

Have BatNav, will travel!

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Over the last two summers I have become addicted to driving home at night with the microphone of an Anabat SD2, connected to a BatNav, pointing out of the window. If you drive slowly enough, roughly between 30-40mph, the detector records bat calls as you drive, these can then be mapped.

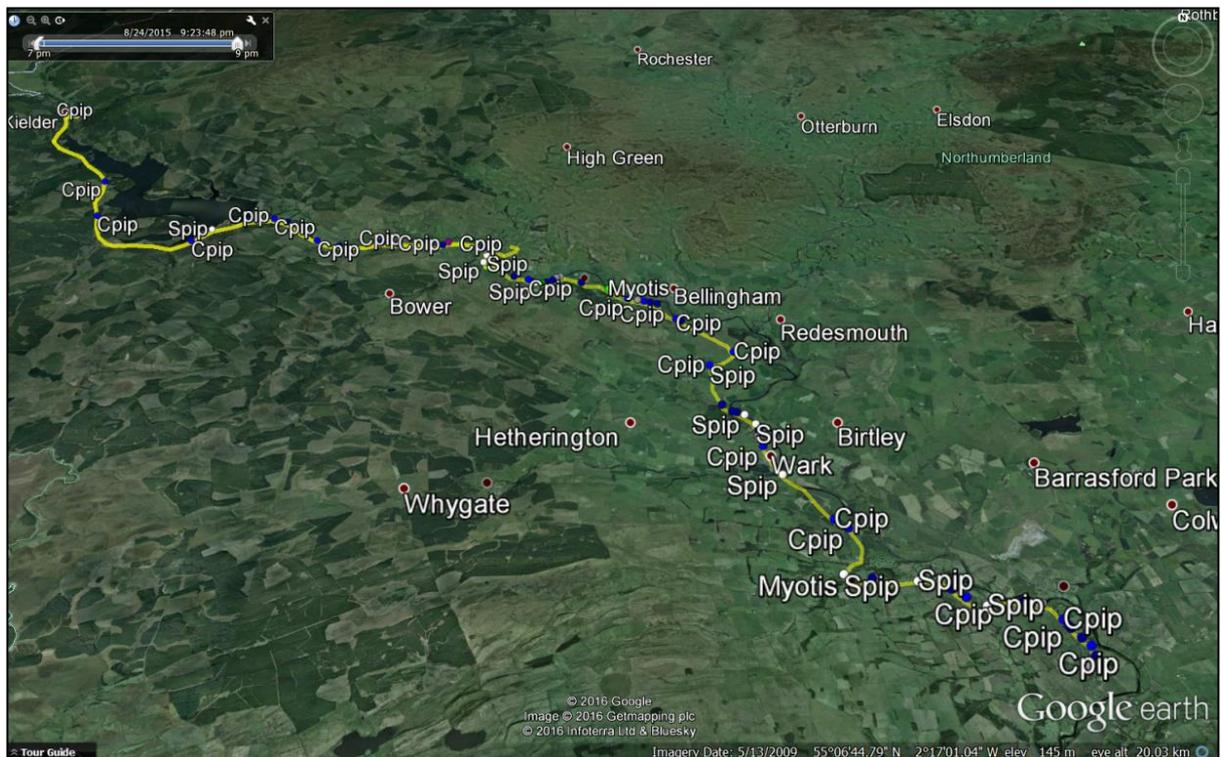
This short note sets out a method of, and results from, this simple way of collecting up to date bat distribution records at a landscape scale.

The equipment for recording bats has improved so rapidly recently that this technology is now readily available. I use an Anabat SD2 connected to a BatNav GPS system, or alternatively an Anabat Express in transect mode. In either case the microphone needs to be pointing out of the window. The BatNav GPS unit needs to be located on the vehicle roof but the Anabat Express will record location data from the front seat of the car once a GPS fix has been obtained. Other detectors are available, although not all of them allow individual bat calls to be linked to GPS location data. A friend uses a roof mounted microphone, this is probably a better technique as it can record bat calls from both sides of the vehicle and may record more *Nyctalus* species calls as the car roof could act as a sounding board for reflecting calls; as yet we have not compared results to see if there is a difference in the volume or quality of data recorded.

This is an excellent way to collect bat records for areas where there is very little, or even no, data; it is only a brief snap-shot of bat activity but can provide records for many 1km squares in one evening. The only drawback is that I found I was driving home by longer and more convoluted routes, going along roads I had never travelled before, all in the name of finding bats.

The data can be plotted in Google Earth, allowing you to see your route and the location of the bats; this example is the drive home from Kielder to Humshaugh.





The majority of the calls recorded are *Pipistrellus* species calls, as can be seen on the example above. Of the 4608 individual bats files I have recorded only 2.6% are *Nyctalus* species calls and *Myotis* species account for 3.7% of calls. Exceptionally brown long-eared bat *Plecotus auritus* calls have been recorded, although they account for only 0.09% of files, which equates to four calls.

Pipistrellus species bats are known to be widespread and can utilise most habitats but it does seem that this method records a higher number of *Pipistrellus* species bat calls than would be expected. Possible theories for the perceived bias are that although *Nyctalus* species bats have loud calls they are fast moving so the chances of the driven transect intersecting the flight of a big bat is assumed to be low and that *Myotis* species have quiet calls; probably the reason less calls are detected are as the bats would need to be closer to the car than *Pipistrellus/Nyctalus* species bats to be picked up. Also habitat would be expected to have a function here; *Pipistrellus* species bats are more likely to feed along roads and under lights than some species and *Myotis* species bats may be more limited by foraging habitat and therefore less encountered along roads.

Even allowing for the fact that the data appears to be biased towards *Pipistrellus* species, the data generated by this method is considerable, especially as the data has been collected opportunistically during the drive home rather than through targeted survey.

The data I have collected in just two summers, when plotted in DMAP (see map below), show how widespread the records are, although a bias can be seen as the records converge on my home in Humshaugh.

This has been a fun project to undertake, requiring little effort but generating many new bat records. There have been unexpected side effects too. Driving at 30mph along the military road in a bright yellow sports car at 12:30 at night did attract the attention of the local constabulary; they used their blue lights to stop me! I explained what I was doing and why and proceeded to educate the officer about bats, he soon decided to let me go on my way.... And then, less than a week later I was stopped again about five miles from the same spot! Once I had complained about being stopped twice in a week, this officer also allowed me go, again having learnt more about bats than he probably wanted to.

