REPORT FOR GUIDED BAT WALK FRIDAY 8TH MAY 2015 ON STANMORE COMMON

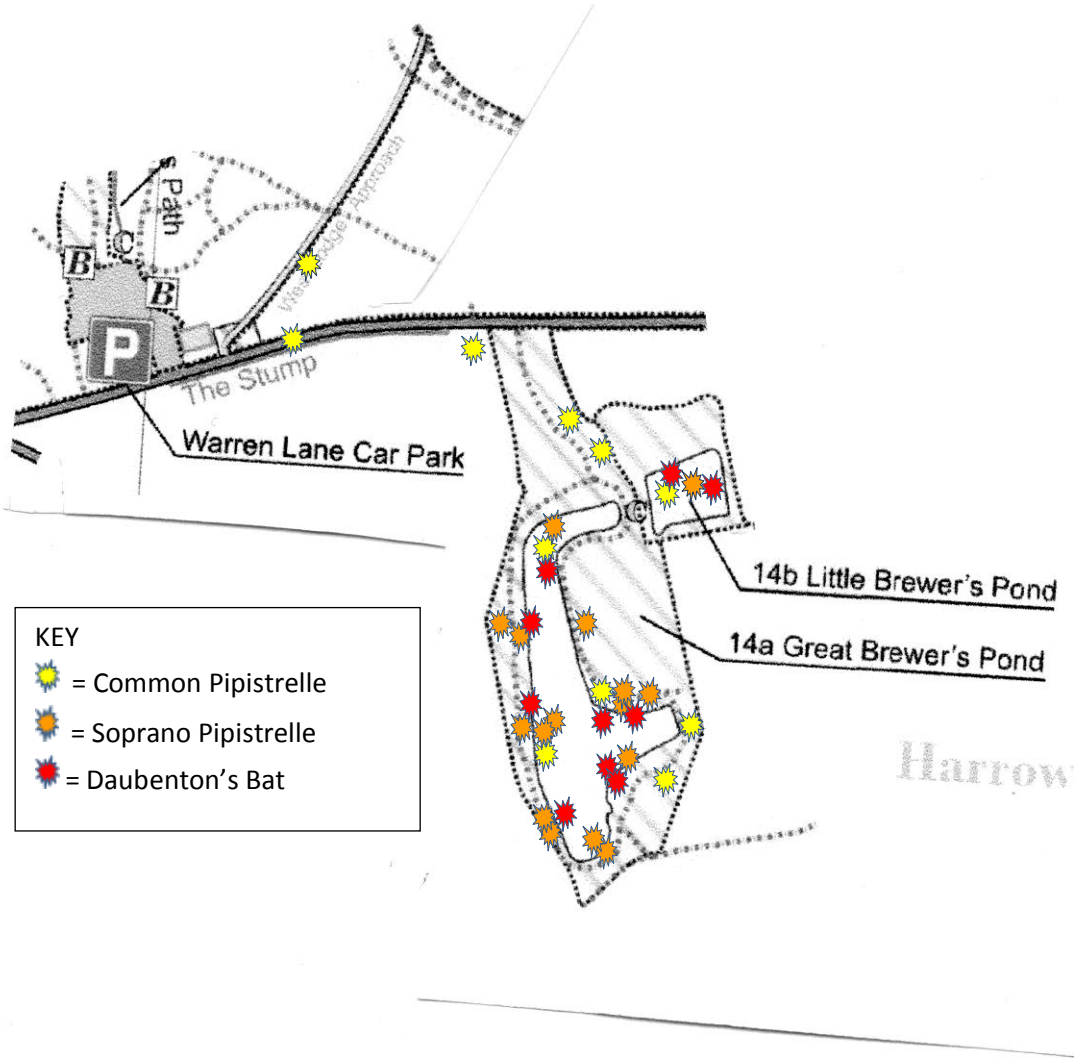
ATTENDEES: Simon Braidman, David Winton, Wendy Knight, Julia and David Stone, Amanda Wooley, Bevan, Dinah and Samantha Loon.

8pm to 10.50pm

WEATHER Overcast 12.7 Degrees centigrade 11mph SW rain at times

Rather than wander around at random I decided to follow the Bat Survey Route 1 for Stanmore Common.

BAT RECORDS ON BAT WALK FRIDAY 85.2015. EACH SHAPE MARKS A RECORD AND THE NUMBERS OF SHAPES IN A POSITION = LEVEL OF ACTIVITY.



Time pm	Position	Bat	Passes	View
8.17	1 Gate by Estate	None	None	
8.36	2. Lampost	None	None	
8.38	2.lampost	Common Pip	Repeated	Saw 2 bats
8.48	Between 2 and 3 crossing Warren Lane	Common Pip	Brief call	No View
8.51	3 start of cricket pitch	None	None	None started raining
8.54	4 middle of stretch of pitch	None	None	
8.57	5. End of cricket pitch southern boundary	Common Pip	1 pass	No view
9.04	6. ivy covered tree stump	Common Pip	1 pass	No view
9.07	Between 6 and 7 just north of stop point 7	Common Pip	Repeated passes	Saw bat
9.12	7. Between 2 ponds looking over Little Brewer's Pond	Daubenton's Bat	Repeated passes	Saw bat
9.20	7 Between 2 ponds looking over Little Brewer's Pond	Soprano Pip	Repeated passes	
9.28	8 where pond straightens up	Common Pip	Passes	
9.32	8 where pond straightens up	Soprano Pip	Repeated passes	
9.32	8 where pond straightens up	Daubenton's Bat	Repeated passes	Saw bat
9.38	Half way down eastern side of pond	Soprano Pip	Repeated passes	Saw bat
9.40	9 on bend of southeast arm of pond	Soprano Pip	Repeated passes	Saw bat
9.44	9 on bend of southeast arm of pond	Daubenton,s Bat	2-3 passes	Saw bat

Time pm	Position	Bat	Passes	View
9.49	On north face of south east arm	Daubenton's bat	repeated	
9.50	On north face of south east arm	Soprano Pipistrelle	Repeated passes	Saw bat
9.52	10 . In Dell	Common Pip	1 pass	
10.05	By Lake east of bin	Common Pip	Repeat pass	No View
10.05	By Lake east of bin	Soprano Pip	Repeat pass	Saw bat against trees good views
10.06	By Lake east of bin 4	Daubenton's Bat	Repeat passes	Very good view
10.13	11. BY house	none	None	
10.17	11by house	Soprano Pip	2 passes	No view
10.18	Wooden posts on ground south west corner of pond	Soprano Pip	Repeated passes	No View
10.18	Wooden posts on ground south west corner of pond	Daubenton's Bat	Repeated passes	Saw bat
10.25	Bay on south west stretch of pond	Common Pip	Repeated passes	
10.28	Bay on south west stretch of pond	Soprano Pip	Repeat Passes	Very good views
10.28	Bay on south west stretch of pond	Daubenton's Bat	Repeat Passes	good views
10.35	2nd bay on western side	Daubenton's Bat	Repeated passes	Saw bat
10.35	2nd bay on western side	Soprano Pip	Repeated passes	Saw bat
10.40	13.dark zone west side	Daubenton's Bat	Repeated passes	Saw bat
10.43	West side	Daubenton,s Bat	Repeated passes	Saw bat
10.43	West side	Soprano Pip	Repeated passes	Saw bat
10.48	14 end point	none		

We had a lot of bat activity. Conditions were not ideal as the wind got up and there was rain. However wherever the bats were sheltered they appeared.

The results are typical for the survey with the bats associated with water such as Daubenton's Bat and Soprano Pipistrelle concentrated in the area of the pond itself.

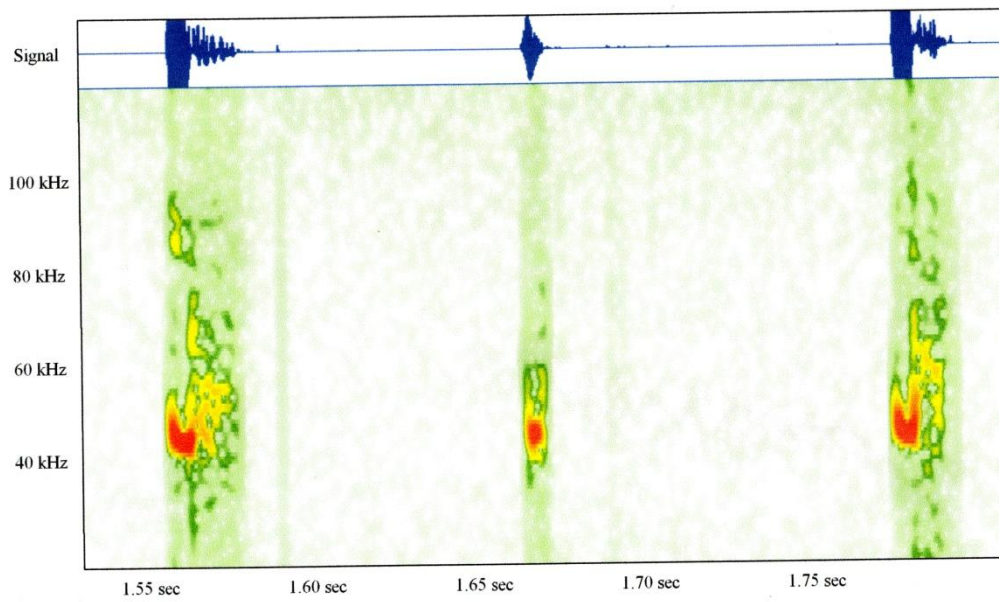
We identified the bats using the sound from the heterodyne bat detectors. These work by subtracting the incoming bat shout from an internal frequency and we can hear the difference.

The tone and depth of the click and how rapidly they come and the frequency they shout the loudest (The peak frequency) are all clues to work out the bat.

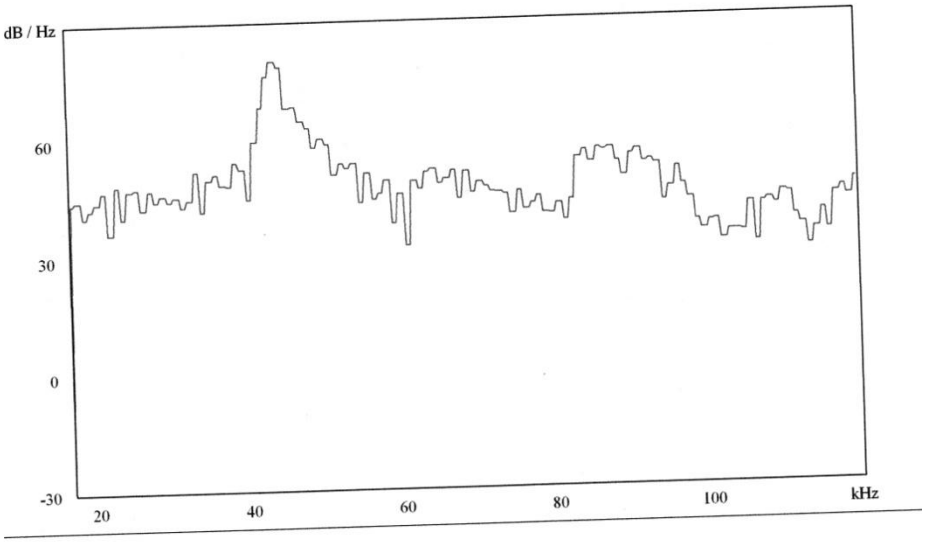
With Common Pipistrelles the peak frequency should be around 45Kilohertz (kHz). We can hear up to 20kHz. A heterodyne bat detector tuned to 45kHz should hear the clicks as wet low pitched slaps. A heterodyne detector only analyses a thin slice of each bat call.

I had a frequency division detector attached to a digital recorder. Frequency division detectors analyse the full range of signals in each bat call. The detector produces its own internal signal equivalent to the incoming one and every 10 incoming signals it outputs a single signal of the same duration .

These signals can be analysed. I ran some of the recorded wave files through a bat analysis programme called BATSCAN (FREE). and got the trace below



This trace shows a COMMON PIPISTRLLE. There are 3 calls in the window. The depth of the colour equals the energy put into the ultrasonic shout. The call on the left is a typical Pipistrelle ultrasonic echolocation call. It is shaped a bit like a reversed J shape. The other 2 calls a less typical but bats vary their calls to maximise the information received in the echo. If you do a peak energy diagram on the 1st peak in the window you get the trace below

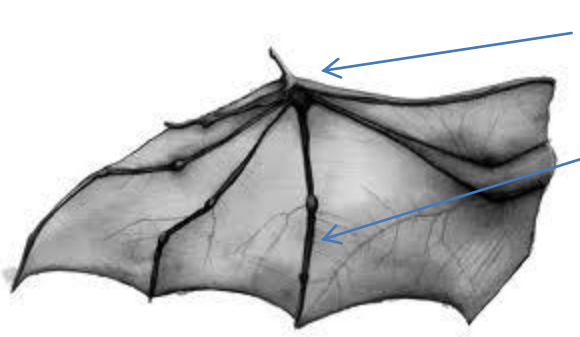


Notice the energy peak at around 43.6Khz. This is close to 45kHz and we can identify the call as coming from a Common Pipistrelle.

A Common Pipistrelle bat (Pipistrellus pipistrellus) is pictured below.

It is the UK's commonest bat with an estimated population of 2 million but this is far lower than what it used to be. The teeth have spiky edges to break up the hard chitin shells of insects.

Bats like us have a thumb and 4 fingers except their fingers are hugely elongated withskin stretched between them.



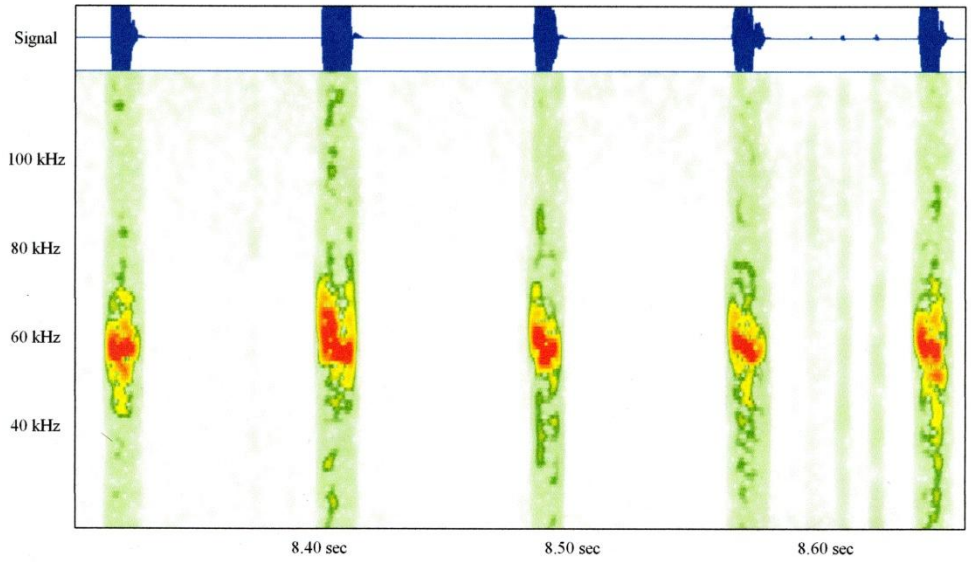
This structure makes bat wings highly foldable and makes changing wing shape easy and this makes all bats highly manoeuvrable.in the air much more so than birds.

A Pipistrelle bat can fit into a matchbox and as we found out last night they can squeeze into a CD box.

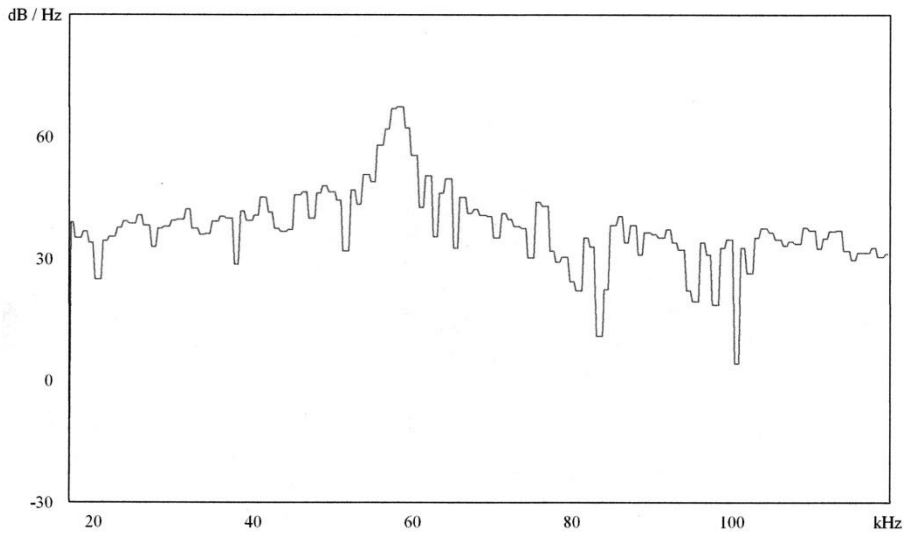
The eyesight is good about the same as ours and they do have colour vision. These bats are not long out of hibernation. They have spent the winter in a crack or crevice, somewhere cold and wet. In hibernation a bat heart rate drops from 600 beats per minute to around 30 and body temperature from 39 degrees centigrade to air ambient. A bat in hibernation uses less than 1% of energy of an bat at rest but not in torpor or hibernation. Even in summer a bat can drop its body temperature, heart rate and breathing rate. The ability to control body temperature at more than one level is called herterothermy. Bats have special brown fat stores that enable them to survive poor conditions.

It allows temperate region bats to overcome winters.

We also detected Soprano Pipistrelle (Pipistrellus pygmaeus).



Above is a trace for this species and you can just about make out the typical reverse J call. A peak energy trace gives: Note the peak energy is 58kHz. This is in the range of Soprano Pipistrelle.



There is another Pipistrelle in the UK but it is quite rare. If you get a zero point (maximum energy) of around 40kHz, then it is probably a Nathusius Pipstrelle (Pipistrellus nathusii). This species does occur on this reserve.

Pipistrelles eat 2-3000 small insects a night about a third of their bodyweight. Gnats, midges, mosquitos, lacewings and micromoths are common prey. Soprano Pipistrelles as they hand around water eat Caddisflies, Mayflies, Stoneflies as well as the above.

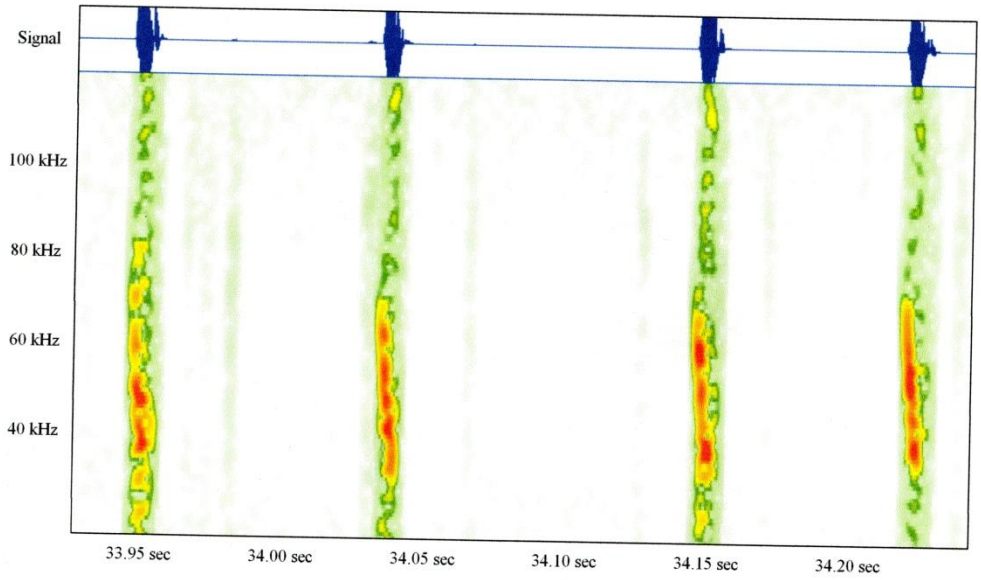
Bats breed in June/July and form maternity roosts. For Pipistrelle bats the males hold separate territories. The females give birth to one baby usually at the end of June or the beginning of July. The babies are left behind and then suckled when she returns.

Bats need high temperatures to breed and modern centrally heated houses are ideal for Pipistrelle bats.

WE did detect a third bat species. This is the Water Bat or Daubenton's Bat (Myotis daubentii).

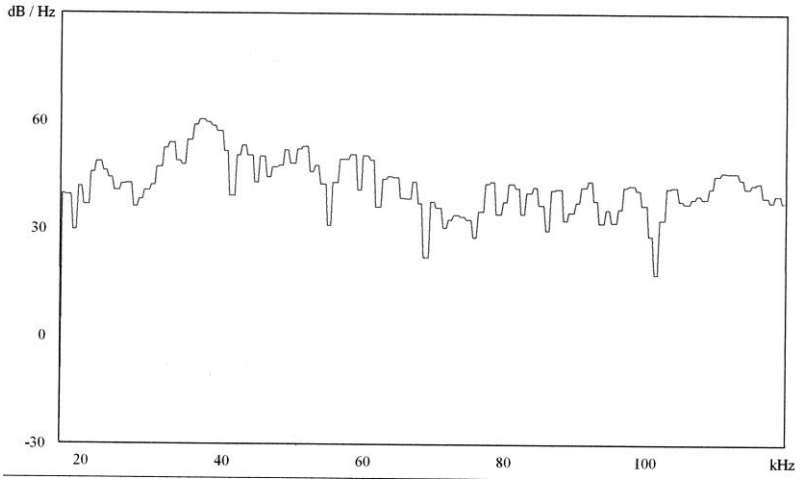
Daubenton's Bat hunting

Daubenton's Bats have very large feet, the largest feet per body size of any bat. This is an adaption to their life over water. They use their big feet to gafe their insect prey, which are adult midges, mosquitos and other insects as they leave the water on hatching out. Daubenton's bat are bigger and heavier than Pipsitrelle bats. Daubenton's Bat is a member of the Myotis genius of bats. There are 6 UK species of this genus; Brandt's Bat, Whiskered Bat, Natterer's Bat, Daubenton's Bat, Bechstein's Bat and Alcothoe Bat. Unfortunately they all sound almost identical on a bat detector and even highly experienced bat workers will often just count them as members of the genus rather than identify them to a species. On a heterodyne detector, they all sound similar with dry clicks with no tone which barely changes as you tune the detector up and down. However the habit of Daubenton's Bat skimming the surface of lakes and pools is unique so if you see a bat doing this on a straight low skimmy sweep you can be reasonably confident it is a Daubenton's Bat.



Here is a trace for a Daubenton's Bat but it could easily be one of the other species if it had not been seen visually. On some traces you can see a distinct kink or curve in the shape and this is distinctive to the species but it is not always present. Above there is no real evidence of it.

An energy diagram of a Daubenton's Bat will not show clear peaks as Myotis Bats spread the energy of their shouts across a range of frequencies. There is a peak at 36kHz which is on the lower limit of energy peak range



I hope everyone enjoyed the walk and we did see a lot. Thanks for coming.

Simon Braidman