surveyors (licence numbers 20070144 and 20070090),

2.4 Evaluation Methodology

In order to evaluate the importance of ecological features identified in the desk study and field surveys, a set of standard measures are outlined in guidance produced by the Institute of Ecology and Environmental Management (2006). For each site, habitat and species/assemblage, a summary grade is determined based on the levels of value recommended in the guidance. This places the importance of each feature in a geographical context, using the following hierarchy:

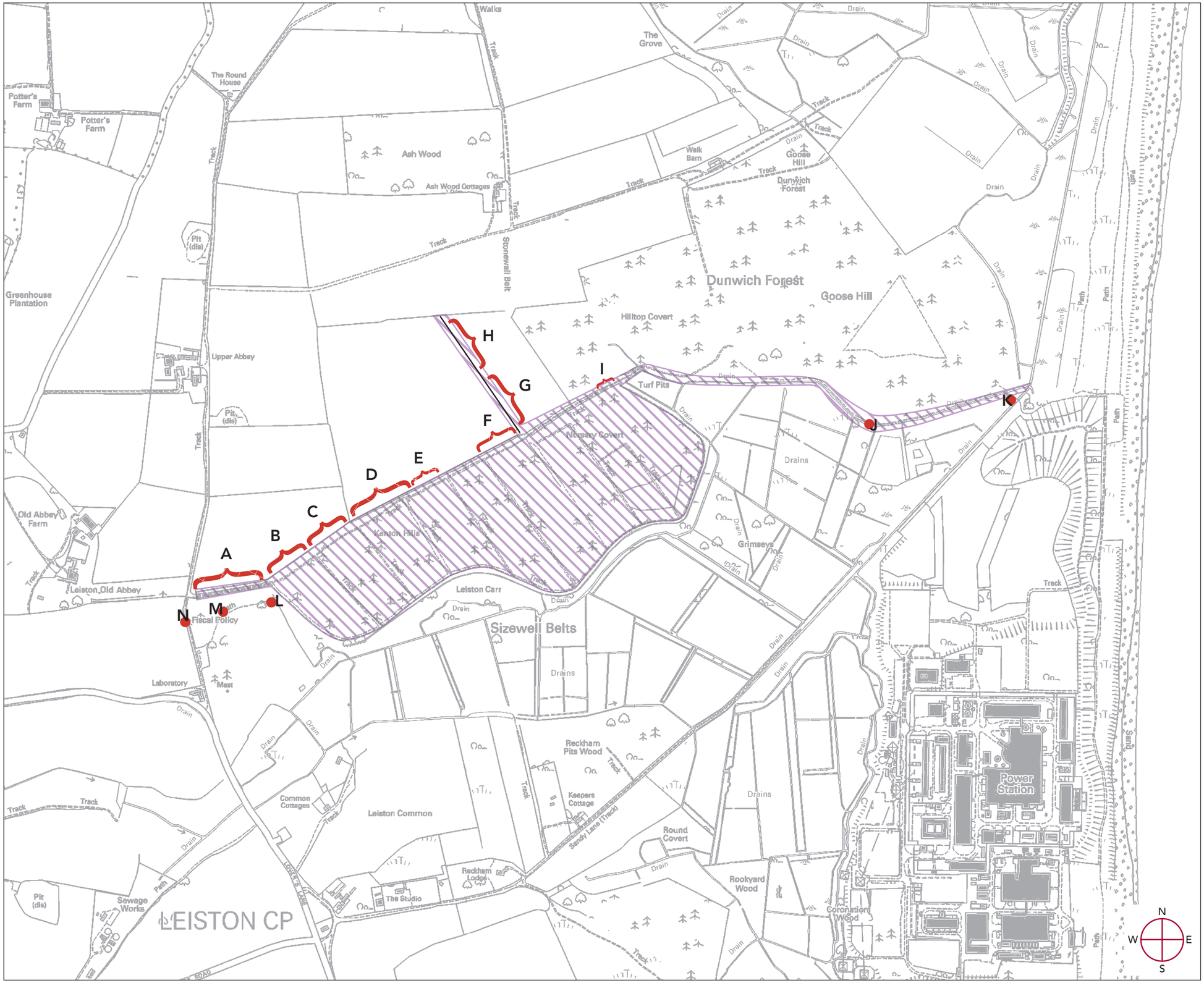
- International;
- UK;
- National (i.e. England, Northern Ireland, Scotland or Wales); ;
- County (or Metropolitan - e.g. in London);
- District (or Unitary Authority, City or Borough);
- Local (or Parish); or
- Site - within immediate zone of influence only (the development site and surrounds).

Where possible, formal criteria are used to set features of conservation importance within this geographical context. For example, the Guidelines for the Selection of Biological SSSIs (Nature Conservancy Council, 1989) can be used as a basis for the assessment of features at national level. Similarly, published guidelines for the selection of SINCs can be used as a basis for assessing features of county level importance.

The significance of bat populations has been determined using the principles described in the IEEM *Guidelines for Ecological Impact Assessment in the United Kingdom* (www.ieem.net). Particular consideration has been given to distribution and rarity at different geographical levels. In this case, reference has been made to:

- UK BAP;

Location of Surveyed Trees – 7th June 2007



Legend

A-N	Tree Blocks and Locations
	Survey Area
A	1-5 Tree Numbers
B	6-10 Tree Numbers
C	11-25 Tree Numbers
D	26-56 Tree Numbers
E	57-64 Tree Numbers
F	65-66 Tree Numbers
G	67-85 Tree Numbers
H	86-124 Tree Numbers
I	125-126 Tree Numbers
J	127-180 Tree Numbers
K	181-184 Tree Numbers
L	185-188 Tree Numbers
M	189-194 Tree Numbers
N	195-196 Tree Numbers

baker shepherd gillespie
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Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 2**

- Suffolk Local BAP;
- Distribution atlas of bats in Britain and Ireland 1980-1999 (Richardson, 2000)
- The state of the UK's bats: National Bat Monitoring Programme Population Trends (Bat Conservation Trust 2007).

2.5 Survey Limitations

The tree survey was undertaken at a sub-optimal time of the year, as the deciduous trees had leaves on them and some roosting signs or potential roosting features could have been obscured by foliage. It has been recommended that trees numbered 86-115 and 136-149 (see **Appendix A)** are re-checked in the winter months, as these had the potential to support bats.

Identification of some species, especially bats of the *Myotis* genus, from recordings can be difficult. Where the identification to species has been made this has been done using 'the slope' feature of the analysis software 'Analook' and has only been recorded to species where the identification confidence is greater than 60%.

Finally, certain bat species are especially difficult to detect – in particular, long-eared bats have a very quiet echolocation call and therefore tend to be under-reported in surveys using aural bat detectors.

3. Results

3.1 Desk Study

Barbastelle, one of the UK's rarest species has been recorded roosting in barns at Upper Abbey Farm and Lower Abbey (Leiston) on several occasions; these locations are approximately 1.85km west and 1.94km north-west, respectively of the preliminary works area. Barbastelle was first recorded in the barns in 1997 by Alan Miller (SWT), and visits by the local bat group over subsequent years established that small numbers were present on an annual basis. In 2004 barbastelle were recorded roosting in the same barn complex as a maternity colony of Natterer's bats at Upper Abbey. Barbastelle have not been proven to breed on the Sizewell Estate to date, and any breeding colony located would be highly important, as very few maternity roosts are known in the UK.

Brown long-eared bats were recorded at Upper Abbey Farm in 2000 where a maternity roost is present (Alan Miller, pers comm., SBRC, 2007). Pipistrelles *Pipistrellus* sp. are known to roost in the barns at Upper Abbey Farm and in the bat boxes at Kenton and Goose Hills. Maternity roosts of soprano pipistrelles are found in several of the domestic properties and agricultural buildings within the estate, including at Rosary Cottages and the barn at Upper Abbey Farm (Alan Miller, pers comm).

Noctules have been recorded in the area around Sandy Lane and Grimsey's Wood, and roost in bat boxes in Kenton Hills, where a recent count of 22 individuals has been made (Alan Miller, pers comm). Daubenton's bat has been recorded hibernating in Dunwich Forest, and is known to forage over the Sizewell Marshes. Surveys of bat boxes at Sizewell show a 75% occupancy of the trees; i.e. there are 20 trees with 3 boxes on each tree and bats have occurred with regularity in boxes on 15 of these trees (these have been found to contain bats or bat droppings).

Noctules have occupied two boxes regularly and the remainder have all been occupied by pipistrelle species (Alan Miller, pers comm).

Suffolk Biological Records Centre holds records for noctule at Kenton Hills in 2004, at Ordnance Survey Grid Reference (OSGR) TM 460 642 This is approximately 900m west of the preliminary works area. Suffolk Biological Records Centre also holds records of brown long-eared bats at Theberton, 2.8 km from the preliminary works area. Records of brown long-eared bats in 1993 and 2002 are at properties within Theberton, which suggests these may be records of roosts, although no further details are available.

Surveys conducted by Cresswell Associates (2005) as part of the decommissioning EIA of Sizewell A, recorded the two commoner species of pipistrelle as well as brown-long eared bats in Hill Wood, Coronation Wood and in the strip of woodland adjacent to the eastern boundary of the SSSI. Trees within these woodlands were considered to offer good opportunities for roosting.

Work undertaken in support of the Environmental Statement for Sizewell Wents Substation recorded brown long-eared bat, common pipistrelle bat and one species of *Myotis* bat along a footpath between the woodland and Sandy Lane. Noctule, serotine and soprano pipistrelle were also recorded in the survey area, which is immediately south-west of the existing power stations.

3.2 Field Surveys

3.2.1 Tree Survey for Bats

The detailed results of the tree survey are presented in tabular form in **Appendix A** (the locations of the trees are shown in **Figure 2**). In summary, 196 trees were surveyed on an individual tree basis. The majority were pedunculate oak *Quercus robur* and birch *Betula pendula* with a small number of other species notably ash *Fraxinus excelsior*, lime *Tilia* x. *europaea*, Scots pine *Pinus sylvestris* and willow *Salix* sp. No bat roosts were noted. A total of 13 trees were identified as having high potential, 5 medium to high potential, 14 medium potential, 39 low to medium potential, 75 low potential, 36 low to no potential and 14 no potential to contain bat roosts.

No signs of either actual bat roosts or features potentially suitable to support roosting bats were noted in the sample areas of plantation pine that were assessed.

One roost of soprano pipistrelles was located in three bat boxes attached to a Corsican pine (*Pinus nigra maritima*) in the plantation pine forest of Kenton Hills. The location is marked on **Figure 4**.

3.2.2 Evening Bat Activity Surveys (Walked Transects)

The detailed results of the evening activity surveys are presented in **Appendix B**. Summary information is presented in **Table 3**. This table shows the number of sound files (or bat passes) that were generated by each species recorded.

Table 3 Number of Bat Passes Generated for Each Species During Bat Activity Surveys

Date	No of sound files	No. of species	Common pip	Soprano pip	Noctule	Serotine	Leislers	Myotis	Whisk'ed/ Brandt's	Natter's	Long-eared	Barbastelle
7 June 07	131	8	49	68	2	2	0	1	0	2	3	3
6 July 07*	187	8	45	79	2	13	0	5	0	5	7	7
16 Aug 07	203	7	74	110	2	4	1	1	0	0	1	0
28 Aug 07	174	7	76	74	1	8	0	1	2	0	0	3
12 Sept 07	120	5	43	56	3	7	0	1	0	0	0	0

* **For this transect the calls were analysed using BatSound software and the number of bat passes (totals and for each species) are listed, instead of number of Anabat files.**

Common and soprano pipistrelle were recorded during all five survey visits and occurred along most of the five transect lengths. Noctule, serotine and *Myotis* species were recorded on all five visits, mainly along the access tracks and rides in Dunwich Forest. Leisler's and whiskered bats were only recorded on one survey visit each. Barbastelle and long eared bats were recorded on three survey visits each and Natterer's bats on two survey visits.

Of the nine species recorded in the survey area barbastelle was the most notable, being a National BAP species, a Suffolk BAP species and an Annex 2 (Habitats Directive) species. A total of six Anabat sound files and seven bat passes analysed through BatSound, showed this species to be present. **Figure 8** show the locations of serotine, noctule, Leisler's, *Myotis* sp., whiskered, Natterer's, long eared bat and barbastelle encounters during the walked transects. The locations of common and soprano pipistrelle encounters are not illustrated, as these species were widespread.

3.2.3 Automated Overnight Activity Surveys (Static Survey Points)

The detailed results of the overnight activity surveys as recorded by static Anabats are presented in **Appendix C**, with the positions of the Anabats are shown on **Figures 3-7**. **Text Figure 1** illustrates the bat species recorded at each Anabat location (A-J) indicating the bat species expressed as a percentage of the species recorded by that Anabat.

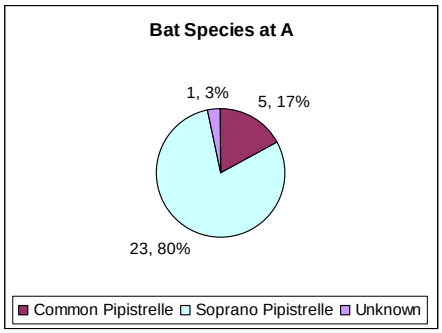
In summary, results from the ten static Anabats found that:

- Common and soprano pipistrelles were the most common species within the survey area;
- Common pipistrelles were the only species recorded in the preliminary works area; and
- The greater the diversity of tree species and variety of adjacent habitats, the greater the number of bat species that were recorded.

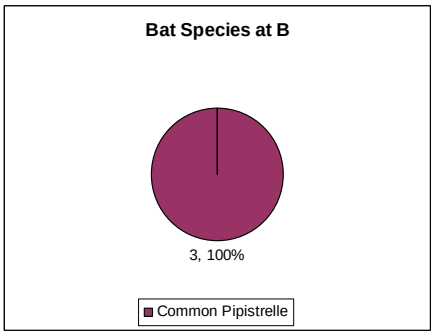
Barbastelles were recorded by static anabats in positions F and G. Static anabat F correlates to the area barbastelle were recorded during the walked transects. Static anabat G was on the eastern edge of Dunwich Forest, close to the coast.

Text Figure 1 (A-J) **Pie charts showing % of species detected by static overnight Anabats(see figures 3-7 for location within the survey area)**

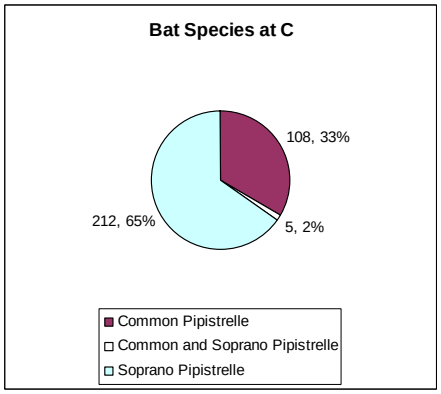
A – Dunwich Forest 7th June 2007 (see Figure 3 for location)



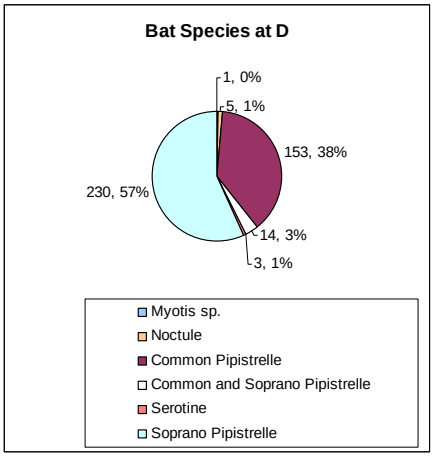
B – Shelter belt north of Sizewell B 7th June 2007 (see Figure 3 for location)

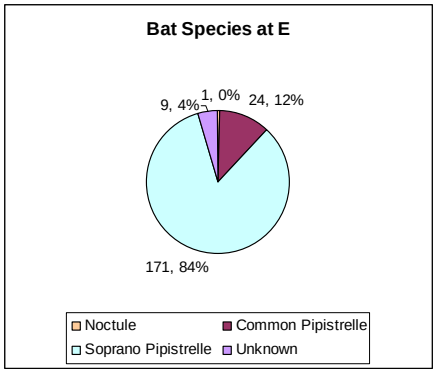
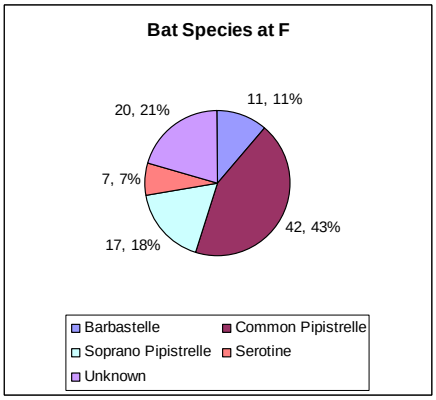


C - The north-south tree line east of Hilltop Covert 6th July 2007(see Figure 4 for location)

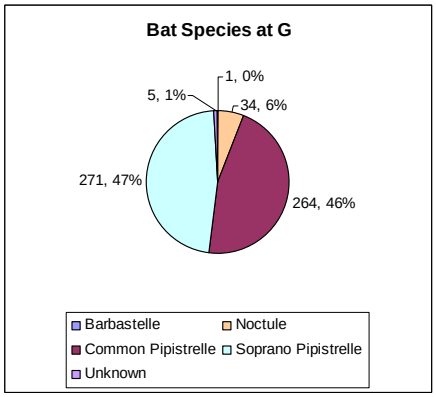
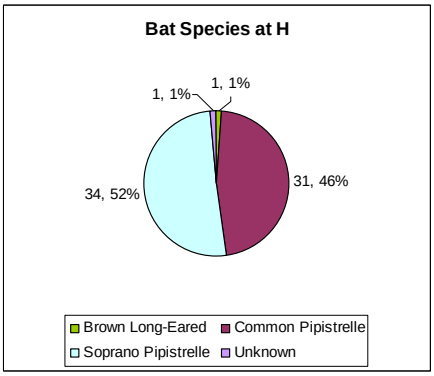


D – Southern edge of Goose Hill 6th July 2007 (see Figure 4 for location)



E – Near turf pits opposite gate into marsh 16th August 2007 (see Figure 5 for location)	F - Leiston Carr 16th August 2007 (see Figure 5 for location)
	

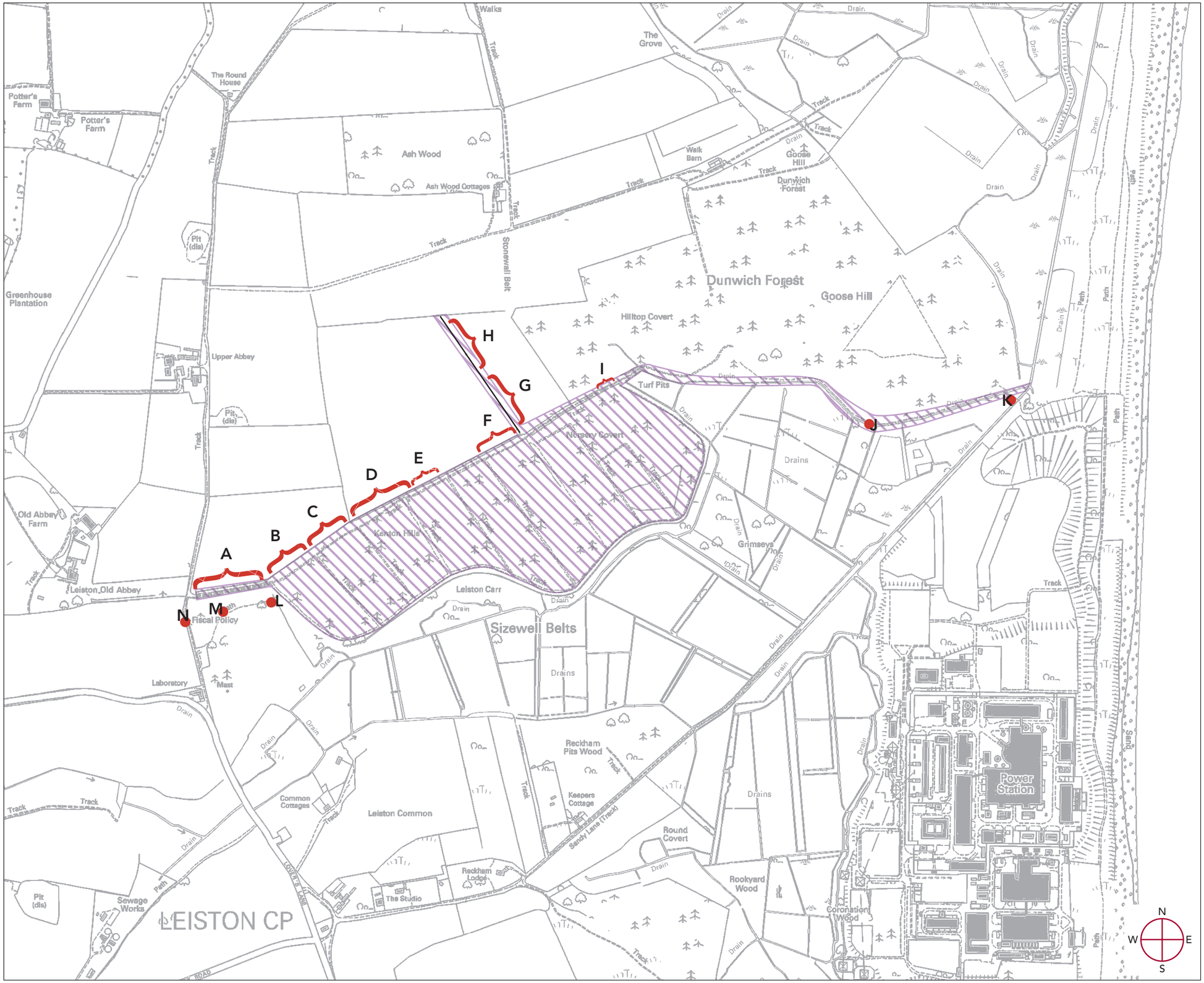
*** Where 0% is present this indicates the presence of a species that made up less than 1% of records. Unknown indicates echolocation recordings with insufficient information to allow identification to species level.**

G - North eastern edge of plantation 28th August 2007 (see Figure 6 for location)	H – Southern edge of Nursery Covert (facing south toward Grimseys) 28th August 2007(see Figure 6 for location)
	

***Where 0% is present this indicates the presence of a species that made up less than 1% of records. Unknown indicates echolocation recordings with insufficient information to allow identification to species level.**

The Anabat located at **Location I** (on the south-western edge of Kenton Hills near a pond on Sizewell Belts trail) on 12th September 2007 (see Figure 7 for location) recorded no bat vocalisations.

Location of Surveyed Trees – 7th June 2007



Legend

A-N	Tree Blocks and Locations
	Survey Area
A	1-5 Tree Numbers
B	6-10 Tree Numbers
C	11-25 Tree Numbers
D	26-56 Tree Numbers
E	57-64 Tree Numbers
F	65-66 Tree Numbers
G	67-85 Tree Numbers
H	86-124 Tree Numbers
I	125-126 Tree Numbers
J	127-180 Tree Numbers
K	181-184 Tree Numbers
L	185-188 Tree Numbers
M	189-194 Tree Numbers
N	195-196 Tree Numbers

baker shepherd gillespie
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Limited Liability Partnership

Office: Oxford
Tel: 01865 883833

Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 2**

Transect Route and Position of Static Anabat
A & B – 7th June 2007

Legend

- Direction of Transect Walk
- ① Transect Listening Station
- Ⓐ Ⓑ Position of Static Anabat

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Office: Monmouth
Tel: 01600 891576

Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 3**

Transect Route and Position of Static Anabat
C & D – 6th July 2007

Legend

- Direction of Transect Route
- 1 — Transect Listening Stations
- C D — Position of Static Anabat

Start

Finish

N
W E
S

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Tel: 01600 891576

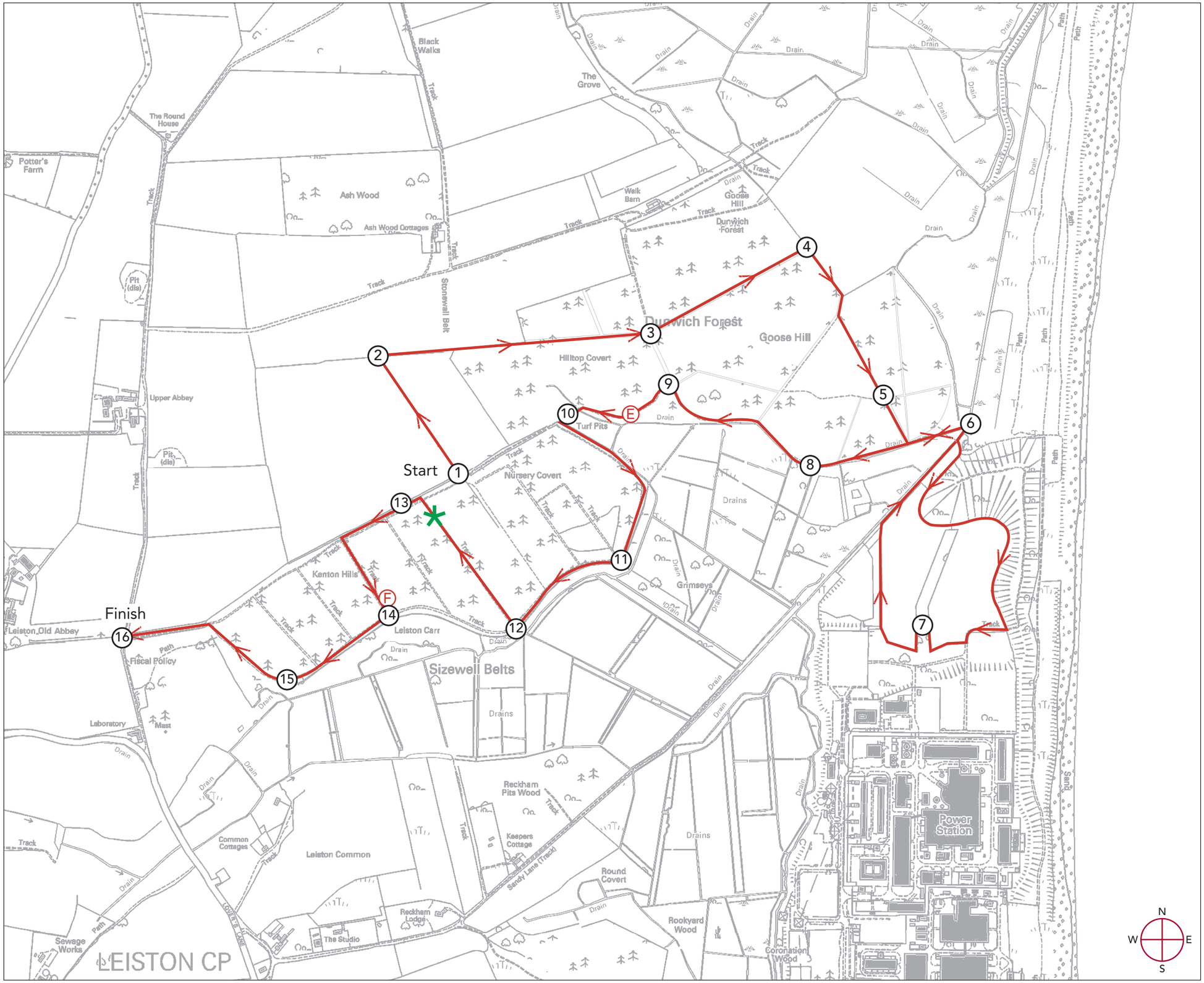
Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 4**

Transect Route and Position of Static Anabat
E & F – 16th August 2007

Legend

- Direction of Walked Transect
- ① Transect Listening Station
- Ⓔ Ⓕ Position of Static Anabat
- ✱ Bat boxes on Pine trees containing Soprano Pipistrelle roost



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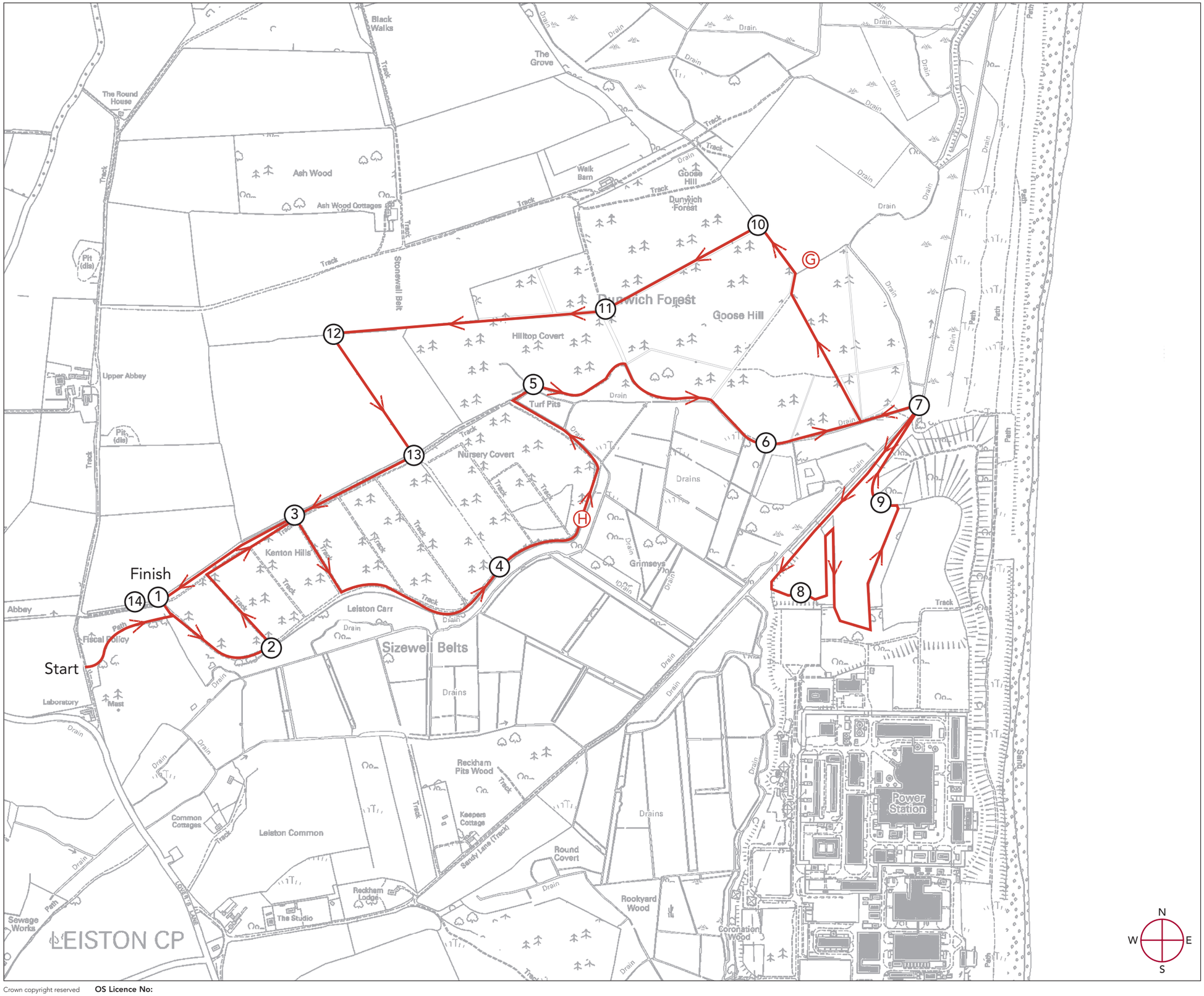
Office: Monmouth
Tel: 01600 891576

Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 5**



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Transect Route and Position of Static Anabat
G & H – 18th August 2007

Legend

- Direction of Walked Transect
- ① Transect Listening Station
- Ⓖ Ⓗ Position of Static Anabat

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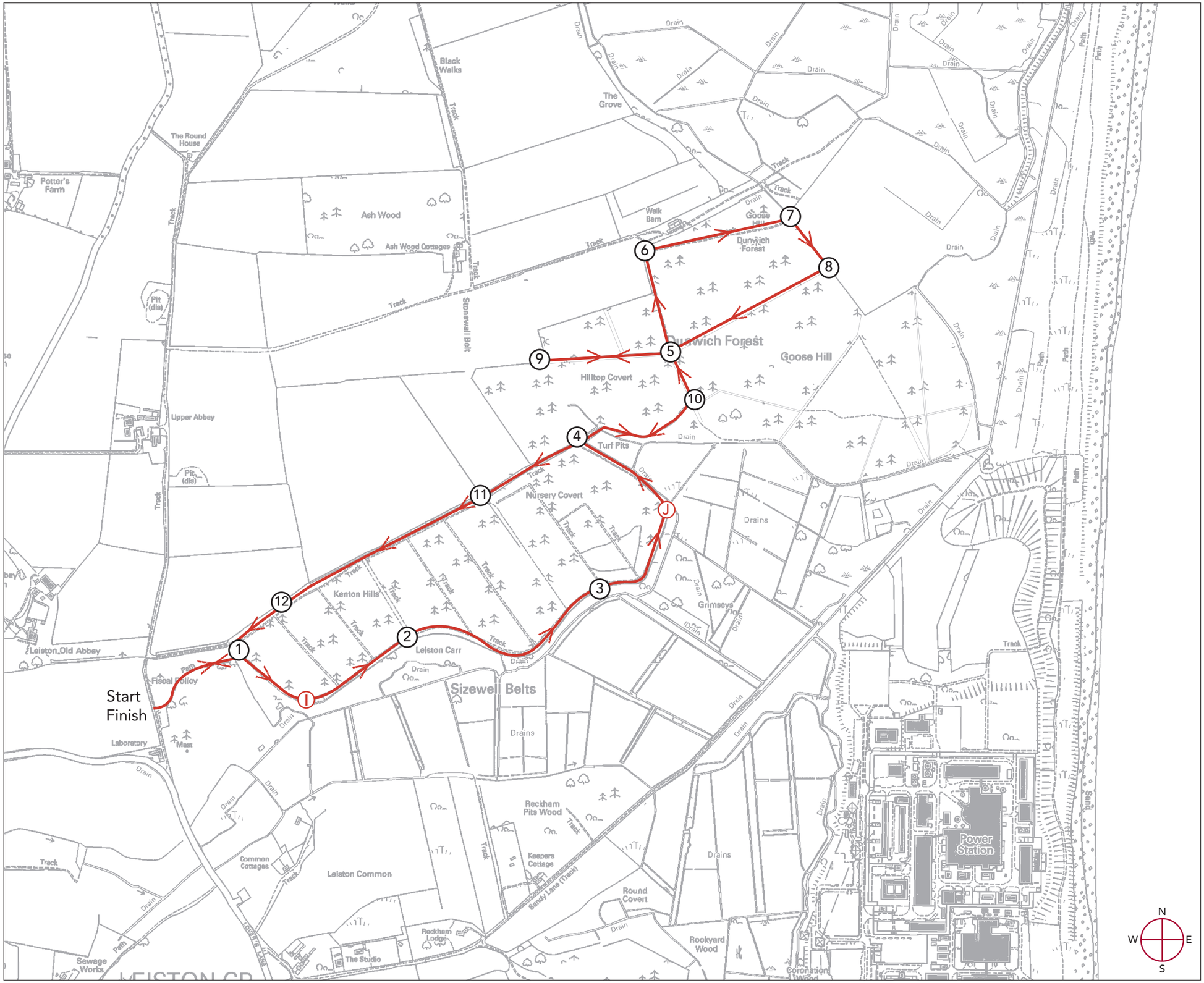
Office: Monmouth
Tel: 01600 891576

Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 6**



Transect Route and Position of Static Anabat
I & J – 12th Sept 2007

Legend

- Direction of Walked Transect
- ① Transect Listening Station
- Ⓘ Ⓙ Position of Static Anabat

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Office: Monmouth
Tel: 01600 891576

Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 7**

Location of serotine, Leisler's, noctule, *Myotis* sp., whiskered, Natterer's, long-eared, and barbastelle commuting & foraging. combined results of all visits (transects and static anabats)

Legend

- Serotine
- Noctule
- *Myotis* sp.
- Whiskered
- Natterer's
- Long-eared
- Barbastelle
- Leisler's

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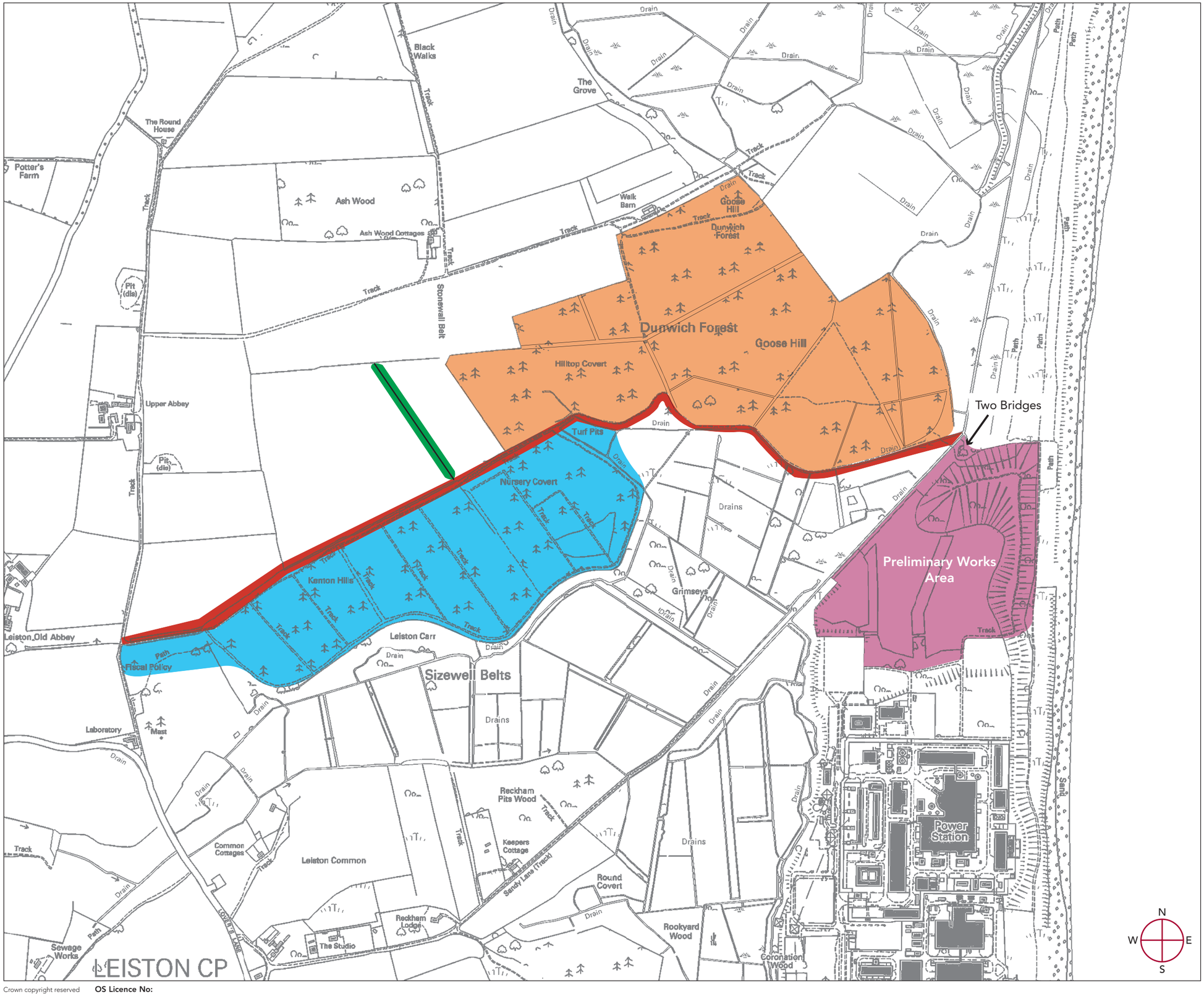
Office: Monmouth
Tel: 01600 891576

Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 8**



Survey Site Regions for Purpose of Evaluation

Legend

- Preliminary Works Area
- Dunwich Forest
- Kenton Hills & Nursery Covert
- The north-south tree line east of Hilltop Covert
- Permissive Footpath

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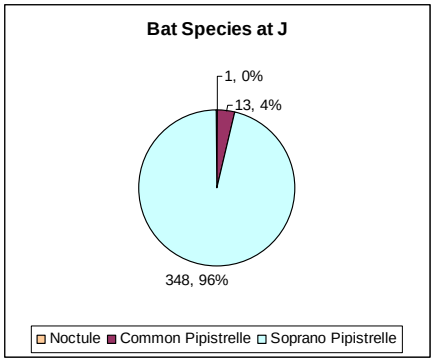
Office: Monmouth
Tel: 01600 891576

Date	**OCT'07**	Checked	**SS**	Scale	**NTS**
Drawn	**SW**	Approved	**SS**	Job Ref	**3040**
Status	**FINAL**				

Dwg No. **FIGURE 9**

J- Western edge of grazing marsh 12th September 2007 (see Figure 7)



4. Preliminary Evaluation of the Importance of the Survey Area to Bat Populations

4.1 Evaluation of Foraging and Commuting Habitat for Bats

An evaluation of resources has been made in accordance with IEEM EcIA guidance (see 2.2 Evaluation Methodology).

The survey area has been divided into five sectors for the purpose of evaluation (see **Figure 9**). These are:

- Dunwich Forest north of the east–west access track;
- The corridor of the east-west access track from Fiscal Policy to the preliminary works area;
- Kenton Hills and Nursery Covert south of the existing east-west access track which runs from Fiscal Policy in a Northeast direction towards Goose Hill;
- The north-south tree line east of Hilltop Covert; and
- The preliminary works area.

These sections have been evaluated at a geographic level according to their value for commuting and foraging bats.

4.1.1 Dunwich Forest

The pine plantation of Dunwich Forest was found to support two foraging and commuting pipistrelle species, commuting noctule and serotine bats. Noctule and serotine activity was predominantly along the main central rides of the woodland. The wide rides and the eastern edge of the forest where it adjoins the area of arable reversion to heathland (at Retsoms), have regular commuting and foraging bat activity, especially of pipistrelles. Although this sector is not used by many species, it has relatively high levels of activity along its margins and wide rides. It is regarded as having value at the local level.

4.1.2 Corridor of East-West Access Track

This permissive footpath, which runs from Fiscal Policy, along the north side of Kenton Hills and the southern edge of Dunwich Forest to the preliminary works area, has the greatest diversity of tree species of the five sectors. Parts of the track are adjacent to arable fields, coniferous plantation woodland, deciduous woodland, a small area of wetland carr with pools and an area of grazing marsh. The surveys indicate that this variety of adjacent habitats, vegetative diversity and likely consequent invertebrate diversity, is directly linked to bat diversity and activity levels. A total of nine bat species (including barbastelle) were recorded along this track. Although barbastelle is more widespread in Suffolk than in many other counties, this is a rare species at national level. The numbers of other bat species using this sector of the survey area were high, with both commuting and foraging by most species noted. A total of approximately 600 bat sound files (75% of all bat sound files for the survey area) were recorded during the transect walks in this section of the survey area over the five survey visits. On average approximately 100 sound files were recorded per visit. For this reason, but also taking into account the local context of the species recorded in Suffolk, the regular commuting presence of UK BAP species (noctule, soprano pipistrelle and brown long eared bat) and the records of Suffolk BAP species (barbastelle and common pipistrelle), this sector of the survey area is regarded as being of county value to commuting and foraging bats.

4.1.3 Kenton Hill and Nursery Covert

The southern margins of this sector have mature deciduous trees and are adjacent to grazing marsh. Seven bat species, including barbastelle, and high levels of bat activity were recorded (approximately 200 sound files were recorded during the transect walks in this section of the survey area over the five survey visits.). This is likely to be due to high invertebrate numbers resulting from habitat diversity, especially along the margins of the woodland. This section of the survey area is regarded as being of county value to bats.

4.1.4 North-South Treeline East of Hilltop Covert

This mainly deciduous treeline was used by two pipistrelle species, mostly for commuting. It is regarded as having value in the zone of immediate influence only.

4.1.5 Preliminary Works Area (the likely location of the new plant)

Soprano and common pipistrelles were very occasionally recorded in the preliminary works area (as well as one serotine bat pass). This section of the survey area is regarded as having negligible value to bats.

4.2 Evaluation of Tree Roosting Across the Survey Area

No tree roosts were found during the survey. Three bat boxes were recorded on a Corsican pine, and their positions are shown on **Figure 4**. Only 7% of the 196 trees surveyed showed high potential to support roosting bats, although some features with high potential to support bats may have been missed because of the foliage present. The majority of trees with high potential to support bat roosts were located along the margins of the east-west permissive footpath. The potential tree roosts within the survey area, including the large percentage of pine plantation, are considered to be important in a local context as they offer possible shelter to a range of bat species in the area.

5. Conclusions

5.1 Key Species

Common and soprano pipistrelle were recorded during all five survey visits and occurred, geographically, throughout most of the five transect lengths. Both species were recorded feeding and commuting throughout the survey area; social calls were recorded along the east-west permissive footpath (running along the northern fringe of Kenton Hills and Nursery Covert and the southern edge of Dunwich Forest).

Noctule, serotine and *Myotis* species were recorded on all five visits but were more localised in occurrence. Noctule was recorded flying, and occasionally feeding, at the edge of Dunwich Forest, along the main east-west ride of the forest, and along the east-west permissive footpath. Serotine was recorded commuting across the site; the majority of the activity being along the main east-west ride in Dunwich Forest.

Leisler's bat was noted on one survey visit, commuting along the southern edge of Dunwich Forest. Long eared bats were recorded on three survey visits, along a stretch of the east-west permissive footpath. Natterer's bats were recorded on two survey visits, along the southern edge of Dunwich Forest, and barbastelle on three survey visits; commuting along the east-west permissive footpath and a parallel ride in Dunwich Forest.

The key bat species in the study area are barbastelle, noctule, brown long eared, common and soprano pipistrelle. Of the nine species recorded within the survey area, barbastelle is the most notable, being a Suffolk BAP species and an Annex 2 (Habitats Directive) species. Noctule, soprano pipistrelle and brown long eared bat are UK BAP species.

5.2 Key Areas

Two sectors of the survey area have been evaluated as being of county importance. They are the corridor of the east-west permissive footpath and Kenton Hill and Nursery Covert:

The corridor of the east-west permissive footpath

The variety of adjacent habitats along the corridor of the east-west track, with its vegetation diversity and likely consequent invertebrate diversity, has been shown by the surveys to support the greatest numbers of species and highest levels of bat activity, especially along the eastern half of the track. A total of nine bat species have been recorded along this track including barbastelle, and a total of approximately 600 sound files (75% of all bat sound files recorded) were recorded here.

The southern margins of Kenton Hill Nursery Covert have mature deciduous trees and are adjacent to grazing marsh. The sector was similar to the permissive footpath, and a greater diversity of bat species were recorded (up to seven) than elsewhere in the survey area. These included barbastelle. Bat activity levels were high (approximately 200 sound files were recorded during the transect walks in this section of the survey area over the five survey visits). This is likely to be due to high invertebrate numbers as a result of habitat diversity, especially along the margins of the plantation woodland

5.3 Preliminary Assessment of the Potential Effect of Development Proposals on Bat Assemblage

5.3.1 Use of Dunwich Forest for Location of Site Compounds

Dunwich Forest is considered of local importance to bats, largely because of the use of its rides and edges by commuting and feeding noctule and serotine as well as two pipistrelle species. Depending on how the site compounds are located within the forest, the proposals may have a significant effect on local bat populations and environmental measures to address these effects will be required.

5.3.2 Widening of Parts of the East-West Permissive Footpath from Fiscal Policy to Preliminary Works Area

The east-west permissive footpath has been valued at the county level, because of the presence of nine bat species, out of the twelve bat species known to occur in Suffolk. Most of these species were recorded as commuting and foraging along this track and most of the high potential roost trees are adjacent to it. Any development that might degrade or reduce the value of this 'corridor', could significantly affect bat populations of importance at county level and environmental measures will be required to address this.

5.4 Preliminary Works Area (the likely location of the built plant)

This preliminary works area has been valued as having negligible interest for bats, with low levels of activity in both the commoner pipistrelle species noted, and one record of serotine. Given the low levels of activity and limited bat diversity recorded it is considered that development of the preliminary works area is unlikely to have a significant impact on bat populations.

6. Recommendations

The current survey work has enabled the survey area to be valued in terms of bat usage with some degree of confidence. The results of the survey are likely to remain valid, for the purpose of ecological impact assessment, for approximately two years. However site usage by bats can change as a result of tree felling, woodland maturation and conditions beyond the margins of a site. There were some constraints to survey resulting from the time of year when the tree survey was undertaken. For these reasons the following recommendations have been made in order that a reasoned judgement as to the value of the survey area to bats can be reached:

- If more than two years elapses before a planning application is submitted, it is recommended that all bat activity and roost survey work is repeated. Bats are highly mobile and their colonies dynamic;
- The tree roost surveys were undertaken when trees were in leaf. Surveys of all deciduous trees, especially in key areas, should be repeated between November and March in order to have confidence that trees with signs of actual bat roosts or high potential were not missed;
- Transect surveys should be carried out in April and May 2008 to extend the survey period over spring. The transect surveys should be comparable to those already undertaken in 2007, thereby extending the period covered by bat activity surveys.

It is recommended that the status of the barbastelle roosts at Upper Abbey Farm and Lower Abbey is determined in 2008. It is considered necessary to establish if a breeding colony is present when determining the value of habitats within the BE landholding and the level of impact on the local population. The suggested approach would be to survey Upper Abbey Farm and Lower Abbey in April to look for fresh droppings that would indicate bats are likely to have used the site in winter. Subsequent surveys in May and June should be carried out to help determine if bats are roosting in the buildings in summer, with possible successive counts until August to assess the breeding status of the colony. It may also be necessary to establish if other buildings are being used by barbastelle. If access is permitted, surveys in April of other suitable buildings, such as Theberton House, should be undertaken.

The 2007 survey results suggest barbastelle are travelling across the survey area and therefore the proposed works may sever commuting routes. It is therefore recommended that important flight paths around roosts are identified. It is proposed that non-intrusive survey techniques are used in 2008 to monitor possible flight paths. Fixed location data loggers, such as Anabats, could be positioned on linear routes around the roosts: one on the lane to the north of Upper Abbey Farm; one on the lane to the south of Upper Abbey Farm; and one on Abbey Road to the south of Theberton House. Driven and walked transects to survey linear features in the landscape are also suggested. Transects should be short enough to allow repeat sampling of given points along the route throughout the period of peak bat activity after dusk. The time and location of bat records can then be plotted to build up a picture of how barbastelle are using the landscape[4]. Flight paths should be monitored between April and July/ August.

The results of the 2008 surveys will inform the need to undertake further detailed survey work in 2009. This is likely to be required if additional information is required to determine how breeding female barbastelle bats are using the site.

7. References

Bat Conservation Trust (2007). *Bat Surveys – Good practice guidelines*. Bat Conservation Trust. London

Bat Conservation Trust (2007). *The state of the UK's bats: National Bat Monitoring Programme Population Trends*. The Bat Conservation Trust.

Entec UK Ltd. (2007). Greater Gabbard Offshore Windfarm 132kV Underground Cable Route Options. Report to National Grid.

Mitchell-Jones, A.J. (2004). *Bat mitigation guidelines*. English Nature.

Richardson, P. (2000). *Distribution atlas of bats in Britain and Ireland 1980-1999*. Bat Conservation Trust.

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www.english-nature.org.uk

[4] Barbastelle cover great distances, often over 10km, when foraging at night and may fly in large circuits across the landscape, covering many different habitats (Dr. Peter Shepherd, pers comm).

Mortimer, G. (2005). Natterer's bat, *Myotis natteri*, and commercial coniferous plantations. Abstract presented at the 10th European Bat Research Symposium, Galway, Ireland, 21-26 August 2005.

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James Gillespie

Entec Reviewer:

[redacted] .....

Lynn Whitfield

Appendix A
Tree Survey Results (See Figure 2 for Tree Locations)

10 Pages

Key to abbreviations appear the first time the abbreviation has been used.

Figure 1 shows the location of all tree numbers.

Table A1. Sizewell Tree Survey Results (07/06/2007)

Weather: Cloud 100% **Precipitation:** heavy rain, thunderstorm **Temperature:** 12degC rising to 18degC

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
A	1	*Quercus. robur*	Hole (H)	8	S	Med (M)	
	2	*Tilia europea*	Epicormic Growth (EG)	-	All	Low (L)	
	3	*Q. robur*	H	1	E	High (H)	Possible droppings
	4	*T. europea*	EG	-	All	L	
	5	*Q. robur*	Loose Bark LB)	1	S	L	
B	6	*Q. robur*	Split (S), LB	2	W	M	
	7	*Q. robur*	EG	1.5	All	L	
	8	*Fraxinus excelsior*	Downward H (DH)	0.5	W	H	
			S, LB	5	E	H	
	9	*Q. robur*	LB, S	2 - 5	SE	L/M	
	10	dead *Q. robur*	LB, H	All	All	H	
C	11	*Q. robur*	LB, S, H	1 -7	All	L/M	
	12	*Q. robur*	LB, S, H	1 -7	All	L/M	
	13	*Q. robur*	LB, S, H	1 -7	All	L/M	
	14	*Q. robur*	LB, S, H	1 -7	All	L/M	
	15	*Q. robur*	LB, S, H	1 -7	All	L/M	

Table A1 (continued) **Sizewell Tree Survey Results (07/06/2007)**

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	16	*Q. robur*	LB, S, H	1 -7	All	L/M	
	17	*Q. robur*	LB, S, H	1 -7	All	L/M	
	18	*Q. robur*	LB, S, H	1 -7	All	L/M	
	19	*Q. robur*	LB, S, H	1 -7	All	L/M	
	20	*Q. robur*	LB, S, H	1 -7	All	L/M	
	21	*P. canescens*	LB,	-	All	L	
	22	*Populus canescens*	upward H	1	S	H	
	23	*Q. robur*	LB, DH	3-5		M	
	24	*Q. robur*	LB, DH	3-5		M	
	25	*Q. robur*	LB, DH	3-5		M	
D	26	*Q. robur*	LB, S branches			L	
	27	*Q. robur*	LB, S branches			L	
	28	*Q. robur*	LB, S branches			L	
	29	*P. canescens*	Broken Branches(BB)			None (N)/L	
	30	*P. canescens*	BB			N/L	
	31	*Q. robur*	LB, DH, S	2+	S	M	
	32	*Q. robur*	LB, DH, S	2+	S	M	
	33	*Q. robur*	LB	3	NE	L	
	34	*P. canescens*	LB, Cracks(C)	4+	All	L	
	35	*Q. robur*	LB, BB	-	All	L	
	36	*Q. robur*	LB, BB	-	All	L	

Table A1 (continued) Sizewell Tree Survey Results (07/06/2007)

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	37	*Q. robur*	vertical H, Ivy(l)	0.5+		poss H	Too much ivy to determine
	38	*Q. robur*	LB, C	1+		L	
	39	*Q. robur*	LB, C	1+		L	
	40	*Q. robur*	LB, C	1+		L	
	41	*P. canescens*	LB, S, C			L/M	
	42	*Q. robur*	EG, LB, S	1	All	L/M	
	43	*Q. robur*	LB, S, occ. DH	1+		M	
	44	*Q. robur*	LB, S, occ. DH	1+		M	
	45	*Q. robur*	LB, S, occ. DH	1+		M	
	46	*Q. robur*	LB, S, occ. DH	1+		M	
	47	*Q. robur*	LB, C			L	
	48	dead *Q. robur*				M	Potential downward H
	49	*Q. robur*	EG			L	
	50	dead *Q. robur*	LB	1+		L	
	51	*Q. robur*	LB, DH		SW	H	
	52	*Q. robur*	LB, DH		SW	H	
	53	*Q. robur*	LB, DH		SW	H	
	54	*Q. robur*	LB, DH		SW	H	
	55	*Q. robur*	LB, DH		SW	H	
	56	dead *Q. robur*	LB	All	All	L/M	
E	57	*Q. robur*	LB, S	1+		L/M	

Table A1 (continued) **Sizewell Tree Survey Results (07/06/2007)**

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	58	*Q. robur*	LB, S	1+		L/M	
	59	*Q. robur*	LB, S	1+		L/M	
	60	*Q. robur*	LB, S	1+		L/M	
	61	*Q. robur*	LB, S	1+		L/M	
	62	*Q. robur*	LB, S	1+		L/M	
	63	*Q. robur*	LB, S	1+		L/M	
	64	*Q. robur*	LB, S	1+		L/M	
F	65	*Q. robur*	LB, DH			L/M	
	66	*Q. robur*	LB, DH			L/M	
G	67	*Q. robur*	LB, BB, S			L/M	
	68	*Q. robur*	LB, BB, S			L/M	
	69	*Q. robur*	LB, BB, S			L/M	
	70	*Q. robur*	LB, BB, S			L/M	
	71	*Q. robur*	LB, BB, S			L/M	
	72	*Q. robur*	LB, BB, S			L/M	
	73	*Q. robur*	LB, BB, S			L/M	
	74	*Q. robur*	LB, BB, S			L/M	
	75	*Q. robur*	LB, BB, S			L/M	
	76	*Q. robur*	LB, BB, S			L/M	
	77	*Q. robur*	LB, BB, S			L/M	
	78	*Q. robur*	LB, BB, S			L/M	

Table A1 (continued) **Sizewell Tree Survey Results (07/06/2007)**

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	79	*Q. robur*	LB, BB, S			L/M	
	80	*Q. robur*	LB, BB, S			L/M	
	81	*Pinus. sylvestris*	LB	5		L	
	82	*P. sylvestris*	LB	5		L	
	83	*P. sylvestris*	LB	5		L	
	84	dead ?	LB			L	
	85	dead ?	I, S, LB			H	
H	86	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	87	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	88	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	89	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	90	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	91	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	92	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	93	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	94	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	95	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	96	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	97	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	98	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	99	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)

Table A1 (continued) **Sizewell Tree Survey Results (07/06/2007)**

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	100	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	101	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	102	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	103	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	104	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	105	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	106	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	107	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	108	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	109	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	110	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	111	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	112	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	113	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	114	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	115	*Q. robur*	LB, BB, S			L	Mostly intact (recheck winter)
	116	*P. sylvestris*				N/L	Mostly intact
	117	*P. sylvestris*				N/L	Mostly intact
	118	*P. sylvestris*				N/L	Mostly intact
	119	*P. sylvestris*				N/L	Mostly intact
	120	*P. sylvestris*				N/L	Mostly intact

Table A1 (continued) Sizewell Tree Survey Results (07/06/2007)

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	121	dead *Q. robur*	LB, H			M/H	
	122	dead *Q. robur*	LB, H			M/H	
	123	dead *Q. robur*	LB, H			M/H	
	124	dead *Q. robur*	LB, H			M/H	
I	125	*T. europea*	LB, multi stem			L	Dense central growth
	126	*T. europea*	LB, multi stem			L	Dense central growth
J	127	*Salix sp.*	DH	10	N	L	
	128	*Salix sp.*	DH	10	N	L	
	129	*Betula pendula*	LB,			N/L	
	130	dead *B. pendula*	LB			N/L	
	131	dead *B. pendula*	LB			N/L	
	132	dead *B. pendula*	LB			N/L	
	133	dead *B pendula*	LB			N/L	
	134	dead *B. pendula*	LB			N/L	
	135	dead *B. pendula*	LB			N/L	
	136	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	137	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	138	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	139	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	140	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	141	*B. pendula*	BB, H			L	Some multistem, (recheck winter)

Table A1 (continued) **Sizewell Tree Survey Results (07/06/2007)**

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	142	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	143	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	144	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	145	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	146	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	147	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	148	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	149	*B. pendula*	BB, H			L	Some multistem, (recheck winter)
	150	*Pinus spp*				N/L	Mostly intact
	151	*Pinus spp*				N/L	Mostly intact
	152	*Pinus spp*				N/L	Mostly intact
	153	*B. pendula*				No	Grove of trees
	154	*B. pendula*				No	Grove of trees
	155	*B. pendula*				No	Grove of trees
	156	*B. pendula*				No	Grove of trees
	157	*B. pendula*				No	Grove of trees
	158	*B. pendula*				No	Grove of trees
	159	*B. pendula*				No	Grove of trees
	160	*B. pendula*				No	Grove of trees
	161	*B. pendula*				No	Grove of trees
	162	*B. pendula*				No	Grove of trees

Table A1 (continued) **Sizewell Tree Survey Results (07/06/2007)**

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	163	*B. pendula*				No	Grove of trees
	164	*B. pendula*				No	Grove of trees
	165	*B. pendula*				No	Grove of trees
	166	*B. pendula*				No	Grove of trees
	167	*Q. robur*				N/L	Mostly intact
	168	*Q. robur*				N/L	Mostly intact
	169	*B. pendula*				N/L	Mostly intact
	170	*B. pendula*				N/L	Mostly intact
	171	*B. pendula*				N/L	Mostly intact
	172	*B. pendula*				N/L	Mostly intact
	173	*B. pendula*				N/L	Mostly intact
	174	*B. pendula*				N/L	Mostly intact
	175	*B. pendula*				N/L	Mostly intact
	176	*B. pendula*				N/L	Mostly intact
	177	*B. pendula*				N/L	Mostly intact
	178	*B. pendula*				N/L	Mostly intact
	179	*B. pendula*				N/L	Mostly intact
	180	*B. pendula*				N/L	Mostly intact
K	181	*Pinus spp*				N/L	Mostly intact
	182	*Pinus spp*				N/L	Mostly intact
	183	*Pinus spp*				N/L	Mostly intact

Table A1 (continued) Sizewell Tree Survey Results (07/06/2007)

Zone	Tree No	Species	Feature	Height (m)	Aspect	Bat Potential	Notes
	184	*Pinus spp*	S branches	7	E	M/H	
L	185	*Q. robur*				N/L	Intact
	186	dead *Q. robur*	LB, vert S	5	E	H	
	187	*Q. robur*	I (dead)			L	
	188	*Q. robur*				N/L	Intact
M	189	*Aesculus hippocastanum*	LB, DH			L	
	190	dead *A. hippoca.*	LB, S			L	
	191	*A.hippocastanum*	I, LB, S		All	L/M	
	192	*A.hippocastanum*	DH	2	S	M	
	193	*A.hippocastanum*	I	1+	All	L	
	194	*Q. robur*	I	6	N	M	
N	195	*Q. robur*	I, H, LB, S	2+	All	H	
	196	*T. europea*	I		All	L	

Appendix B
Bat Echolocation Call Analysis Spreadsheets from Five Evening Activity Surveys

28 Pages

Table B1. Anabat recordings 07/06/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)

For location of transect point referred to in Table B1 see Figure 3

Sizewell Transect

Sum of Number

		Label								
Time	**Transect Pt**	**Barbastelle**	**Long-eared**	**Myotis**	**Natterer's**	**Noctule**	**Common pipistrelle**	**Soprano pipistrelle**	**Serotine**	**Grand Total**
09:10	1							1		1
09:11								3		3
09:14								1		1
09:15								3		3
09:24								1		1
09:25								2		2
09:26							1	1		2
09:28	3							1		1
09:34						1		2		3
09:35	4							1		1
09:38								1		1
09:40	5								1	1
09:41								1		1
09:45								1		1
09:48		1								1
09:50								2		2
09:51	6		2				1	1		4
09:52							1	1		2

Table B1 (Continued) **Anabat recordings 07/06/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)**

Time	Transect Pt	Barbastelle	Long-eared	Myotis	Natterer's	Noctule	Common pipistrelle	Soprano pipistrelle	Serotine	Grand Total
09:53								2		2
09:55		1	1	1	1		1			5
09:56							2	1		3
09:57							3	2		5
09:58	7						2	3		5
09:59							3	2		5
10:00							1			1
10:01							1	1		2
10:25							2	2	1	5
10:26							3	3		6
10:27	7						4	4		8
10:28							3	4		7
10:29							2	1		3
10:30							2	1		3
10:31	6						3			3
10:33							1			1
10:34							1	3		4
10:36								1		1
10:37						1				1
10:39								1		2
10:40							1			1

Table B1 (Continued) **Anabat recordings 07/06/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)**

Time	Transect Pt	Barbastelle	Long-eared	Myotis	Natterer's	Noctule	Common pipistrelle	Soprano pipistrelle	Serotine	Grand Total
10:47					1					1
10:53								1		1
10:54								2		2
10:55	3						1	1		2
11:02	2							1		1
11:04							1			1
11:05		1					1	2		4
11:06							1	4		5
11:07							3	1		4
11:08							2	1		3
11:11								1		1
23:13	1						2			2
Grand Total		**3**	**3**	**1**	**2**	**2**	**49**	**68**	**2**	**13o**

Table B2 Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)

The transect/points and numbers referred to in this table are shown in **Figure 4**.

Site	**Sizewell**	**Sunset time**	**21.16**			
Date	**6th July 2007**	**Weather conditions**	**Temp start**	**16 degrees**	**60% cloud reducing to 5% cloud becoming blustery**	
Surveyor	**ADW**	**Temperature end**		**14 degrees**		

Transect /Point	**Time**		**Track No.**	**Species**	**Time of record**		**Comments**	**Call duration**				
	From	**To**			**24 Hour**	**Track Time**		**Max**	**Min**	**Peak kHz**	**Inter pulse**	**ms**
	21.2	21.46	1									
x - 1J	21.46	21.48	2	Pip	21.48		Along wood edge			50		
1J	21.48	21.51	3	Pip	21.48		Seen foraging constant socia calling on woodland/field edge			50.9		
				P55	21.5	2.28						
				P55	21.51	3	Foraging heard not seen					
1J - 1V	21.51	21.56	4	P55	21.52	0.3	2x passes up and down					
				P45	21.55	4.15	Commuting along ride					
				P45	21.56	4.5						
1V	21.56	21.59	5	P45	21.59	2.45	By large pine foraging					
1V - 1U	21.59	22.02	6	P55	22	0.26						

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments						Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse		ms
				P55	22.01	1.14	Foraging						
1U	22.02	22.05	7	Pip	22.02	0.4	Faint						
				P45	22.03	1.3	Heard not seen						
				P55	22.04	2.23							
				P45	44.04	3							
1U - 1X	22.05	22.11	8	Pip	22.05	0.45	Glow worms						
				P55	22.06	1.46							
1X	22.11	22.14	9	-									
1X - 1S	22.14	22.22	10	LEB	22.17	3.27	Missing frequencies	76	31	43	108	108	148
1S	22.22	22.21	11	Myotis	22.18	0.35	Along ride	76	25	41.3	85	68	102
				P45	22.19	1.29							
				Barb	22.2	2.3	90% confidence	36	30.9	33	111	115	118
1S - 1R	22.22	22.25	12	P55	22.24	2							
				LEB	22.24	2.49		57	24	34	38	71	80
1R	22.25	22.28	13	P45	22.27	1.5							
				P45	22.28	2.5							
				P55	22.28	3.2	Social calling						

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments						Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse		ms
1R - 1K	22.29	22.37	14	P55	22.29	0							
				Ser	22.31	1.49		52.9	22	28.8	91	167	207
				Ser	22.34	4.2	Two bats			29	108	109	115
				P45	22.34	5	Commuting						
1K	22.37	22.4	15	P45	22.38	0.2							
				P45	22.39	2.1	Commuting 2x passes						
				LEB	22.4	3	Faint and rapid	44.7	25	30	44	78	94
				LEB	22.4	3.18	Faint and rapid			41	68	74	83
1K - 1L	22.4	22.44	16	-									
1L	22.44		17	Ser	22.44	0.2				31.2			
				Ser	22.44	0.45							
				Ser	22.44	0.57							
				Ser	22.45	1.45	Seen on ride			29.8			
				P55	22.45	2.25							
				Ser	22.46	2.45	Foraging	45	27	28.8	177	73	
				Bat	22.47	3.3							
1L - 1Q	22.47	22.55	17	P45	22.49	5.5							

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments						Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse		ms
			18	Myotis + P55	22.5	0.27				41.8			
				P55	22.51	1.25	Foraging , 3X Passes over open glade						
				P45 + P55	22.51	2.15	Faint						
				Bat	22.53	3.5	2x passes						
				P45	22.54	4.45							
1Q	22.55		19	Pip	22.55	0.2							
				Pip	22.55	0.42							
				P45	22.56	1	Foraging						
				P45	22.57	2.15	Foraging						
				P45	22.58	3							
1Q - 1P	22.58	23	20	P45	22.58	0.4							
				P55	22.59	1.2							
				P55	22.59	1.35	Foraging						
1P	23	23.04	21	P55	23.02	1.55	Foraging						
1P - 1M	23.04	23.08	22	Myotis	23.07	3.3		75	26	30 - 45	66	76	59
1M	23.08	23.12	23	Natterer's	23.09	1	Pass at 1M on main pass	102.5	23.5				

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments						Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse		ms
				Myo	23.09	1.19	Foraging - poor sonogram						
				Natterer's	23.09	1.35	Shorter pass	76	23.5		105	117	114
				Myo	23.1	2.4	Poor sonogram						
1M - 1L	23.12	23.14	24	P55	23.13	1.20+							
				P45	23.13	2	Foraging at 1L						
1L	23.14	23.17	25	Natterer's	23.14	0.00+	Commuting along ride	140	17.8	61	68.7	70	
				Pip	23.15	1.3							
1L - 1K - 1J	23.17	23.21	26	LEB	23.19	2.29							
				P45	23.2	3	Foraging at 1J						
1J	23.21	23.23	27	P45 x2	23.21	0.00+	Foraging together						
				Nyct	23.21	0.22							
				P45 x2	23.23	1.56	Foraging together						
1J - 1I - 1Z	23.23	23.26	28	-									
1Z	23.26	23.3	29	Ser	23.28	0.45	Canopy pass			30			
				Barb	23.28	1.33	70% confidence			31.7	101	97.6	
				LEB	23.28	1.5	Foraging			39.4			
				Barb	23.29	2.1	90% confidence	34	28	30.7	110	115	

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments					Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse	ms
				Barb	23.29	2.4	80% confidence			41		
				Bat	23.29	2.4	Faint sonogram			30.7		
				LEB/Myo	23.29	2.4						
				Barb	23.3	3	Faint - 90% confidence	34	28	31.2	242	
1Z - 2F	23.3		29	P55	23.31	4	Foraging up and down					
			30	Pip	23.35	3.23						
				P55	23.35	3.45	3x passes					
2F	23.38		30	-								
2F - 2E	23.42		31	P45	23.42	0	Faint					
				Bat	23.46	3.5	Faint					
2E	23.44		31	-								
2E - 2F	23.47		31	Ser	23.47	5.3				26		
			32	P55	23.48	1						
				Pip + Ser	23.49	1.3						
2F - 2G	23.5		33	-								
2G	23.55		34	-								
2G - 2N	23.58		35	-								

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments					Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse	ms
2N - anabat 2	0.01		36	P55	0.01	0.00+	3x passes foraging					
Anabat 2				Pip	0.03	2.3	Social calling					
			37	P55	0.45							

Surveyor Total			
P45	24	Myotis	4
P55	29	Natterer's	3
Pip	10	Long-eared	6
Serotine	11	Myo/LEB	1
Nyctalus	1	Bat	4
Barbastelle	5	Total	98
Surveyor	HL		

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments					Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse	ms
2F1 -2F	21.35	21.4	2	Pip	21.35	beg	2x bats along ride					
				P55	21.36	1.45	1 bat foraging, 2x passes					
2F			3	P55	21.45	4						
			Grp2 Tr1	Pip	21.51	3.5						
				P45	21.54	7.3						
				Pip + P55	21.56	9.15	2x passes by P55					
			2	P55	21.59	0.15	3x passes					
				P55	22.03	5.30 - 6.30	5x passes					
				LEB	22.03	4.4						
2F - 2G	22.05	22.1	3	P55	22.05	0.3	Foraging					
				P55	22.06	1.3						
				noctule	22.08	3.19	3x glow worms		<20			
				Bat	22.08	3.19	Faint					
				P55	22.09	4.15	Flying west to east					
				P55	22.1	end	2x bats foraging					
2G	22.1	22.14	4	P55	22.1	0.2						

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments					Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse	ms
				P55	22.12	1.5	Constant foraging over drain and field social calling					
2G - 2H	22.14	22.24	5	Poss barb		1.08	Flying east - 66% confidence, FD only			33.5	34	
				P55 + P45 + barb		1.57	75% confidence on barb					
				P45								
			6	P55	22.18	1.05	Flying East to west					
				P55	22.21	3.48	Heard not seen					
				P55	22.21	4.05						
				P55	22.22	5.13						
2H	22.24	22.27	8	Natt	22.24	0.15			23			
				P55	22.25	2	Several passes and constant feeding					
				Myotis	22.27	2.5						
2H - 2J	22.27	22.31	9	P55	22.27	0						
				P55 + bat	22.27	0.16						
				P45 + bat	22.28	0.53						

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments	Call duration				
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse	ms
				P55	22.29	1.4						
				P55 + P45	22.29	1.5						
2J	22.31	22.33	10	P45	22.32	1.5	Foraging					
2J - 2N	22.33	22.42	11	P55	22.35	2.01	Commuting					
				P55	22.35	2.3	Social calling					
2N	22.42	22.45	12	-								
2N - 2K	22.45	22.51	13	-								
2K	22.51	22.54	14	-								
2K - 2M	22.54	22.57	15	-								
2M	22.57	23	16	-								
2M - 2Q	23	23.09	17	-								
2Q	23.09	23.12	18	P55	23.12	3	Commuting along drain to north					
2Q - 2P	23.12	23.16	19	-								
2P	23.16	23.19	20	-								
2P - 2J	23.19	23.27	21	-								
2J	23.27	23.2	22	-								

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments						Call duration	
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse		ms	
2J - 2I	23.2	23.33	23	bat	23.3	0.18	Faint							
				P45	23.31	0.4								
				P45	23.32	1.16	Faint							
				P45	23.32	1.36								
				P45	23.32	2.1	Foraging - 2x passes							
2I	23.33	23.38	24	Bat	23.34	0.05	Faint							
				Bat	23.34	0.5	Very faint							
				P45	23.36	3								
				P45	23.36	3.2								
2I - 2U	23.38	23.4	25	P45	23.38	0.38	Foraging							
2U	23.4	23.44	26	P55	23.42	1.2	Heard not seen							
				Natterer's	23.42	1.58			21.9					
				P55	23.43	2.48	2x passes							
2U - 2W	23.44	23.47	26	-										
2W	23.47	23.5	27	-										
2W - 2N	23.5	23.55	28											
2N	23.55	23.58	29	Ser + P55	23.58	2.59				29.3	123	126	5.7	6.9

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments					Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse	ms
2N - Anabat	23.58	0.02	1	P55	0.02	1.03	3x passes					
Anabat - 2F	0.02	0.08	2	P55	0.25	0.16	Foraging					
2F	0.08	0.12	3	-								
2F - 1J	0.12	0.2	4	P55		4.2						
				P45		8.03	2x passes					
1J	0.2	0.25	5	P45	0.21	1.05						
				P45	0.22	2.05	Commuting 6x passes					
				Ser + P45	0.23	3.3						
1J - 1K	0.25	0.27	6	P45	0.25	beg						
				P55	0.26	1.04						
				P45	0.26	1.4						
				P55	0.27	2.02						
1K	0.27	0.3	7	P55	0.27	0.05						
				P55	0.28	0.2						
1K - 1L	0.3	0.32	8	-								
1L	0.32	0.35	9	P55	0.32	0.05						
1L - car	0.35	0.46	10	P55	0.39	4						

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Transect /Point	Time		Track No.	Species	Time of record		Comments					Call duration
	From	To			24 Hour	Track Time		Max	Min	Peak kHz	Inter pulse	ms
				P55	0.39	4.39						
				P55	0.4	5.05						
				P55	0.44	8.58						
				P55	0.46	10.3						

Surveyor Total number of passes

P45	21	Myotis	1
P55	50	Natterer's	2
Pip	3	Long-eared	1
Serotine	2	Myo/LEB	0
Nyctalus	1	Bat	6
Barbastelle	2	Total	89

Grand Total

Table B2 (continued) **Duet Recordings of Bat Passes 06/07/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Species	No passes	Species	No passes
P45	45	Myotis	5
P55	79	Natterer's	5
Pip	13	Long-eared	7
Serotine	13	Myo/LEB	1
Nyctalus	2	Bat	10
Barbastelle	7	Total	187

Table B3 Anabat Recordings 16/08/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)

For location of transect point referred to in table see **Figure 5**.

Time	Transect pt	Brown long eared	Leislers	*Myotis sp*	Noctule	Pip social calls	Common pip	Soprano pip	Serotine	Not speciated	Grand Total
20:37								2			2
20:41	3							1			1
20:42								1			1
20:43								1			1
20:45								1			1
20:48					2		3	4			9
20:49							1				1
20:50								2			2
20:51	4						1	4			5
20:52							3	4			7
20:53								1			1
20:54								1			1
20:55								4			4
20:56							2	3			5
20:57							2				2
20:58								4			4

Table B3 (continued) **Anabat recordings 16/08/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software))**

Time	Transect pt	Brown long eared	Leislers	*Myotis sp*	Noctule	Pip social calls	Common pip	Soprano pip	Serotine	Not Speciated	Grand Total
20:59							1	5			6
21:01	5							1			1
21:02								3			3
21:03							1	2			3
21:04							1	1		1	3
21:05	6							1			1
21:06								3			3
21:11								1			1
21:34							1				1
21:35										1	1
21:36							2	1			3
21:37							3	2			5
21:38								2			2
21:39								1			1
21:40							2	4			6
21:41							3	2			5
21:42							4	3			7
21:43							3	3			6
21:44		1					5	2			8

Table B3 (continued) **Anabat Recordings 16/08/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)**

Time	Transect pt	Brown long eared	Leislers	*Myotis sp*	Noctule	Pip social calls	Common pip	Soprano pip	Serotine	Not Speciated	Grand Total
21:45							3	2			5
21:46								1			1
21:47							3	4			7
21:48	8						3	2			5
21:49							2	3			5
21:50	9		1			1	2	3			7
21:51							1	3		1	5
21:52							2	1			3
21:53				1			1	1			3
21:54							1				1
21:55							2				2
21:56							1				1
21:57							2				2
21:58							2				2
22:00	10						1				1
22:05							2				2
22:06	11							1			1
22:12							2				2
22:18	12							4			4

Table B3 (continued) **Anabat Recordings 16/08/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)**

Time	Transect pt	Brown long eared	Leislers	*Myotis sp*	Noctule	Pip social calls	Common pip	Soprano pip	Serotine	Not Speciated	Grand Total
22:19								2			2
22:20								2			2
22:21						1		1			2
22:22						2					2
22:23								5			5
22:28							1				1
22:29	13						1				1
22:31									1		1
22:34									1		1
22:35	14						1		1		2
22:39						2	1	1			4
22:40						1		1			2
22:41	15							3			3
22:46							1				1
22:48									1		1
22:51	16						1				1
Grand Total		**1**	**1**	**1**	**2**	**7**	**74**	**110**	**4**	**3**	**203**

Table B4 Duet Recordings of Bat Passes 28/08/2007 (Bat Passes per Species Analysed Using Batsound Software)

For location of transect point referred to in table see **Figure 6**.

28aug07 (All)

Sizewell transect

Time	Transect pt	Barbastelle	*Myotis* sp	Noctule	Pip social calls	Common pip	Soprano pip	Serotine	Not Speciated	Whiskered	Grand Total
19.59	1						1				1
20.00							1				1
20.07	2					1	1				2
20.08						1	2				3
20.09						1	1				2
20.11						3	1				4
20.13						2	2				4
20.14						3					3
20:15					1	3					4
20:16	3						1				1
20:17						2					2
20:22							5				5
20:24							2				2
20:25							4				4
20:26	4						3				3
20:30							1				1
20:31						1	1				2

Table B4 (Continued) **Duet Recordings of Bat Passes 28/08/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Time	Transect pt	Barbastelle	*Myotis* sp	Noctule	Pip social calls	Common pip	Soprano pip	Serotine	Not Speciated	Whiskered	Grand Total
20:32						1					1
20:33		1				3	1				5
20:34							2		1		3
20:35						1					1
20:38						2	1				3
20:39						1					1
20:40						3					3
20:41	5					1					1
20:42		1									1
20:43		1									1
20:46						1					1
20:47						4	2				6
20:48						1	2				3
20:49					1		2				3
20:50						2	2				4
20:51						1	1		1		3
20:52						1	2				3
20:53							1				1
20:54						1					1

Table B4 (Continued) **Duet Recordings of Bat Passes 28/08/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Time	Transect pt	Barbastelle	*Myotis* sp	Noctule	Pip social calls	Common pip	Soprano pip	Serotine	Not Speciated	Whiskered	Grand Total
20:55	6					1	1				2
20:56				1		1	3				5
20:57						1	1				2
20:58						4	2				6
20:59							1				1
21:01						3	1				4
21:02	7						2				2
21:38							2				2
21:39							2				2
21:42						1					1
21:43						3	1				4
21:44						1	4				5
21:45						1					1
21:46							1				1
21:47							2				2
21:48					1						1
21:49						3					3
21:50						4	1				5
21:51						4	4				8
21:52	10						1	2			3

Table B4 (Continued) **Duet Recordings of Bat Passes 28/08/2007 (Bat Passes per Species Analysed Using Batsound Software)**

Time	Transect pt	Barbastelle	*Myotis* sp	Noctule	Pip social calls	Common pip	Soprano pip	Serotine	Not Speciated	Whiskered	Grand Total
21:53							1	2			3
21:54								2			2
21:55						1		1			2
21:56						1					1
21:57						1					1
21:58						1					1
21:59								1			1
22:01	11					2					2
22:04					1						1
22:11			1							1	2
22:31	12					1					1
22:38	13						1				1
22:41					1						1
22:43						1					1
22:48					2						2
22:49	14				1						1
22:53						1	1				2
Grand Total		**3**	**1**	**1**	**8**	**76**	**74**	**8**	**2**	**1**	**174**

Table B5 Anabat Recordings 12/09/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)

For location of transect point referred to in table see **Figure 7**.

Time	Transect pt	*Myotis* sp	Noctule	pip.social calls	Common Pipistrelle	Soprano Pipistrelle	Serotine	Not Speciated	Grand Total
19:32						1			1
19:36	1					1			1
19:40					1	1			2
19:42						1			1
19:43						2			2
19:44						4			4
19:45	2					1			1
19:55	3		1						1
20:00						1			1
20:01					2				2
20:06					2				2
20:07					1	1			2
20:08	4				1	1			2
20:14						1			1
20:15		1			1	1			3
20:16						1			1
20:17	5					2			2
20:23						1			1
20:24	6		1				1		2
20:25						1	1		2

Table B5 (continued) **Anabat Recordings 12/09/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)**

Time	Transect pt	*Myotis* sp	Noctule	pip.social calls	Common Pipistrelle	Soprano Pipistrelle	Serotine	Not Speciated	Grand Total
20:28					2	1			3
20:29				2	4	3			9
20:30				2	4	4			10
20:31	7			2	3	4			9
20:32					1	4		1	6
20:33						2			2
20:34						1			1
20:35	8				1	1			2
20:38					1	1			2
20:41			1						1
20:43						1			1
20:46				1		1			2
20:48	9					1			1
20:50						1	1		2
20:51					1				1
20:53						2			2
20:55	10					1			1
21:02					1				1
21:03					1	1			2
21:06	11				1				1
21:07					1				1

Table B5 (continued) **Anabat Recordings 12/09/2007 (Presented as Sound Files Containing Bat Species and Analysed Using Analook Software)**

Time	Transect pt	*Myotis* sp	Noctule	pip.social calls	Common Pipistrelle	Soprano Pipistrelle	Serotine	Not Speciated	Grand Total
21:08					1				1
21:11					1				1
21:12	12						1		1
21:13					2	1	1		4
21:14				1	2	3	1		7
21:15					2				2
21:16				1	2	2			5
21:17					1				1
21:18					2				2
21:19							1		1
21:20					1				1
Grand Total		**1**	**3**	**9**	**43**	**56**	**7**	**1**	**120**

Appendix C: Anabat Analysis Spreadsheets from 10 Static Overnight Anabats

40 Pages

See **Figures 3-7** for location of Anabats

Table C1 Location A (Dunwich Forest) 07/06 & 08/06 2007

Time	Common Pipistrelle	Soprano Pipistrelle	Unknown	Grand Total
21:17	1			1
21:23		1		1
21:27		1		1
21:28		1		1
21:31		1		1
23:33	1			1
23:37		1		1
23:38		1		1
23:41		1		1
23:46		1		1
00:32		3		3
00:38	1			1
01:44	1			1
02:46		1		1
03:02		1		1
04:00		1		1
04:07		1		1
04:15		1		1
04:16		5		5
04:17	1	1		2
04:34		1		1
05:03			1	1
Grand Total	**5**	**23**	**1**	**29**

Table C2 Location B (Shelter Belt North of Sizewell B) 07/06 & 08/06 2007

Shelter belt north of Sizewell B

Time	Common Pipistrelle	Grand Total
22:03	1	1
22:12	1	1
23:01	1	1
Grand Total	**3**	**3**

Table C3 Location C (The North-South Tree Line East of Hilltop Covert) 06/07/2007

Time	Not speciated	Common Pipistrelle	Common & Soprano Pipistrelle	Soprano Pipistrelle	Grand Total
21:47		1			1
21:48		1	1		2
21:49			1	3	4
21:50			1	2	3
21:51				6	6
21:52				1	1
21:58		1			1
21:59		1			1
22:00				1	1
22:01		1			1
22:02		4			4
22:03		3			3
22:04		3			3
22:05		4	1		5
22:06	1			3	4
22:07				3	3
22:08	1				1
22:10				3	3
22:11				2	2
22:12	1	1			2
22:13	1			3	4
22:14		1			1
22:15				1	1
22:17	1			3	4
22:18			1		1
22:19				2	2
22:20				2	2
22:21				3	3
22:22				1	1

Table C3 (continued) **Location C (The North-South Tree Line East of Hilltop Covert) 06/07/2007**

Time	Not speciated	Common Pipistrelle	Common & Soprano Pipistrelle	Soprano Pipistrelle	Grand Total
22:23				4	4
22:24				4	4
22:25		1			1
22:26		2			2
22:27		4			4
22:28		5			5
22:29		5			5
22:30		4			4
22:31		4			4
22:32		5			5
22:33		6			6
22:34		5			5
22:35		4			4
22:36		5			5
22:37		3			3
22:39		3			3
22:40		3			3
22:41				4	4
22:42				3	3
22:45				1	1
22:46				2	2
22:47				2	2
22:48				1	1
22:49				4	4
22:50				1	1
22:51				4	4
22:52				2	2
22:53	1			1	2
22:54				3	3
22:55				3	3

Table C3 (continued) **Location C (The North-South Tree Line East of Hilltop Covert) 06/07/2007**

Time	Not speciated	Common Pipistrelle	Common & Soprano Pipistrelle	Soprano Pipistrelle	Grand Total
22:56	1			2	3
22:57				2	2
22:58				3	3
22:59		1		1	2
23:00		2			2
23:02		5			5
23:03		3			3
23:04		4			4
23:05		4			4
23:13		2			2
23:14		1			1
23:16		4			4
23:24				6	6
23:25				3	3
23:26				6	6
23:27				1	1
23:28				6	6
23:29				5	5
23:30				3	3
23:31				3	3
23:32				5	5
23:35				4	4
23:36				6	6
23:37				7	7
23:38				4	4
23:39				6	6
23:40				4	4
23:41				5	5
23:42				4	4
23:43				4	4

Table C3 (continued) **Location C (The North-South Tree Line East of Hilltop Covert) 06/07/2007**

Time	Not speciated	Common Pipistrelle	Common & Soprano Pipistrelle	Soprano Pipistrelle	Grand Total
23:44				6	6
23:45				5	5
23:46				3	3
23:47				7	7
23:48				5	5
23:49				5	5
23:50				3	3
23:51				4	4
23:52				5	5
23:57		2			2
00:22	5				5
00:23	1				1
00:24	2				2
00:38				1	1
00:41	1				1
00:43	2				2
Grand Total	**18**	**108**	**5**	**212**	**343**

Table C4 Location D (Southern Edge of Goose Hill) 06/07/2007

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	Grand Total
20:06		1								1
20:26		1								1
20:51		3								3
21:03		1								1
21:06		2								2
21:09		1								1
21:11		1								1
21:15		1								1
21:18		1					1			2
21:23		1								1
21:25		1								1
21:27		4								4
21:41							1			1
21:42							4		1	5
21:43							4		1	5
21:44							3		1	4

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
21:45							5			5
21:46							3			3
21:48							4			4
21:49							1			1
21:51							3			3
21:52							2			2
21:53							5			5
21:54							6			6
21:55							5			5
21:56							1			1
21:57							1			1
21:58							1			1
21:59							1			1
22:00							2			2
22:01							3			3
22:02				1			2			3
22:03				1	1					2

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
22:04				5						5
22:05				2	1					3
22:06				3			1			4
22:07				2			1			3
22:08				1						1
22:09				4			1			5
22:10				3						3
22:12				3						3
22:13				1			1			2
22:14				2						2
22:15				2						2
22:16				1						1
22:17				1	2		1			4
22:18				2			1			3
22:19					1		3			4
22:20							1			1
22:21				2	1					3

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
22:22							2			2
22:23				1						1
22:24							3			3
22:25			1	3				1		5
22:26			1				3			4
22:27							2			2
22:28							4			4
22:29				1			1			2
22:30			1	1			3			5
22:31				1			2			3
22:32				1						1
22:33				2						2
22:34				3		1				4
22:35				1			1			2
22:36				1						1
22:37							1			1
22:38				1					1	2

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
22:39				1			2			3
22:40					1		1			2
22:41				1			1			2
22:42				3			1			4
22:43				5			1			6
22:44							2			2
22:45							1			1
22:46							2			2
22:47							1			1
22:48							3			3
22:49				1					1	2
22:50				1						1
22:51							3			3
22:52							4			4
22:53							2			2
22:54		1					1			2
22:55	1						1			2

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
22:56				1			4			5
22:57				1			1			2
22:58					1		1			2
22:59				2	1		1			4
23:00		2					1			3
23:01				3						3
23:02				1			1			2
23:03					1		2			3
23:04				3	1					4
23:05				1			1			2
23:06				1			2			3
23:07				2			3			5
23:08				1			1			2
23:09				2						2
23:10				3			1			4
23:11				3						3
23:12				3			1			4

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
23:13				2			2			4
23:14				4						4
23:15				3						3
23:16				2			3			5
23:17				2			2			4
23:18				2			1			3
23:19				2	1					3
23:20				2			1			3
23:21		1		2			2			5
23:22				1			3			4
23:23				1			4			5
23:24				1			2			3
23:25				5						5
23:27							3			3
23:28							3			3
23:29							2			2

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
23:30				1			1			2
23:31				2						2
23:32				1			2			3
23:33				2	1		1			4
23:34				1			1	1		3
23:35				1			2			3
23:36							3			3
23:37							1			1
23:38				1			2			3
23:39				3			2			5
23:40				3						3
23:41				2			1			3
23:42				4			2			6
23:43				3	1		1			5
23:44							2			2
23:45							3			3

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
23:46							2			2
23:47							3			3
23:48							3			3
23:49							2			2
23:50							3			3
23:51							3			3
23:52							3			3
23:53							2			2
23:54				1			4			5
23:55							2			2
23:56							3			3
23:57		2	2							4
23:58							4			4
23:59							2			2
00:15				1						1
00:16		1								1

Table C4 (continued) **Location D (Southern Edge of Goose Hill) 06/07/2007**

Time	Myotis	Not Speciated	Noctule	Common Pipistrelle	Common & Soprano Pipistrelle	Serotine	Soprano Piipstrelle	Soprano Pipistrelle and Serotine	Pipistrelle spp.	*Grand Total*
00:18				1						1
00:19				1						1
00:20		1		3						4
00:21		1					1			2
00:22		2					1			3
00:23		2					1			3
00:37		2								2
00:38		1								1
00:43		1								1
00:45		1								1
Grand Total	**1**	**36**	**5**	**151**	**14**	**1**	**227**	**2**	**5**	**442**

Table C5 Location E (Near Turf Pits [opposite gate into marsh]) 16/08/2007

Time	Noctule	Common Pipistrelle	Soprano Pipistrelle	Not Speciated	Grand Total
20:14	1				1
20:16			1		1
20:17			1		1
20:23			1		1
20:24			1	1	2
20:29		2	3		5
20:33		1			1
20:36				1	1
20:38			1		1
20:39			5		5
20:40			1		1
20:41			2		2
20:42			1		1
20:43			3	1	4
20:44		1	1	1	3
20:45			3		3
20:46			3	1	4
20:47			1		1
20:48			2		2
20:49			3		3
20:50			3		3
20:54			2		2
20:55			1		1
20:56			1		1
20:59			1		1
21:02		1	1		2
21:08		2			2
21:09			1		1
21:14		1			1
21:19				1	1

Table C5 (continued) **Location E (Near Turf Pits [Opposite Gate into Marsh]) 16/08/2007**

Time	Noctule	Common Pipistrelle	Soprano Pipistrelle	Not Speciated	Grand Total
21:25		1			1
21:26		1			1
21:28				1	1
21:29			1		1
21:30			1		1
21:32			1		1
21:38			1		1
21:40			3		3
21:41		1	2		3
21:47			1		1
21:51			1		1
21:52		1			1
21:54		1			1
21:56		1			1
21:57		2			2
21:59		2			2
22:02			1		1
22:03			1		1
22:04			2		2
22:05		2			2
22:06		1			1
22:07		2			2
22:08			1		1
22:10			1		1
22:14			1		1
22:15			1		1
22:16			1		1
22:17			1		1
22:18			1		1
22:21		1			1

Table C5 (continued) **Location E (Near Turf Pits [Opposite Gate into Marsh]) 16/08/2007**

Time	Noctule	Common Pipistrelle	Soprano Pipistrelle	Not Speciated	Grand Total
22:22			3		3
22:23			1		1
22:24			1		1
22:26			1		1
22:28			1		1
22:29			1		1
22:30			3		3
22:31			1		1
22:32			3		3
22:33			1		1
22:34			1		1
22:35			2		2
22:36			1		1
22:37			3		3
22:38			3		3
22:40			3		3
22:42			1		1
22:47			1		1
22:52			2		2
22:53			1		1
22:55			1		1
22:56			1		1
23:07			1		1
23:08			1		1
23:09			1		1
23:10			2		2
23:11			1		1
23:12			2		2
23:13			1		1
23:14			2		2

Table C5 (continued) **Location E (Near Turf Pits [Opposite Gate into Marsh]) 16/08/2007**

Time	Noctule	Common Pipistrelle	Soprano Pipistrelle	Not Speciated	Grand Total
23:15			3		3
23:16			3		3
23:17				1	1
23:18			1		1
23:19			2		2
23:24			1	1	2
23:25			1		1
23:26			2		2
23:27			2		2
23:28			2		2
23:29			1		1
23:30			4		4
23:31			2		2
23:35			2		2
23:36			2		2
23:37			2		2
23:38			1		1
23:44			2		2
23:45			1		1
23:46			1		1
23:47			2		2
23:49			2		2
23:50			3		3
23:51			1		1
00:03			1		1
00:07				1	1
00:08			1		1
00:09			1		1
00:10			1		1
00:19				1	1

Table C5 (continued) **Location E (Near Turf Pits [Opposite Gate into Marsh]) 16/08/2007**

Time	Noctule	Common Pipistrelle	Soprano Pipistrelle	Not Speciated	Grand Total
00:20			1		1
00:38			1		1
00:49			1		1
00:50			3		3
05:02			1		1
05:10			1		1
05:14			1		1
05:15			3		3
Grand Total	**1**	**24**	**171**	**11**	**207**

Table C6 (continued) **Location F (Leiston Carr [Hazel Tree]) 16/08/2007**

Time	Barbastelle	Common Pipistrelle	Soprano Pipistrelle	Serotine	Not Speciated	Grand Total
20:22			1			1
20:25			1			1
20:27			1			1
20:34			1			1
20:35			1			1
20:40		1				1
20:45		1				1
20:55		1				1
21:00		2				2
21:08		1				1
21:10		1				1
21:13		1		1		2
21:13		3				3
21:15		1				1
21:16		2				2
21:18		1				1
21:23				1		1
21:31				1	1	2
21:34	1					1
21:34	1	1				2
21:35		1				1
21:36					1	1
21:36	1				1	2
21:39	1				1	2
21:40			1			1
21:44	1					1
21:44	2		1			3
21:45		1		1	1	3
21:45	1				1	2
21:48					1	1

Table C6 (continued) **Location F (Leiston Carr [Hazel Tree]) 16/08/2007**

Time	Barbastelle	Common Pipistrelle	Soprano Pipistrelle	Serotine	Not Speciated	Grand Total
21:49		2				2
21:51		1				1
21:51		1				1
21:52		1	1			2
21:52					1	1
21:52					2	2
21:53		2	1		2	5
21:53					1	1
21:54					1	1
21:59	1					1
22:00		1				1
22:02	1					1
22:04					1	1
22:04					1	1
22:05					1	1
22:06		1		1		2
22:07		3				3
22:07					1	1
22:07		1				1
22:08		1				1
22:09				1		1
22:10				1		1
22:11					1	1
22:12					1	1
22:13	1					1
22:14			1			1
22:18		1				1
22:20		1				1
22:20		1				1
22:23		1				1

Table C6 (continued) **Location F (Leiston Carr [Hazel Tree]) 16/08/2007**

Time	Barbastelle	Common Pipistrelle	Soprano Pipistrelle	Serotine	Not Speciated	Grand Total
22:25		1				1
22:26		1				1
22:27			1			1
22:28		1				1
22:31		1				1
22:33		1				1
22:36			1			1
22:37			1			1
22:47			1			1
02:04			1			1
02:12		1				1
02:17			1			1
02:22			1			1
Grand Total	**11**	**42**	**17**	**7**	**20**	**97**

Table C6 Location G (North-Eastern Edge of Plantation) 28/08/2007

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
20:19				2	4		6
20:20				1	3		4
20:21					4		4
20:22				4	4		8
20:23				4	5		9
20:24				4	4		8
20:25				3	3		6
20:26				3	4		7
20:27				4	4		8
20:28				3	4		7
20:29					4		4
20:30				4	4		8
20:31				2	3		5
20:32				3	4		7
20:33				4	4		8
20:34				2	4		6
20:35				4	5		9
20:36					3		3
20:37				2	4		6
20:38					4		4
20:39					3		3
20:40				1	3		4
20:41					4		4
20:42					1		1
20:43					1		1
20:44					2		2
20:45				1	2		3
20:46				1			1
20:47				1	1		2
20:48				1			1

Table C6 (continued) **Location G (North-Eastern Edge of Plantation) 28/08/2007**

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
20:49				2			2
20:50				1	3	1	5
20:51				1			*1*
20:54				1	1		*2*
20:55					1		*1*
20:56					1		*1*
20:57				1			*1*
20:58				1			*1*
20:59					1		*1*
21:02				1	1		*2*
21:03					1		*1*
21:04					1		*1*
21:06					2		*2*
21:07				1			*1*
21:08		1			1		*2*
21:09				3			*3*
21:11				1	1		*2*
21:12				4			*4*
21:13		1		3			*4*
21:14				3			*3*
21:15				3	1		*4*
21:21				1			*1*
21:22					1		*1*
21:24				1			*1*
21:25				2	1		*3*
21:26					2		*2*
21:27	1			2	1		*4*
21:28				1			*1*
21:29		1			1		*2*
21:30				1			1

Table C6 (continued) **Location G (North-Eastern Edge of Plantation) 28/08/2007**

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
21:31				2			*2*
21:32				1	1		2
21:33				1			1
21:34				3			3
21:37					2		2
21:38				*1*	*1*		2
21:39					1		1
21:41				1			1
21:42				1			1
21:43				1			1
21:45				1			1
21:47					1		1
21:48				2	2		4
21:53		1		1	1		3
21:55				1			1
21:56				1			1
21:59				1			1
22:00				1			1
22:02		1			1		2
22:03				1			1
22:04				1			1
22:05					2		2
22:06					2		2
22:07		2			2		4
22:08		2			3		5
22:09					2		2
22:10					1		1
22:11					2		2
22:12		1			1		2
22:14		2		1	2		5

Table C6 (continued) **Location G (North-Eastern Edge of Plantation) 28/08/2007**

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
22:15		1		2			3
22:16				1	1		2
22:21					1		1
22:22					1		1
22:23		1			1		2
22:24		1			1		2
22:25				1			1
22:26					1		1
22:28					1		1
22:29				1	1		2
22:32		1		2			3
22:33				1			1
22:35				1	1		2
22:36		1			1		2
22:37				1	1		2
22:39					1		1
22:40		1			1		2
22:41		1			1		2
22:45				1			1
22:49				1			1
22:50				3		1	4
22:51				2			2
22:56				1			1
23:04				2			2
23:06				2	1		3
23:08					1		1
23:09				2	1		3
23:10					1		1
23:11				1			1
23:13				1			1

Table C6 (continued) **Location G (North-Eastern Edge of Plantation) 28/08/2007**

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
23:14					1		1
23:16				1	1		2
23:17				1			1
23:18				2			2
23:19				3			3
23:20				3			3
23:21				4			4
23:22				1			1
23:23				2			2
23:24				2			2
23:25				2			2
23:27				1			1
23:28				2			2
23:30				1			1
23:32			1	2	1		4
23:34					1		1
23:35					2		2
23:36		1		2	3	1	7
23:37				2	1		3
23:38				3	1		4
23:39		1		3	1		5
23:40				1			1
23:41				3			3
23:43				4			4
23:44				2			2
23:45				1			1
23:46				2			2
23:47				3			3
23:48				2			2
23:49					1		1

Table C6 (continued) **Location G (North-Eastern Edge of Plantation) 28/08/2007**

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
23:50				2			2
23:52					2		2
23:53				1			1
23:54				1			1
23:56				1			1
23:57				2			2
23:59				1			1
00:00				1			1
00:01				2			2
00:03				1			1
00:04				1			1
00:05				1			1
00:06					1		1
00:07		1			1		2
00:18				1			1
00:19					1		1
00:20				2			2
00:23				1			1
00:24				1			1
00:25				2			2
00:26					3		3
00:27				1	1		2
00:28					1		1
00:29					1		1
00:30				2			2
00:31					1		1
00:32					1		1
00:33					1		1
00:34				2	2		4
00:35				1			1

Table C6 (continued) **Location G (North-Eastern Edge of Plantation) 28/08/2007**

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
00:36				3			3
00:40					3		3
00:41					3		3
00:42		1			4		5
00:43					4		4
00:44					4		4
00:45					2		2
00:46					2		2
00:50					1		1
00:51				2			2
00:52				1			1
00:53					1		1
00:54				2			2
00:55					1		1
00:56				1			1
00:57				1	1		2
00:59					1		1
01:00		1			1		2
01:01		1			1		2
01:02					1		1
01:03					1		1
01:05		1		1	1		3
01:06				2			2
01:07				2	1		3
01:08				3	1	1	5
01:09				2			2
01:10		1		2	1		4
01:11		1		2			3
01:12				1			1
01:13				2	1		3

Table C6 (continued) **Location G (North-Eastern Edge of Plantation) 28/08/2007**

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
01:14					2		2
01:15				2			2
01:16				2	2		4
01:17		1			1		2
01:19		1			1		2
01:20		1		2			3
01:21		1		1	2		4
01:23				2	1		3
01:24					1		1
01:25				1	1		2
01:26				1	1		2
01:28					2		2
01:29				1	1		2
01:30					1		1
01:31				2			2
01:33				1	1		2
01:35				1			1
01:36		1			1		2
01:43				1			1
01:45				1			1
01:58					1		1
02:00		1			2		3
04:39					1		1
05:04					1		1
05:11					1		1
05:12					1		1
05:14					1		1
05:16					1		1
05:18					1		1
05:19					1		1

Table C6 (continued) **Location G (North-Eastern Edge of Plantation) 28/08/2007**

Time	Barbastelle	Noctule	Pipistrelle spp.	Common pipistrelle	Soprano pipistrelle	Not Speciated	Grand Total
05:20					2		2
05:21					1		1
05:23					1		1
05:24					2		2
05:28					1		1
05:32					1		1
05:33					2		2
05:34					1		1
05:35					2		2
05:36					1		2
05:37					2		2
Grand Total	**1**	**34**	**1**	**263**	**271**	**5**	**575**

Table C8 **Location H (Southern edge of Nursery Covert [Facing South Towards Grimseys]) 28/08/2007**

Time	Long-eared	Common Pipistrelle	Soprano Pipistrelle	Query	Grand Total
20:03			2		2
20:04			2		2
20:05			1		1
20:08			1		1
20:16			1		1
20:18		1			1
20:23		1	2		3
20:26			1		1
20:27			1		1
20:28			1		1
20:35		1			1
20:37		1			1
20:45		2			2
20:47		1			1
20:48		1			1
20:51		1			1
20:52		1			1
20:53		1			1
20:54		1			1
21:03				1	1
21:09		1			1
21:10		1			1
21:11		2			2
21:13		1			1
21:20		1			1
21:22			1		1
21:29		1			1
21:30		2	1		3
21:31		2	1		3

Table C8 (Continued) **Location H (Southern edge of Nursery Covert [Facing South Towards Grimseys]) 28/08/2007**

Time	Long-eared	Common Pipistrelle	Soprano Pipistrelle	Query	Grand Total
21:32		1	1		2
21:33		1			1
21:34		1			1
21:37		1			1
21:38		1			1
21:50			1		1
21:55			1		1
22:02			1		1
22:08			1		1
22:20			1		1
22:21			1		1
22:22			1		1
22:27		1			1
22:28		1			1
22:44			1		1
22:45			1		1
23:26			1		1
23:35			1		1
23:54			1		1
00:12			1		1
00:22			1		1
00:46	1	1			2
04:50			1		1
05:48			3		3
Grand Total	**1**	**31**	**34**	**1**	**67**

Location I (South-western edge of Kenton Hills [near pond on Sizewell Belts Trail]) 12/09/2007

No bat encounters

Table C9 Location J (Western Edge of Grazing Marsh) 12/09/2007

Time	Noctule	Pipistrelle social calls	Common pipistrelle	Soprano pipistrelle	Grand Total
19:43				1	1
19:47				3	3
19:57				1	1
20:32				1	1
20:42				2	2
20:43				3	3
20:44				1	1
20:45				1	1
20:46		1		5	6
20:47				5	5
20:48				5	5
20:49				4	4
20:50				3	3
20:51				3	3
20:52				5	5
20:53				6	6
20:54				3	3
20:55				3	3
20:56				3	3
20:57				4	4
20:58				3	3
20:59				4	4
21:00				3	3
21:01				3	3
21:02			1	2	3
21:03			1	6	7

Table C9 (continued) **Location J (Western Edge of Grazing Marsh) 12/09/2007**

Time	Noctule	Pipistrelle social calls	Common pipistrelle	Soprano pipistrelle	Grand Total
21:04				3	3
21:05				3	3
21:06				2	2
21:07			1	4	5
21:08				2	2
21:09				2	2
21:10				5	5
21:11				4	4
21:12				3	3
21:13	1			2	3
21:14				4	4
21:15			1	5	6
21:16				5	5
21:17				3	3
21:18				4	4
21:19				2	2
21:20				5	5
21:21				3	3
21:22				6	6
21:23				2	2
21:24				4	4
21:25				5	5
21:26				4	4
21:27			1	4	5
21:28			2	3	5
21:29				2	2
21:30				4	4
21:31			1	4	5
21:32				4	4
21:33				3	3

Table C9 (continued) **Location J (Western Edge of Grazing Marsh) 12/09/2007**

Time	Noctule	Pipistrelle social calls	Common pipistrelle	Soprano pipistrelle	Grand Total
21:34				4	4
21:35				4	4
21:36			1	2	3
21:37				6	6
21:38				4	4
21:39				6	6
21:40				5	5
21:41				5	5
21:42				5	5
21:43			1	3	4
21:44			1	2	3
21:45				3	3
21:46				4	4
21:47				5	5
21:48				5	5
21:49				4	4
21:50		1		4	5
21:51				3	3
21:52				5	5
21:53				3	3
21:54				5	5
21:55				4	4
21:56				3	3
21:57				4	4
21:58			1	4	5
21:59			1	4	5
22:00				2	2
22:01				3	3
22:02				5	5
22:03				1	1

Table C9 (continued) **Location J (Western Edge of Grazing Marsh) 12/09/2007**

Time	Noctule	Pipistrelle social calls	Common pipistrelle	Soprano pipistrelle	Grand Total
22:04				3	3
22:05				4	4
22:06				3	3
22:09				2	2
22:10				1	1
22:11				4	4
22:12				4	4
22:13				3	3
22:14				2	2
22:15				3	3
22:16				3	3
22:17				2	2
22:37				1	1
22:38				1	1
23:12				1	1
23:13				2	2
00:20				1	1
00:25				1	1
Grand Total	**1**	**2**	**13**	**347**	**363**