

# Bat Emergence and Activity Survey carried out on behalf of Cherwell District Council



South West Bicester Sports Village

Report Date: 13 May 2011

Consultant: Richard Stuttard



STRI is completely independent and has no alliances to commercial products, services or contractors. This ensures that our design, project management and advisory services provide the best solutions for each individual client.

If you have any queries with regard to this report please call +44 (0)1274 565131

## Bat Emergent and Activity Survey

### South West Bicester Sports Village

Date of Visits: 9<sup>th</sup>, 10<sup>th</sup> & 11<sup>th</sup> May 2011

Visit Objective: Determination of bat activity/presence.

Present: Richard Stuttard (STRI)  
Greg Pridgeon  
Dan Dean

## Executive Summary

Three Activity and Emergence Surveys were undertaken to determine bat roosting and foraging locations around the South West Bicester Sports Village Site. The survey concluded that no bat roosts were present within the development footprint, however bat roosts were located a short distance outside the boundary of the development site. Foraging routes were again limited to areas outside the development boundary with this in part being attributed to the recent flailing operations undertaken on hedgerows within the proposed development site.

The survey concluded that the development of the South West Bicester Sports Village and the removal of the two hedgerows associated with this project will have no detrimental effect on bat populations within this area, however it will be important that the hedgerows that will remain on site following the development retain their current size and stature to facilitate access to suspected roosts.

## Introduction

STRI's Ecology & Environment Unit have been commissioned by Cherwell District Council to undertake a Bat Emergent and Activity Survey of selected trees and hedgerows within an area of current agricultural land to the south west of the Town of Bicester.

Cherwell District Council wish to develop a series of sports and amenity facilities within this area including football and rugby pitches, tennis courts, a cricket wicket and outfield and perimeter cycle paths. To facilitate this two hedgerows (indicated on the accompanying drawing Appendix I) will need to be removed.

A tree and hedgerow appraisal undertaken in March 2011 indicated that the hedgerows within this site may be used as valuable foraging corridors for bats and that one oak tree earmarked for removal as part of the development had moderate potential to be supporting roosting bats given its size and stature and its ivy covered trunk.

STRI have been engaged to confirm whether bats are using this oak specimen and to identify the roosting and foraging habitats of bats around the development site.

## Legislation

All species of British bat and their roosts are given special protection under national and international legislation. Bats are protected through the Wildlife & Countryside Act 1981 (As amended) and the Conservation (Natural Habitats) Regulations 1994. This makes it an offence to kill injure or disturb a bat or to destroy any area used as habitat. Any development which potentially affects a bat roost may require a licence issued by Natural England. Should a licence be deemed necessary then Natural England is likely to seek advice from related agencies as to whether a licence should be granted.

Under Regulation 44 (3) licences can only be issued if Natural England is satisfied that:

- a. There is no satisfactory alternative.
- b. The action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

It is also an offence (unless authorised) under The Wildlife & Countryside Act 1981 (As amended) to intentionally kill or take any wild bird, take damage or destroy the nest of any wild bird while the nest is in use or being built. Any person who intentionally or recklessly disturbs any wild bird listed in Schedule 1 of The Wildlife & Countryside Act 1981 (As amended) while it is building a nest or is on or near a nest containing eggs or young or disturbs dependent young of such a bird shall be guilty of an offence and liable to a special penalty. Penalties include fines of up to £5,000 per animal/bird killed or injured, imprisonment and confiscation of all equipment used.

## Methodology

Detailed surveys for the emergence and activity of bats were carried out on Monday 9<sup>th</sup>, Tuesday 10<sup>th</sup> and Wednesday 11<sup>th</sup> May 2011. The surveys were undertaken by Mr Richard Stuttard and Mr Greg Pridgeon and Mr Dan Dean (all of STRI's Ecology & Environment Unit).

Prior to the initial dusk survey on 9<sup>th</sup> May, a daylight walkover of the site was undertaken to re-assess the trees and hedgerows in question and view the recent hedgerow management work that has been undertaken on the site.

Date of Assessment	Surveyors	Weather Conditions	Sunset Time	Equipment Used
Mon 9 May	Mr R Stuttard Mr G Pridgeon	16°C. Dry, gusty westerly wind to approx 15 m/hr. Mainly clear skies (18 cloud cover).	20..42	BAT MKIIa Magenta Electronics bat detector,
Tues 10 May	Mr R Stuttard Mr D Dean	12°C Dry, calm, mainly clear skies (28 cloud cover).	20.43	500,000 candle power torch, binoculars
Wed 11 May	Mr R Stuttard Mr D Dean	9°C Dry, calm mainly clear skies (18 cloud cover).	20.45	

## Bat Activity Survey

The bat activity survey determined the presence of species within the development area and assisted in providing estimates of bat populations.

Activity surveys commenced 30 minutes before sunset and continued until at least 90 minutes after sunset. The survey involved walking a transect of the site (highlighted in Appendix 1), the route of which was selected to encompass all hedgerow perimeters in and within close proximity to the development site. 3 minute stops were carried out at several points along the transect route (denoted on the accompanying drawing, Appendix 1) to record bat activity. The procedure aims to give a semi-quantitative measure of the level of bat activity across the survey area. Any bat activity during the survey was recorded with the aid of a bat detector. When the survey picked up a bat location signal on the bat detector the surveyor noted the location of the bat and the direction of flight. As well as locating bats, the detector also helped the surveyor in identifying the species of bat present.

Other characteristics that help to distinguish a species were flight patterns, shape and behaviour. Bat activity was classified as foraging if a regular patrolling beat, or if a feeding buzz was detected (pulses of ultra-sound emitted at a characteristically increasing rate as the bat homes in on its prey).

Commuting activity was recorded if the bat showed a clear directional movement without feeding.

## Bat Emergence Survey

The emergence survey was carried out in conjunction with the activity survey with assessments made at key points around the development site in addition to focussing on specific trees which were thought to be of moderate bat roosting potential.

When the surveyor picked up a bat echo location signal on the bat detector the surveyor noted the location of the bat and the direction of the flight to deduce whether it had exited a specific tree or was flying over from an off-site roost.

## Constraints

Most species of bat in Britain roost in crevices. Bats usually have several roosts and move between them at intervals. Sometimes bats leave few or no signs, therefore a lack of sign of bats does not necessarily show that bats do not use a specific area. This constraint is reduced by the diligence and experienced judgement of the surveyor however, bats can use a variety of roosts and their absence on the day of the survey does not necessarily mean that they are not present at other times.

## Results

To be read in conjunction with the accompanying site drawing (Appendix 1).

### Evening Activity/Emergence Survey – 9<sup>th</sup> May 2011

Time:	Species No. and Activity:	Comments:
21.30	Assessment Point 5 – Offsite hedgerow into connecting to boundary hedgerow No. 2. Two bats observed and picked up on the heterodyne bat detector heading initially in a north to south direction along this hedgerow dominated by mature horse chestnut, cherry and hawthorn. Species believed to be Common Pipistrelle and activity thought to be foraging given the cyclical nature of their flight pattern.	
22.00	Assessment Point 2 – Area of hedgerow 3 just outside the southern boundary of hedgerow 3 in a vicinity of three mature oak specimens. Two Common Pipistrelle bats seen and picked up on the bat detector foraging in and around the vicinity of the three mature oak trees in this area. The foraging pattern was clearly limited by the hedgerow management work undertaken within hedgerow 3 to the north of these three oak specimens. Foraging pattern was repeated constantly for a period of 20 minutes.	

Evening Activity/Emergence Survey – 10<sup>th</sup> May 2011

Time:	Species No. and Activity:	Comments:
21.37	Assessment Point 6 – One Common Pipistrelle foraging up and down the horse chestnut dominated hedgerow.	
21.55	Assessment Point 3 – Two Common Pipistrelle bats observed and picked up on bat detector circling the area of the three oak trees along hedgerow 3. Activity believed to be foraging.	
22.15	Assessment Point 6 – Single Common Pipistrelle bat continuing foraging activity observed earlier.	

Evening Activity/Emergence Survey – 11<sup>th</sup> May 2011

Time:	Species No. and Activity:	Comments:
21.30	Assessment Point 3 – A single Common Pipistrelle bat seen and picked up on bat detector foraging in a cyclical fashion around three mature oaks in this area.	
21.50	Assessment Point 6 - Eco location of one bat (no visual contact) picked up within the vicinity of three mature horse chestnut trees in this area. Likely to be Common Pipistrelle however unable to confirm.	
22.15	Assessment Point 2 – Single Common Pipistrelle bat seen and picked up on bat detector foraging around the vicinity around the three mature oak specimens. This activity continued for a period of 20 minutes. It would appear from the three surveys undertaken that there is a bat roost within the southern most of the three mature oak specimens in this area.	

## Conclusions

The mature oak tree situated within the vicinity of Assessment Point 8 on the accompanying drawing (Appendix I) was the main focus of the emergence and activity survey given the intention to remove this tree to facilitate the pitch development. Extensive time was spent in the vicinity of this tree both before and after dusk and it is concluded that there is no bat roosts within this tree and indeed bats are not using hedgerow 1 as a foraging route.

Equally the area of hedgerow 3 earmarked for removal was apparently not being used as foraging habitat, however as stated earlier this is likely to be due to the significant reduction in size and stature of this hedgerow since management works were undertaken in recent weeks. A suspected bat roost is present within the southernmost oak adjacent to Assessment Point 2 and is likely to be present in one of the horse chestnut trees adjacent to Assessment Point 6. It is the case that both these areas are outwith the development boundary and it is not believed that the Sports Village Development Project here will have any negative impact on bat populations within this area during the construction or operational phases of the development.

Nevertheless the creation of new hedgerows in line with the landscape planting regime outlined for the development site is vital mitigation for the loss of hedgerows 1 and 3. Although not utilised as foraging routes during the assessment period (most likely because of the management works undertaken) interconnecting hedgerows such as this for vital dispersal and foraging corridors for bats and it is crucial that the planting regimes earmarked for the site come to fruition in order to maintain full access links for bats across this site.

Richard Stuttard  
Ecological & Environmental Consultant  
STRI Ltd (UK Wide)