

# Newsletter

Spring  
2014

## Hatfield Forest Up-date

Colin Edwards with the second part of his report on surveys at Hatfield Forest in 2013

Radio tracking started on Saturday, 10<sup>th</sup> August, with Duncan taking the lead to find the first of many roost trees used by our radio-tagged Daubenton's bat. During the zonal surveys I'd tried to ensure that the majority of the site had been covered, but as luck would have it, I'd still managed to miss out the area being used by the daubs! The first tree located was in The Warren, a small central copse containing a good number of mature Horse Chestnut trees. A good start to the tracking.... the tree was recorded as a new roost for the site.

The process of tracking proved fairly easy, especially during the day time to locate the roost trees. This could easily be done by a single person with the radio receiver and hand held Yagi aerial. Simply a case of starting with the gain of the receiver set to a maximum, doing a slow sweep with the aerial to find the highest strength signal and then trekking in that direction. Then, as the signal strength reached a maximum, it was a case of lowering the gain on the receiver and again trekking in the direction of the signal to maximise the received level. Eventually it would become obvious that one was getting close to the roost tree and it did not take much practice to get good results. On some of the tree roosts it was possible to identify the branch in which the bat was located as the receiver was very accurate (good for the lower branches but not so good on the higher branches!).

The Saturday evening added the tagged Natterer's bat to the equation, but with this bat the tag did not operate so well. The signal would intermittently fail and return the following day so only a limited amount of data could be collected for this bat.

On the Sunday morning the ecology team lead by Jan Collins and Dave Cove performed a sweep of the site to locate the roost trees with the intent to climb the tree(s) to find the access point. The Natterer's tree was again located in the area of The Warren. The tree was again a Horse Chestnut but this time the tree was dead and was considered too dangerous to climb.

The Daubenton's bat was found to be in the north of Hatfield Forest in an ash tree (see photo on page 2. Possible roost indicated on left branch), not too far away from where the bat had been trapped on the Friday night. This was the only roost we found outside The Warren and was the only roost tree found that was not a Horse Chestnut. So with the day time tracking to find roost trees we had a good deal of success. We found nine new roost trees during the two and a half weeks that the tags were active - six Daubenton's and three Natterer's.

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Deadline for next issue, Summer 2014: 15<sup>th</sup> July 2014. pathatch@live.co.uk

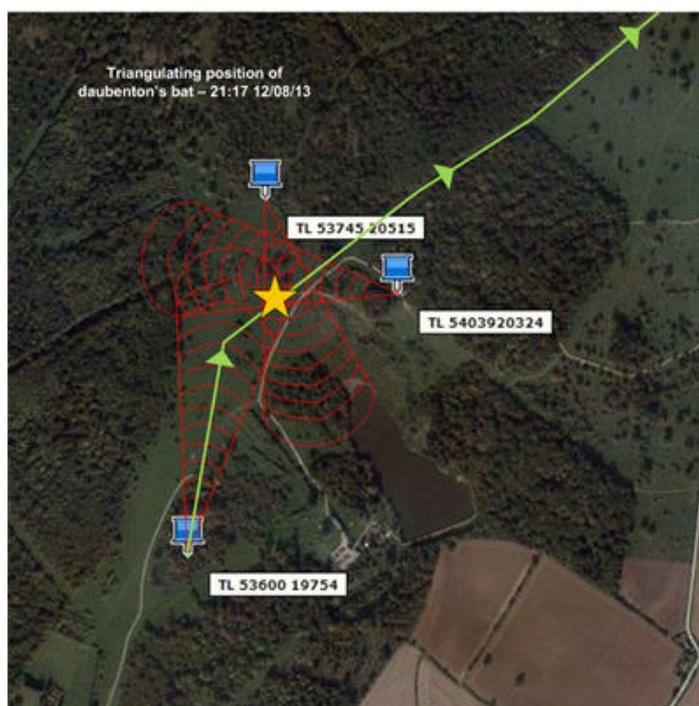
The aim of the tracking was to also find out some more as to what the bats did during the night and this proved much more tricky to say the least! The Daubenton's bat would leave the roost and travel at speed in a northerly direction, giving us little to no time to triangulate its heading. The issue of night tracking was also hindered due to the lack of volunteers.

The best method was to have three people in a team - one on the tracking equipment, one on the compass and one taking notes. Certainly when there were less people in a team then it was difficult to get more than one reading before the bat flew past and disappeared. This is certainly a lesson learned from the project and a must for next time to get the teams of volunteers on board before going ahead with the tagging.



During the time the tags were working we managed to get people out on nine evenings, which meant we could achieve some data. Thanks to Duncan Fisher, Geoff Ragg and Paul Davies who turned out on several evenings. Due to the intermittent nature of the Natterer's tag, we concentrated on the Daubenton's bat. We would start by finding the roost tree and would then find which direction it was going and, night by night, we tracked it further to gather some data as to its regular evening activity. On one evening we did manage to have three teams in place to achieve a reasonable triangulation on the bat, which, on every night we tracked it, would head north from The Warren and then leave Hatfield Forest to the north east (see below).

After a few nights we found that the Daubenton's bat would head just north of the Takeley road to some balancing ponds. These are three ponds set down about ten metres below ground level where the Daubenton's would spend up to an hour feeding. The setting of the ponds did not aid the tracking due to them being set fairly deep so when the bat was there it was difficult to get a signal from it back at the north end of the forest. However, having found that the bat was regularly going to the ponds, we could track it more easily.



Further tracking saw that the bat would leave the ponds and head east to Takeley church, where it would spend 20 - 30 minutes feeding in the churchyard, after which it would disappear. On the odd evening the bat would return to the north end of Hatfield Forest, but tracking it in the woodland proved unfruitful and on all evenings we finished tracking by midnight.

Further to the tracking, we did manage to locate and confirm one of the roost locations and on two evenings we filmed the emergence, showing on the first evening 31 bats exiting and on the next evening 23 bats. A third attempt to video record the emergence was not successful as the bats had moved roost tree!

Conclusions: We found that both Daubenton's bats and Natterer's bats would move roost tree regularly. It seemed that the Daubenton's colony would possibly have more than one roost occupied on any one night as the numbers emerging were not consistent. This needs more research to confirm. Mature Horse Chestnut trees seem to be favoured by both the Daubenton's and the Natterer's bats at this site. Is this something that is more widespread than just Hatfield Forest? Something else to look into. Daubenton's move away from their roost tree quickly, with little echolocation. This is well documented and we just confirmed it.

Daubenton's seem to have a regular evening pattern - same flightpath, same feeding locations. Natterer's bats did not seem to travel so far, staying in the forest closer to the roost tree. This was as predicted, although this observation is based on limited tracking as we had limited luck with the tag on this bat.

Further surveying is required to clarify the roost access locations on the remaining trees. We have the go ahead to climb the trees if we wish with the aid of a local climber. Something I hope to plan for this autumn. Anyone interested then please contact Colin Edwards.

Further trapping could be carried out with the aim of finding the so far elusive female barbastelle and radio tracking to find a maternity roost. Similar for the Nathusius' pipistrelle. Something to sort out for next season. Further trapping would also help in trying to find out if we have whiskered or Brandt's bats at the site.

All in all, this has been a very successful project which has raised a good few questions for us to work on and to look forward to answering in the future. Thanks to all of you that helped out and made this project possible. Anyone wishing to have a copy of the report sent to the National Trust is more than welcome and should contact Colin Edwards for this. Contact: edwards.colin1@sky.com

Stop Press: Wall Wood, to the south of the forest, has been surveyed with bat detectors for the first time this spring, with barbastelle recorded once again.

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## Priority Report

Weald Bat Project, Essex Nathusius' Pipistrelle Project and training are three priorities for 2014. Here's an account of the progress we have made with these so far this year:

An excellent presentation on sound analysis has been put together by Andrew Palmer and delivered at the first of a series of workshops for EBG members. Training in the use of endoscopes has been provided for licence trainees. A workshop on how to lead bat walks was attended by about a dozen Essex County Council country park rangers and a workshop for beginners in the use of heterodyne detectors has been arranged.

The first 2014 ENPP trapping session at Hanningfield in April failed to capture the target species. However, a male Nathusius was caught and ringed in May. During these sessions, we were able to give the regular soprano pipistrelle roost counters a close up view of a few of the bats they have been monitoring, for some their first ever sight of a bat in the hand.

Surveys at Weald Country Park have concentrated on the lakes and back-tracking to locate roosts. A dawn survey of the lakes area is planned for later this summer. The site has also hosted workshops on leading bat walks and use of endoscopes. This project offers the best opportunity for new members to gain experience in regular surveys.

# Home-made Trackers

**Paul Davies**

experiments with some home-made equipment

Back in early August 2013, Colin Edwards circulated invitations to be involved with some bat trapping and radio tracking at Hatfield Forest. Being new to the batting world, I jumped at the opportunity as it is not too far from where I live and radio tracking rarely occurs. I spent a couple of late evenings along with others in watching the licensed ecologists trapping, recording and fitting a tiny radio transmitter on two of the bats.

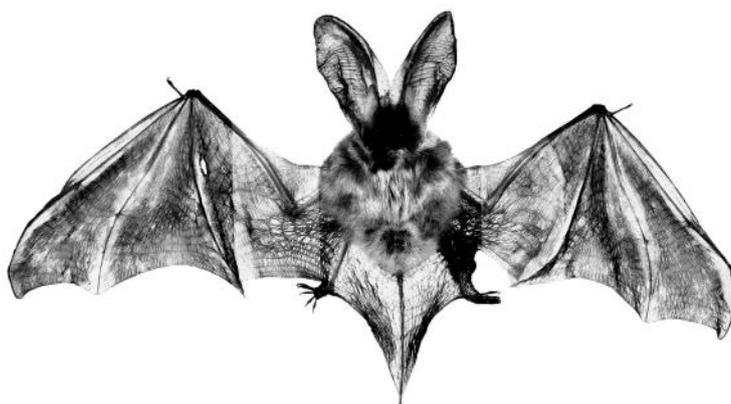


It was good to get up close to the various bats such as pips, barbestelle, Natterer's, Daubenton's and a long-eared bat, although it was the radio tracking side that also interested me. One of my other hobbies is amateur radio (also known as 'ham radio') so I was keen to know how well this would work with such tiny transmitters. I have some knowledge of this type of bio-tracking as I volunteer for the Dyfi Osprey Project in mid-Wales and they have satellite tracked osprey fledglings a few times. The method of tracking a bat, however, is on a lot smaller scale and involves the transmitter radiating a signal to be locally received, rather than received by a satellite, as is the case with the ospreys.

It was decided to tag a netted Daubenton's and a Natterer's on the Friday and Saturday night with the two transmitters available. Once fitted, the receivers were tuned to the frequencies of each tag and the bats released. I noted the frequencies and the aerials used by the ecologists with their professional and expensive receivers and thought perhaps I could cobble something similar together from my ham radio kit. I used a small hand held radio and cut down a yagi (something akin to a tv aerial) and set off to the forest on the Sunday afternoon to test it. No sooner had I switched on in the car park than I picked up a weak signal and, turning the antenna to gain maximum signal, tracked down a couple of ecologists next to a roost tree!

My 'home brew' system worked, so for the next week or so I assisted Colin and others tracking the bats' emergence from various old trees and trying to establish their tracks around the forest and wider area. My kit wasn't as sensitive as the professional sets in use but adequate for close range work. It certainly whetted my appetite for such ventures in future.

Thanks to Colin and the rest of the team for giving me the chance to get close to the bats and trying some tracking in my first year of 'batting'.



Two of our members (Jan Ragg and Andrew Palmer) are working on a project to produce realistic bat silhouettes. The first step is to photograph dead specimens as exemplified by this BLE. An article with more details of this and another collaborative photographic project - examining the differences between pipistrelle skulls - will be published in a future newsletter.

# Bats and Diseases

Robin Cottrill summarises the talk from this year's AGM

At the AGM on 29<sup>th</sup> March we heard excellent and informative presentations on bat diseases from Lisa Worledge and our own Helen Miller, both from the Bat Conservation Trust staff.

Lisa spoke on the relationship between bats and infectious diseases. At one extreme are diseases which have little impact on bats but significant impacts on public health, such as rabies. At the other extreme are diseases which have significant impacts on bats (such as White-nose Syndrome) though with no effect on public health, but with potentially major effects on agriculture. This occurs through massive loss of bat colonies in the U.S.A. and the corresponding need to increase expenditure on controlling insect pests. Rabies is one of several different viral neuro-invasive diseases, of which new ones are being discovered all the time. The virus family is known as Lyssavirus.

Rabies is found on all continents except Antarctica. Australia and Britain are classed as rabies-free as it occurs in bats but no other mammals. Western Europe is largely free of rabies as a result of vaccination of foxes through treated bait. Symptoms in bats are very varied, but unusual aggression and fitting are the commonest. Infected humans may develop symptoms in as little as four days or as long as nineteen years. Worldwide there are over 150 countries with recorded rabies cases and over 55,000 cases of rabies in humans per annum. Approximately 500 deaths per year are due to bats, mostly in the Americas. More than 15 million people receive post-bite treatment per year.

Two versions of the bat rabies virus occur in Europe, of which European Bat Lyssavirus 1 (EBLV 1) is the original form (and most dangerous to humans), occurring mainly in serotine bats. EBLV 2 was first isolated from humans in 1985 and has been found in Daubenton's, noctule and pond bat. It is much rarer and less virulent than EBLV 1 and there having been only two human cases in Britain.

Public health measures include passive surveillance (sampling of dead bats) and active surveillance, with blood or saliva samples taken from many live bats (710,000 sampled since 1987). This may not be a completely unbiased coverage of British bats as it is skewed towards English bats and the most common species. Only nine bats have been found with live virus.

Risk avoidance for bat workers and others handling bats is: vaccinate, wear gloves, follow published good practice guidance and know what to do if bitten.

Lisa told us that there are other emerging infectious diseases (Ebola, Marburg etc), of which about 60% are zoonotic (originating in animals). Emergence of zoonotic diseases may be due to changes in human behaviour, such as modification to habitats and changes in agricultural practices. Bats per species carry more zoonotic diseases than other species, such as rodents (although rodents are responsible for more human deaths). This may be due to bats' long life spans, large distances covered by flight, social roosting and proximity to humans. Possibly due to the evolution of flight, with its energy intensity, bats seem to have a much tougher immune system than other species.

Helen then took over the presentation to tell us about White-nose Syndrome.

White-nose Syndrome is caused by a fungus (infecting the animals' noses). Irritation by the fungus disturbs the bats, causing them to cluster round roost entrances and fly during the day in cold temperatures. It has caused massive losses in the USA, where over 5.7 million bats have died. In Europe, although the fungus has been found in ten countries since 2009, there are normally no symptoms other than the fungus. Only three deaths in bats due to the fungus have been reported, with no mass mortality and no abnormal observations. It is thought that the fungus may have originated in Europe and been transmitted to the USA where bats have no resistance to it.

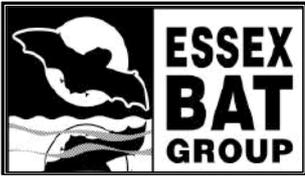
Predictive studies looking at where the fungus occurs in Europe, and looking at areas with similar environmental conditions, suggests that much of Britain is suitable for the fungus. Joint studies with North Arizona University have sampled soil from bat roosts at six National Bat Monitoring Programme sites, of which five had the fungus. However, Britain and Europe seem to have the fungus without the syndrome.

A pan-European project has been launched looking at twenty five sites across Britain with large numbers of bats, especially sites used by tourists and cavers; it will also look at sites in areas thought less suitable for the fungus. This is clearly a disease with an alarming potential, though the news from Britain and Europe is cautiously optimistic. It is good to know that there is real worldwide co-operation going on to tackle this problem and we are grateful to Lisa and Helen for their informative talk.

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## News In Brief

- The formation of a bat survey team for the Langdon Hills Living Landscape area got underway in May with a workshop on the use of heterodyne bat detectors delivered by Philip Briggs of BCT. This is a joint venture between the Langdon Hills Living Landscape partner organisations, with EBG providing training and support. Contact Pat: pathatch@live.co.uk;
- Two visits have been carried out recently by our Conservation Officer to assess sites in terms of their suitability as habitat for bats, at the request of site managers. A sustainable land use project near Chelmsford and the managers of Wivenhoe Cemetery have been given reports on the assessment and guidance on enhancing their sites for bats;
- Barbastelles have already been recorded this year at several sites in north west Essex as our new local survey project gets underway. Contact Andrew: arpalmer@talk21.com;
- Simon Smith has kindly volunteered to co-ordinate surveys in the Writtle Forest area and is meeting woodland managers soon to discuss the project. Contact Pat: pathatch@live.co.uk;
- Children's activities, such as finger puppet and badge making, proved very popular at a Bat Group stall at an event at Priory Park in Southend. Site staff have asked us to carry out bat surveys at the park. Any local members willing to take part should contact a Committee member;
- Fifteen EBG members attended the East of England Bat Conference in Suffolk in March, with talks including Madeleine Ryan's soprano pipistrelle study, which found that bats foraged much further away from the roost than expected for this species at her study site in Essex;
- Essex Bat Group has contributed £200 towards the cost of producing the forthcoming new edition of The Mammals of Essex.



## Committee members and other contacts

Bat Conservation Trust  
Partner Group



### EBG Committee

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### EBG Clothing

Essex Bat Group clothing is now available, featuring our evocative emblem of a bat flying over moonlit water

Sweat Shirt £16; Polo Shirt £15; T-shirt £12; Fleece £25; Gillet £20; Cap £9  
Please send your order to Sue Burton, 2 Mellish Way, Hornchurch, Essex RM11 2GU, enclosing a cheque made payable to EBG for the total amount, including £2.35 per item post and packaging. Please allow 3-4 weeks for delivery. If you can collect your clothing from Harlow, Hornchurch or Ingatestone please let Sue know and omit the postage charge.



### Membership Form

You can use this form to renew your membership or recruit a friend

Send to: Helen Miller, 16 Hogarth Avenue, Brentwood, Essex CM15 8BE

Name

Address

Email

Telephone

Using e-mail means we can send your newsletter and other correspondence electronically. Your e-mail address will not be passed on to any other organisation or used for any other purpose.

How did you hear about EBG? (internet, local bat walk, EWT, friend etc): \_\_\_\_\_

Please tick as appropriate:

- Standard membership of the group is just £5 for 1 year  
 or £12 for 3 years

I would also like to make a donation of £ \_\_\_\_\_

I enclose a cheque for £ \_\_\_\_\_ (made payable to Essex Bat Group)

\*Your first year's membership will run until 31<sup>st</sup> December 2014.