

ERM

Chiltern Line Wolvercot Tunnel Summer Bat Emergence/Dawn Re-entry Survey

August 2010



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August 2010

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Keystone Environmental
Practical Ecological Solutions

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Drawing Number: 9761/14/2/wor1 Bat Emergence Map

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1.0 Introduction

Background

- 1.1 ERM has produced a Nature Conservation chapter for an Environmental Statement on behalf of Chiltern Railways (CRCL) to assess the upgrade Scheme for the existing railway between Bicester and Oxford.
- 1.2 During a preliminary assessment of the Scheme (Keystone Environmental, 2009) several structures within the proposed Scheme boundary were assessed as having potential for roosting, commuting and foraging bats, therefore the following bat surveys were carried out:
- Emergence surveys in August and September 2009 (Keystone Environmental, 2009)
 - Mist net and additional detector surveys in autumn 2009 (Keystone Environmental, 2009)
 - Hibernation survey between December 2009 and February 2010 (Keystone Environmental, 2010a)
 - Spring swarming surveys in April 2010 (Keystone Environmental, 2010b)
- 1.3 During these surveys, 13 tunnel features were confirmed as hibernation/transitional roost sites for bats. However, due to the time of year the surveys were conducted it was not possible to rule out use of features within the tunnel as summer roost sites. Consequently, surveys during summer 2010 were recommended and ERM instructed Keystone Environmental to undertake these.
- 1.4 To date, hibernation and swarming sites for small numbers of common or rarer *Myotis* species have been valued at moderate conservation status (Mitchell-Jones, 2004) and of at least County Importance (Keystone Environmental, 2009 & 2010a and b). Foraging and commuting activity recorded during previous surveys has been deemed of Local Importance only (Keystone Environmental, 2009 & 2010a and b).

Aims and Objectives

- 1.5 The objective of the survey was to gain additional information to inform the Bat Mitigation Plan with the specific aim of establishing whether tunnel features are used by bats as summer roost sites.

Site Characteristics

- 1.6 The Chiltern line runs north of Oxford and stretches from Oxford station to Bicester Junction, approximately 20 kilometres to the north-east. Wolvercot tunnel is a 150 metre long structure on the northern side of Oxford situated beneath the Wolvercot Roundabout, the junction of the A40, the A44 and the A4144 (Grid Reference SP 497102).
- 1.7 The tunnel is brick built, with areas of larger stonework in places. Some movement of the bridge has occurred, with a number of cracks in the mortar across the tunnel, although some
-

of these have been repaired in the past. The bridge was originally constructed to accommodate 2 rail tracks, but there is presently just 1 down the centre. Trains are currently limited to 30 miles per hour through the tunnel. At both the north and south ends of the tunnel the track lies within a short cutting.

Legislation and Policy

- 1.8 As all species of bat are listed on Schedule 5 of The Wildlife and Countryside Act (1981), they receive protection under Section 9 of this Act. This has been amended several times, most recently by the Countryside and Rights of Way Act 2000, which added 'or recklessly' to Section 9(4) (a) and (b). In summary, it is a criminal offence to:
- intentionally kill, injure or take a wild bat
 - be in possession of, or control, any live or dead wild bat or part of, or anything derived from a wild bat
 - intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection
 - intentionally or recklessly disturb any wild bat whilst it is occupying a structure or place that it uses for shelter or protection
 - transport for sale or exchange, or offer for sale or exchange a live or dead bat or any part of a bat.
- 1.9 All species of bat are also listed in Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations (known as the Habitats Regulations) and as such receive protection under Regulation 41 of these Regulations which make it an offence to:
- deliberately capture or kill a bat
 - deliberately disturb a bat
 - damage or destroy a breeding site or resting place of a bat
 - keep, transport, sell or exchange, or offer for sale or exchange a live or dead bat or any part of a bat.
- 1.10 Under the 2010 Regulations, disturbance of bats includes any disturbance which is likely to:
- impair their ability to survive, breed or reproduce, or to rear or nurture their young or to hibernate or migrate
 - significantly affect the local distribution or abundance of the species in question
- 1.11 It is no longer a defence to show that the killing, capture or disturbance of a species covered by the Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of a lawful activity.
- 1.12 EPS licences can be granted in respect of development to permit activities that would otherwise be unlawful under European legislation.
- 1.13 Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation (ODPM, 2005) states that:

'The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity and geological interests which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.'

- 1.14 Under PPS9 the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.
- 1.15 Under Section 40 of the Natural Environment and Rural Communities Act (2006) public bodies, including Local and Regional Planning Authorities have a duty to 'have regard' for the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England. This is known as The England Biodiversity List and details 941 species, all of which make up the UK BAP Priority Species. Regional Planning Bodies and Local Planning Authorities will use it to identify the species that should be afforded priority when applying the requirements of PPS9 to maintain, restore and enhance species and habitats.
- 1.16 Seven bat species are UK BAP (2007) Priority Species. These are:
- Barbastelle
 - Bechstein's
 - Noctule
 - Soprano Pipistrelle
 - Brown Long-eared
 - Greater Horseshoe
 - Lesser Horseshoe
- 1.17 There is no specific Species Action Plan (SAP) for bats in the Oxfordshire Biodiversity Action Plan, but bats are listed as Priority Species within the Woodland Habitat Action Plan (HAP). Within the Woodland HAP there are no specific actions in relation to bats (TVERC, 2007).

2.0 Methodology

Visual Inspections of Tunnel Features

- 2.1 Potential and confirmed roost features identified during surveys undertaken to date were inspected visually by a licensed bat surveyor (Natural England 20093994) on 8th July at dusk, 9th July at 03.20 and 05.00 (prior to and at dawn), and 10th August at dusk. The surveyor looked for bat presence with the aid of a torch from the ground (the majority of bat roosting features were visible from the ground).
- 2.2 In addition, on the 9th August 2010 the licensed bat surveyor (Natural England 20093994) carried out an additional inspection whereby potential and confirmed roost features were inspected using a ladder and high-powered torch. This enabled better visual access to those features on the side walls.

Dusk Emergence/Dawn Re-entry Survey

- 2.3 Following instructions from ERM, 2 dusk emergence surveys were undertaken on the 8th and 10th August 2010 and 1 dawn re-entry survey on the 9th July 2010 (within the same 24 hour period as the first dusk emergence). Weather conditions encountered during the survey are presented in *Appendix 1*.
- 2.4 The surveys were conducted by a licensed bat surveyor (Natural England 20093994) and an ecologist experienced in bat detector surveys. Surveyors were stationed at either end of the tunnel. Dusk surveys commenced a ½ hour before sunset and ceased 2 hours after sunset. The dawn surveys commenced 1½ hours before sunrise and ceased just after sunrise.
- 2.5 The surveyors were equipped with Stag Electronics Duet bat detectors used in combined frequency division and heterodyne mode. Registrations were recorded on MP3 recorders and notes were made on species, behaviour, time of registration, location and direction of flight where possible, including incidental observations of bats in surrounding habitats. Where it was not possible to identify a bat species on site, audio recordings were later analysed using BatSound Standard Sound Analysis Software (Version: 3.31, 2001, Pettersson Elektronik AB).

Evaluation

- 2.6 Roost features within the tunnel have been evaluated to assess which of the following categories they fall into (Mitchell-Jones, 2004):
- maternity site, where babies are born and raised to independence
 - summer roost, used by males and non-breeding females
- 2.7 Since surveyors were not stationed directly beneath potential or confirmed roost locations, the time that bats emerged from the tunnel following sunset and prior to sunrise was used in combination with visual inspections of confirmed/potential roost features to conclude presence/absence of summer bat roosts.

2.8 This information derived from the evaluation methods described above, combined with the conservation status of the species concerned, UK and Regional distribution, habitat preferences, availability of suitable habitat in the surrounding landscape, UK and Local BAP status and presence/status of roosts in the vicinity has been used to assign one of the following levels of geographical importance:

- International
- UK and National
- Regional
- County
- District
- Local or Parish

2.9 The value of the site to bats overall is taken to be the highest level of geographical importance assigned to a particular species recorded on site.

Limitations

2.10 The results of the survey and assessment work undertaken by Keystone Environmental are representative at the time of surveying.

2.11 Up to date standard methodologies will be used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site.

3.0 Survey Results and Evaluation

Visual Inspections of Tunnel Features

- 3.1 No bats were recorded in any previously identified bat roost features within the tunnel on any of the visits.

Dusk Emergence/Dawn Re-entry Survey

- 3.2 The results of the surveys are fully documented in *Appendix 2* and in *Drawing Number 9761/14/2/wor1* with information being summarised below.
- 3.3 At least 4 species of bats were identified during the 3 survey visits namely Common Pipistrelle, Soprano Pipistrelle, Noctule and *Myotis* species. All have been previously recorded at the tunnel.
- 3.4 Common Pipistrelle, Soprano Pipistrelle and *Myotis* species were recorded at the tunnel entrances within the typical roost emergence period for each species. This is summarised in Table 1 below for emergence data gained from 8th July and Table 2 for data gained from 10th August 2010.

Table1: Summary of Bat registrations per species within their typical emergence period (data from 8th July 2010)

Species	Typical Emergence Period*	Number of Registrations within Emergence Period
Common Pipistrelle	20-30 minutes after sunset	4
Soprano Pipistrelle	20-30 minutes after sunset	1
Myotis	30-60 minutes after sunset	1

*as sourced from Jones and Walsh (2001)

Table2: Summary of Bat registrations per species within their typical emergence period (data from 10th August 2010)

Species	Typical Emergence Period*	Number of Registrations within Emergence Period
Common Pipistrelle	20-30 minutes after sunset	5

*as sourced from Jones and Walsh (2001)

- 3.5 There was no clear correlation between the timing of recordings made by each surveyor stationed at either end of the tunnel that would suggest that the registrations illustrated in

Tables 1 and 2 came from bats simply commuting through the tunnel ie. bats recorded emerging from the tunnel were not recorded previously entering the tunnel at the other end. This would indicate that the registrations were not of bats commuting through the tunnel but may be roosting bats emerging from the tunnel.

- 3.6 Remaining registrations (not summarised in Tables 1 and 2) came from foraging and commuting bats of the species mentioned above. Full details of foraging and commuting bat registrations can be found in *Appendix 2*.

Evaluation

- 3.7 Although no bats were visually observed within previously identified tunnel roost features, bats were observed emerging from the tunnel and the timing of these registrations (compared with typical emergence period) indicate that Common Pipistrelle, Soprano Pipistrelle and *Myotis* could have been roosting within the tunnel (as opposed to commuting through it).
- 3.8 The number of registrations within the typical emergence period for each species is not indicative of significant maternity roosts. Instead, it is probable the tunnel supports summer roosts of males and non-breeding females in low numbers.
- 3.9 According to Mitchell-Jones (2004) roosts of small numbers of common species such as Common and Soprano Pipistrelle, Serotine and the more common *Myotis* species are of low conservation significance whilst summer roosts of small numbers of rarer species, such as the less common *Myotis* species, are of medium conservation significance. In terms of importance on a geographical scale this translates to Local/Parish and District respectively.
- 3.10 These findings do not alter the importance assigned to swarming roosts and foraging and commuting activity in previous reports (Keystone Environmental 2009, 2010a and b).

4.0 References

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Wildlife and Countryside Act 1981 (and amendments), (c.69), London: HMSO.

Plans



Key:

- Common Pipistrelle - Number of Registrations Displayed
- Myotis Sp. - Number of Registrations Displayed
- Soprano Pipistrelle - Number of Registrations Displayed
- Scheme boundary

Bat registration are combined where they display a similar direction of flight



Drn	Description	Rev	App
DI	Bat Survey	0	SB

The Chiltern Railways (Bicester to Oxford Improvements) Order Scheme

Drawing Title:
Bat Emergence Map

Client Name: ERM
Scale: 1:1,000 @ A3 Date: 27/08/10
Drawing Number: 99761/14/2/wor1



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Base map provided by xxx 2009. Reproduced by permission of Ordnance Survey, © on behalf of the Controller of Her Majesty's Stationary Office. © Crown Copyright 2009. All rights reserved. Reference 0107.
 The figure contains potentially sensitive information relating to the location of species protected by law. Therefore it should be regarded as confidential and not circulated beyond that which is necessary.

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Appendices

Appendix 1

Weather Conditions Encountered During the Surveys

Keystone Environmental Ltd

Chiltern Line, Oxford (Wolvercote Tunnel)

Bat Dusk Emergence and Dawn Re-entry Survey 2010

Weather Conditions

Date	Temp (°C)	Wind Speed	Cloud Cover (%)	Precipitation	Sunset/Sunrise
08/07/10	17	None	100	Showers	21:23
09/07/10	14	None	5	Dry	04:58
10/08/10	18	Light	80	Dry	20:38

Appendix 2

Survey Results

Keystone Environmental Ltd

Chiltern Line, Oxford (Wolvercote Tunnel)

Bat Dusk Emergence and Dawn Re-entry Survey 2010

Date	Time From	Time Until	Species	Number	Behaviour
08/07/2010	21:13	23:13	Common Pipistrelle	1	Commuting
08/07/2010	21:45	22:15	Common Pipistrelle	1	Foraging
08/07/2010	21:45	22:15	Soprano Pipistrelle	1	Foraging
08/07/2010	21:46	21:49	Common Pipistrelle	1	Foraging
08/07/2010	21:49	21:49	Common Pipistrelle	1	Commuting
08/07/2010	21:59	21:59	Myotis Sp.	1	Commuting
08/07/2010	22:02	22:02	Noctule	1	Commuting
08/07/2010	22:11	22:11	Common Pipistrelle	1	Commuting
08/07/2010	22:12	22:12	Common Pipistrelle	1	Foraging
08/07/2010	22:13	22:13	Common Pipistrelle	1	Foraging
08/07/2010	22:16	22:16	Common Pipistrelle	1	Foraging
08/07/2010	22:17	22:17	Common Pipistrelle	1	Commuting
08/07/2010	22:18	22:18	Common Pipistrelle	1	Foraging
08/07/2010	22:18	22:18	Soprano Pipistrelle	1	Foraging
08/07/2010	22:21	22:21	Common Pipistrelle	1	Commuting
08/07/2010	22:30	22:30	Common Pipistrelle	1	Commuting
08/07/2010	22:30	22:30	Common Pipistrelle	1	Foraging
08/07/2010	22:31	22:31	Myotis Sp.	1	Commuting
08/07/2010	22:34	22:34	Myotis Sp.	1	Commuting
08/07/2010	22:34	22:45	Soprano Pipistrelle	1	Commuting
08/07/2010	22:35	22:36	Common Pipistrelle	1	Foraging
08/07/2010	22:38	22:38	Common Pipistrelle	1	Commuting
08/07/2010	22:40	22:40	Common Pipistrelle	1	Commuting
08/07/2010	22:43	22:43	Common Pipistrelle	1	Commuting
08/07/2010	22:44	22:44	Common Pipistrelle	1	Commuting
08/07/2010	22:45	22:45	Noctule	1	Commuting
08/07/2010	22:46	22:46	Soprano Pipistrelle	1	Commuting
08/07/2010	22:48	22:48	Common Pipistrelle	1	Foraging
08/07/2010	22:49	22:49	Common Pipistrelle	1	Commuting
08/07/2010	22:49	22:49	Common Pipistrelle	1	Foraging
08/07/2010	22:50	22:50	Soprano Pipistrelle	1	Foraging
08/07/2010	22:50	22:50	Common Pipistrelle	1	Foraging
08/07/2010	22:50	22:50	Common Pipistrelle	1	Foraging
08/07/2010	22:51	22:51	Common Pipistrelle	1	Foraging
08/07/2010	22:52	22:52	Common Pipistrelle	1	Foraging
08/07/2010	22:53	22:53	Common Pipistrelle	1	Commuting
08/07/2010	22:54	22:54	Soprano Pipistrelle	1	Foraging
08/07/2010	22:56	22:56	Myotis Sp.	1	Foraging
08/07/2010	22:58	22:58	Myotis Sp.	1	Commuting
08/07/2010	22:59	22:59	Common Pipistrelle	1	Foraging
08/07/2010	22:59	22:59	Soprano Pipistrelle	1	Foraging
08/07/2010	23:01	23:01	Common Pipistrelle	1	Commuting
08/07/2010	23:04	23:04	Common Pipistrelle	1	Commuting
08/07/2010	23:05	23:05	Common Pipistrelle	1	Commuting
08/07/2010	23:06	23:06	Soprano Pipistrelle	1	Commuting
08/07/2010	23:07	23:07	Common Pipistrelle	1	Foraging
08/07/2010	23:07	23:07	Common Pipistrelle	1	Commuting
08/07/2010	23:08	23:08	Soprano Pipistrelle	1	Commuting
08/07/2010	23:09	23:09	Myotis Sp.	1	Foraging
08/07/2010	23:10	23:10	Myotis Sp.	1	Commuting
08/07/2010	23:12	23:12	Common Pipistrelle	1	Commuting
08/07/2010	23:14	23:14	Common Pipistrelle	1	Commuting
08/07/2010	23:17	23:17	Common Pipistrelle	1	Commuting
08/07/2010	23:17	23:17	Soprano Pipistrelle	1	Commuting
08/07/2010	23:19	23:19	Common Pipistrelle	1	Commuting
08/07/2010	23:22	23:22	Soprano Pipistrelle	1	Foraging
08/07/2010	23:22	23:22	Soprano Pipistrelle	1	Commuting

Keystone Environmental Ltd

Chiltern Line, Oxford (Wolvercote Tunnel)

Bat Dusk Emergence and Dawn Re-entry Survey 2010

Date	Time From	Time Until	Species	Number	Behaviour
08/07/2010	23:23	23:33	Common Pipistrelle	1	Commuting
08/07/2010	23:23	23:23	Common Pipistrelle	1	Foraging
08/07/2010	23:23	23:23	Common Pipistrelle	1	Commuting
08/07/2010	23:23	23:23	Common Pipistrelle	1	Foraging
08/07/2010	23:30	23:30	Common Pipistrelle	1	Foraging
09/07/2010	03:25	03:25	Soprano Pipistrelle	1	Foraging
09/07/2010	03:30	03:30	Common Pipistrelle	1	Commuting
09/07/2010	03:31	03:31	Common Pipistrelle	1	Foraging
09/07/2010	03:38	03:38	Common Pipistrelle	1	Commuting
09/07/2010	03:38	03:38	Common Pipistrelle	1	Foraging
09/07/2010	03:45	03:45	Common Pipistrelle	1	Commuting
09/07/2010	03:45	03:45	Common Pipistrelle	1	Foraging
09/07/2010	03:52	03:52	Common Pipistrelle	1	Commuting
09/07/2010	03:52	03:52	Common Pipistrelle	1	Commuting
09/07/2010	03:53	03:56	Common Pipistrelle	1	Foraging
09/07/2010	03:55	03:55	Soprano Pipistrelle	1	Foraging
09/07/2010	03:56	03:56	Common Pipistrelle	1	Foraging
09/07/2010	04:00	04:00	Common Pipistrelle	1	Commuting
09/07/2010	04:04	04:04	Common Pipistrelle	1	Commuting
09/07/2010	04:04	04:04	Common Pipistrelle	1	Commuting
09/07/2010	04:05	04:05	Common Pipistrelle	1	Commuting
09/07/2010	04:05	04:05	Common Pipistrelle	1	Foraging
09/07/2010	04:07	04:07	Soprano Pipistrelle	1	Foraging
09/07/2010	04:07	04:12	Common Pipistrelle	1	Foraging
09/07/2010	04:07	04:07	Common Pipistrelle	1	Foraging
09/07/2010	04:10	04:10	Common Pipistrelle	1	Foraging
09/07/2010	04:14	04:14	Common Pipistrelle	2	Foraging
09/07/2010	04:14	04:24	Common Pipistrelle	1	Foraging
09/07/2010	04:14	04:24	Soprano Pipistrelle	1	Foraging
09/07/2010	04:20	04:20	Common Pipistrelle	1	Commuting
09/07/2010	04:21	04:21	Common Pipistrelle	1	Foraging
10/08/2010	20:55	21:00	Common Pipistrelle	1	Foraging
10/08/2010	20:55	21:00	Common Pipistrelle	1	Commuting
10/08/2010	21:03	21:03	Common Pipistrelle	1	Commuting
10/08/2010	21:03	21:03	Common Pipistrelle	1	Foraging
10/08/2010	21:04	21:04	Common Pipistrelle	1	Commuting
10/08/2010	21:11	21:11	Common Pipistrelle	1	Foraging
10/08/2010	21:12	21:12	Soprano Pipistrelle	1	Commuting
10/08/2010	21:12	21:12	Common Pipistrelle	1	Foraging
10/08/2010	21:13	21:13	Common Pipistrelle	1	Commuting
10/08/2010	21:13	21:13	Common Pipistrelle	1	Commuting
10/08/2010	21:19	21:19	Common Pipistrelle	1	Commuting
10/08/2010	21:19	21:19	Common Pipistrelle	1	Commuting
10/08/2010	21:20	21:20	Common Pipistrelle	1	Commuting
10/08/2010	21:20	21:20	Common Pipistrelle	1	Commuting
10/08/2010	21:21	21:21	Soprano Pipistrelle	1	Foraging
10/08/2010	21:22	21:22	Myotis Sp.	1	Commuting
10/08/2010	21:23	21:23	Common Pipistrelle	1	Foraging
10/08/2010	21:23	21:25	Common Pipistrelle	1	Foraging
10/08/2010	21:26	21:26	Soprano Pipistrelle	1	Commuting
10/08/2010	21:27	21:57	Common Pipistrelle	1	Commuting
10/08/2010	21:28	21:28	Soprano Pipistrelle	1	Foraging
10/08/2010	21:28	21:29	Common Pipistrelle	1	Foraging
10/08/2010	21:29	21:29	Common Pipistrelle	1	Foraging
10/08/2010	21:30	21:30	Common Pipistrelle	1	Commuting
10/08/2010	21:31	21:31	Common Pipistrelle	1	Foraging
10/08/2010	21:35	21:35	Soprano Pipistrelle	1	Commuting

Keystone Environmental Ltd

Chiltern Line, Oxford (Wolvercote Tunnel)

Bat Dusk Emergence and Dawn Re-entry Survey 2010

Date	Time From	Time Until	Species	Number	Behaviour
10/08/2010	21:35	21:35	Common Pipistrelle	1	Foraging
10/08/2010	21:37	21:37	Common Pipistrelle	1	Commuting
10/08/2010	21:38	21:40	Common Pipistrelle	1	Foraging
10/08/2010	21:40	21:40	Common Pipistrelle	1	Foraging
10/08/2010	21:40	21:40	Common Pipistrelle	1	Foraging
10/08/2010	21:41	21:41	Common Pipistrelle	1	Commuting
10/08/2010	21:42	21:42	Common Pipistrelle	1	Commuting
10/08/2010	21:43	21:43	Common Pipistrelle	1	Foraging
10/08/2010	21:43	21:43	Common Pipistrelle	1	Commuting
10/08/2010	21:44	21:44	Common Pipistrelle	1	Foraging
10/08/2010	21:44	21:44	Common Pipistrelle	1	Commuting
10/08/2010	21:50	21:50	Common Pipistrelle	1	Foraging
10/08/2010	21:51	21:51	Common Pipistrelle	1	Commuting
10/08/2010	21:52	21:52	Myotis Sp.	1	Commuting
10/08/2010	21:53	21:53	Soprano Pipistrelle	1	Commuting
10/08/2010	21:54	21:54	Soprano Pipistrelle	1	Commuting
10/08/2010	21:54	21:54	Common Pipistrelle	1	Foraging
10/08/2010	21:55	21:55	Soprano Pipistrelle	1	Foraging
10/08/2010	21:56	21:56	Common Pipistrelle	1	Commuting
10/08/2010	21:56	21:56	Common Pipistrelle	1	Foraging
10/08/2010	21:58	21:58	Common Pipistrelle	1	Foraging
10/08/2010	21:58	21:58	Soprano Pipistrelle	1	Foraging
10/08/2010	21:59	21:59	Soprano Pipistrelle	1	Foraging
10/08/2010	21:59	21:59	Soprano Pipistrelle	1	Commuting
10/08/2010	22:00	22:00	Common Pipistrelle	1	Commuting
10/08/2010	22:01	22:01	Common Pipistrelle	1	Foraging
10/08/2010	22:02	22:02	Soprano Pipistrelle	1	Commuting
10/08/2010	22:04	22:04	Common Pipistrelle	1	Commuting
10/08/2010	22:04	22:04	Noctule	1	Commuting
10/08/2010	22:05	22:05	Common Pipistrelle	1	Commuting
10/08/2010	22:05	22:05	Common Pipistrelle	1	Foraging
10/08/2010	22:05	22:05	Common Pipistrelle	1	Foraging
10/08/2010	22:07	22:07	Common Pipistrelle	1	Foraging
10/08/2010	22:08	22:08	Common Pipistrelle	1	Commuting
10/08/2010	22:08	22:08	Common Pipistrelle	1	Foraging
10/08/2010	22:09	22:09	Common Pipistrelle	1	Commuting
10/08/2010	22:11	22:11	Soprano Pipistrelle	1	Commuting
10/08/2010	22:11	22:11	Common Pipistrelle	1	Commuting
10/08/2010	22:13	22:13	Common Pipistrelle	1	Commuting
10/08/2010	22:13	22:13	Noctule	1	Commuting
10/08/2010	22:13	22:13	Common Pipistrelle	1	Commuting
10/08/2010	22:13	22:13	Soprano Pipistrelle	1	Commuting
10/08/2010	22:17	22:17	Common Pipistrelle	1	Commuting
10/08/2010	22:19	22:19	Common Pipistrelle	1	Foraging
10/08/2010	22:21	22:21	Myotis Sp.	1	Foraging
10/08/2010	22:24	22:24	Common Pipistrelle	1	Socialising
10/08/2010	22:24	22:24	Common Pipistrelle	1	Commuting
10/08/2010	22:25	22:25	Common Pipistrelle	1	Foraging
10/08/2010	22:30	22:30	Soprano Pipistrelle	1	Commuting
10/08/2010	22:30	22:35	Myotis Sp.	1	Foraging
10/08/2010	22:33	22:33	Soprano Pipistrelle	1	Commuting
10/08/2010	22:34	22:36	Common Pipistrelle	1	Foraging
10/08/2010	22:40	22:40	Common Pipistrelle	1	Foraging