

Furesfen

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**BAT SURVEY REPORT.
CARLISLE PARK,
CARLISLE ROAD,
HAMPTON.**

To:
Ms J Quested

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From:
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1.1 PURPOSE

A bat walk/survey was commissioned at Carlisle Park, Hampton at the request of local residents. The survey was carried out by A. Fure, holder of protected species licences. Mature trees found at the park can act as important roost or foraging areas for declining bat species (Guest *et al*, 2002).

2.0 LEGISLATION AND POLICY

2.1 EUROPEAN AND UK LAW PERTAINING TO BATS

All species of bat are fully protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion in Schedule 5. All bats are also included in Schedule 2 of the Conservation (Natural Habitats, & c.) Regulations, 1994. The Act and Regulations make it illegal to:

- intentionally or deliberately kill, injure or capture (take) bats;
- deliberately disturb bats (whether in a roost or not);
- damage, destroy or obstruct access to bat roosts;
- possess or transport a bat or any other part of a bat, unless acquired legally; or
- sell, barter or exchange bats or parts of bats.

2.2 AMENDMENTS TO THE HABITATS REGULATIONS (2007)

During 2008, there were moves to strengthen the protection of features of importance that protected species are reliant upon. This applies where there may be **ANY** disturbance to bats or a disturbance affecting:

- The ability of a group of animals of that species to survive, breed or rear or nurture their young;
- In the case of migratory species, impair their ability to hibernate or migrate **(also new); or**
- The local distribution or abundance of the species

If a bat roost is to be affected by development activities, a licence from Natural England will need to be obtained.

2.3 CONSERVATION UNDER BIODIVERSITY ACTION PLANS (BAP)

The Richmond Biodiversity Action Plan (BAP) is a consideration in determining local habitat changes. Within the BAP is an Action plan for bats, which seeks to ensure that the habitat of this mammal is not adversely affected by habitat changes. The BAP aims to increase the number of this species within the district by:

- protecting certain habitats;
- securing appropriate management for them; and by
- seeking gains for certain species and habitats through the planning system.

3.0 METHOD

3.1 WALKOVER SURVEY

A walkover and internal inspection of the buildings was undertaken including:

- an external building inspection of the bowls pavilion and toilets from the ground; and
- a walkover of the general area to establish flight lines there might be through the park.

3.2 BAT EMERGENCE SURVEY

A bat walk and activity survey was undertaken during the evening of 12.9.14 using hand held recordable Bat Box 4 Frequency Division equipment. Recordings were played through BatSound software and interpreted according to Russ (2004).

3.3 INFORMATIVES

Information was supplied by:

- authors' data; and the
- local residents.

4.0 RESULTS

4.1 BAT SPECIES AND ROOSTS

A desk study showed that bat roosts have been recorded within 1km of the Park (refer to Table 1). Residents have seen bats flying around gardens to the park.

Table 1: Bats in the district (from most to least common)

Species		Frequency	Main roosts
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Common	Buildings nearby: Broad Lane, Percy Road and High Street.
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	Common	Buildings or trees Roosts nearby
Nathusius' Pipistrelle	<i>P. nathusii</i>	rare	Roosts near waterworks
Daubenton's bat	<i>Myotis daubentonii</i>	Declining in London (Briggs et al).	Structures, buildings and trees
Noctule bat	<i>Nyctalus noctula</i>	Uncommonly recorded	Trees at Bushy Park
Brown long-eared bat	<i>Plecotus auritus</i>	Uncommon in London	Known at Bushy Park
Serotine bat	<i>Eptesicus serotinus</i>	Uncommon	Buildings rarely trees.

Adapted from Mitchell-Jones (2007)

4.2 HABITAT FEATURES

During the survey of the area the following features of interest to bats were identified:

- Area of mature trees with reasonably uninterrupted tree lines on two of the Park boundaries (east and west); and
- A dead tree at the western boundary.

4.3 EMERGENCE SURVEY AND ACTIVITY SURVEY

During the survey no bats were seen to emerge trees. Soprano pipistrelles appeared at sunset + ten minutes 19.32 between the (refer to Table 2 and Figs.1). Soprano pipistrelle bats were later joined by common pipistrelle bats and social calls were recorded.

Table 2: Selected bat activity (12.9.14)

Sunset 19.22 p.m. Cloud cover 4/8 .Temperature 17 degrees centigrade at start.

Time	Details: Duet detector
19.32 sunset +10	Soprano pipistrelles along eastern boundary treeline. Insect plumes noted
19.40	First common pipistrelle
19.45	Continuous foraging along the eastern boundary of the park
19.50	Common and Soprano pipistrelles social calls along trees
20.10	Common and Soprano pipistrelles along western boundary
20.20	Intense bat activity along eastern boundary including songflighting by soprano pipistrelles.

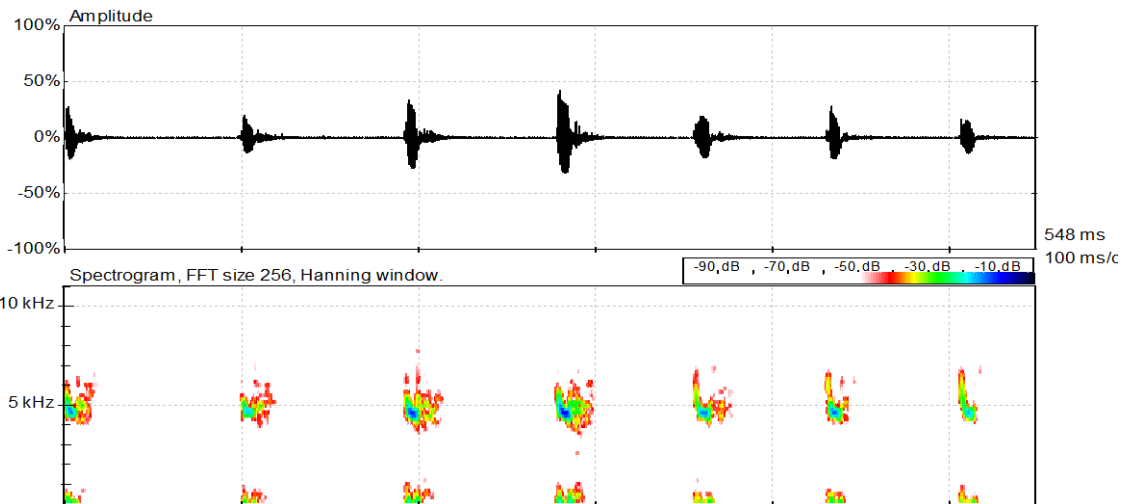


Fig.1 Screenshot of the sonogram of a soprano pipistrelle feeding along the eastern boundary

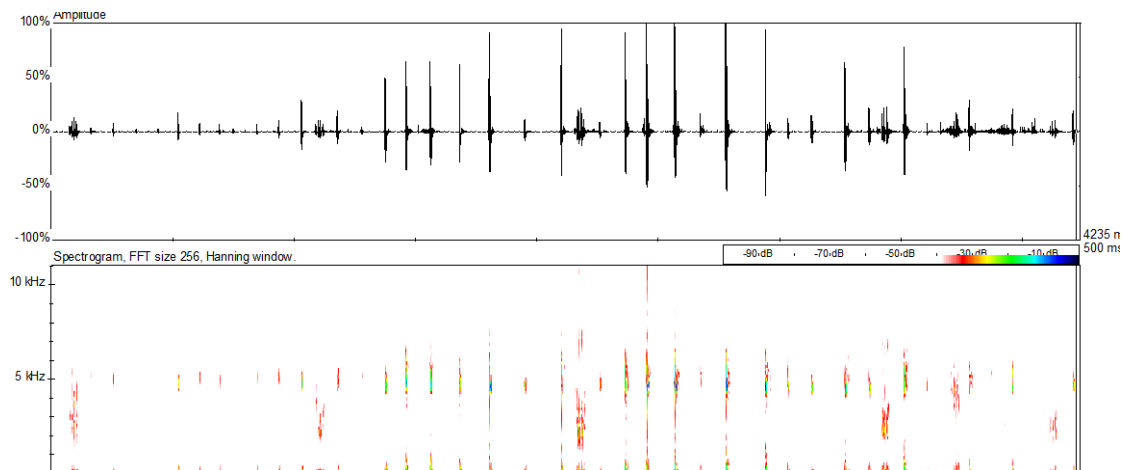


Fig. 2 Screenshot of the sonogram of a song flying bat, the smudges are social calls.

5.0 DISCUSSION

5.1 SPECIES

No bats were recorded emerging from the trees during the survey. The early appearance of bats was consistent with bats roosting close by. Soprano pipistrelles were the first to arrive and most abundant, perhaps using trees for roosting. Common pipistrelles had travelled from an offsite roost reaching the park slightly later.

5.2.1 BATS: PIPISTRELLE ECOLOGY

The “common” pipistrelle has been split into two separate species *Pipistrellus pipistrellus* that echolocates around 45 kHz and *P. pygmaeus* that calls around 55 kHz. The 45 kHz pipistrelle can use a wide range of habitats, but frequents the more open situations, such as woodland edges, parkland, recent plantations, watersides and gardens. It will fly up to 5km from the roost to forage but most stay within 2km. Colonies, usually of 30-60 bats; they frequently use buildings for roost sites, but are rarely found in bat boxes. Emergence of both species is usually twenty minutes after sunset and the arrival of bats on site indicated that the bats were roosting nearby.

5.2 BATS: MOVEMENT AND FORAGING.

Vegetation particularly mature trees are used by bats for a variety of functions. Protection of these features is key to the persistence of local bat colonies. These include:

- roosts: e.g. the soprano pipistrelles;
- commuting routes: in order to avoid open areas;
- cover: especially during the early part of the evening and in areas where light levels are high; as well as
- foraging areas: the trees are both an insect breeding habitat and offer a sheltered microclimate.

5.3 LIGHT POLLUTION

Where any bat species are found, care should be taken to ensure that roosts, foraging areas, and corridors for movement of these species are not affected by light pollution. A recent conference hosted by the Bat Conservation Trust on Lighting and Mitigation for Bats (2012) resolved that:

- All bat species are adversely affected by the roost access being lit.
- Bat species are generally adversely affected by foraging areas being lit.
- Insect prey is reduced by the 'vacuum effect' of broad spectrum light.

5.4 PROTECTION OF CORRIDORS

In it's Guidance on 'Preparing for Climate Change for Wildlife', Defra has highlighted the need to protect corridors used by bats for commuting purposes. Bat behaviour patterns are changing with the changing climate and hibernation times are being reduced, with bats being forced out to feed there is a duty to strengthen and protect wildlife corridors and commuting routes from light pollution. Vegetation creates a shield against light penetration as well as increasing insect productivity. Reduction of local vegetation or increase in the provision of lighting should be resisted.

6.0 REFERENCES

Author's data 2001-2009 North Surrey boundary with Greater London

Bat Conservation Trust (2012) Bat Survey Guidelines available from www.bats.org.uk

Briggs, P.A., Bullock, R. J., Tovey, J., (2007) Ten years of bat monitoring at the WWT London Wetland Centre, compared with National Bat Monitoring Programme trends for Greater London, London Naturalist no 86 London Natural History Society

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Russ, J (2004) The Bats of Britain and Ireland (Echolocation Calls, Sound Analysis and Species Identification