

Bat Trapping & Radio Tracking (ALBST)

Improving ecological decision making

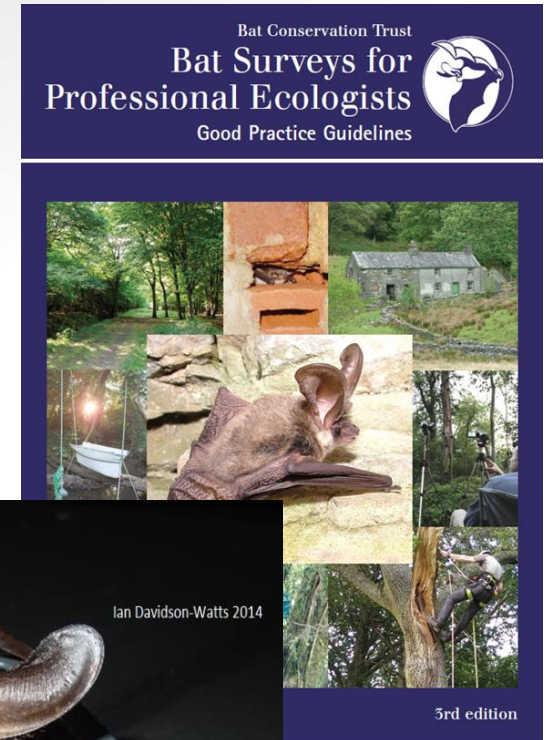
Ian Davidson-Watts

Tree roosting bats are challenging!



Limitations of traditional survey techniques

- Fission/fusion-Very low encounter rates with tree roosts (Andrews 2015)- bats emerge when too dark to see
- IR/thermal not standard practice
- No confidence in negative results (Collins, 2016) for trees
- Limited pool of experienced/licensed surveyors
- Development decisions and mitigation potentially less informed – is maintenance of favourable conservation status compromised?



Data quality - current situation?

Common reporting issues

'I thought it could have been
Natterer's'
= confirmed Natterer's

'It may have emerged from the tree,
observed in the canopy flying around'
= confirmed roost

'We had a count of 15-20 bats'
= it is a maternity roost

'Bat left the roost but didn't see the
emergence'

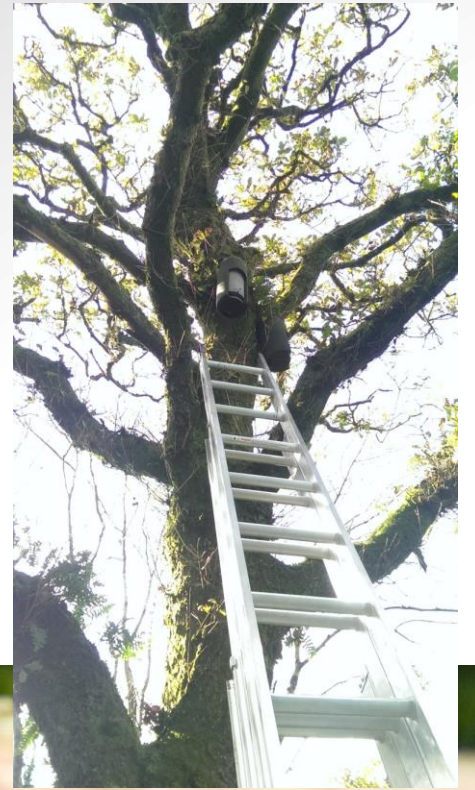


The use of ALBST to support better decision making

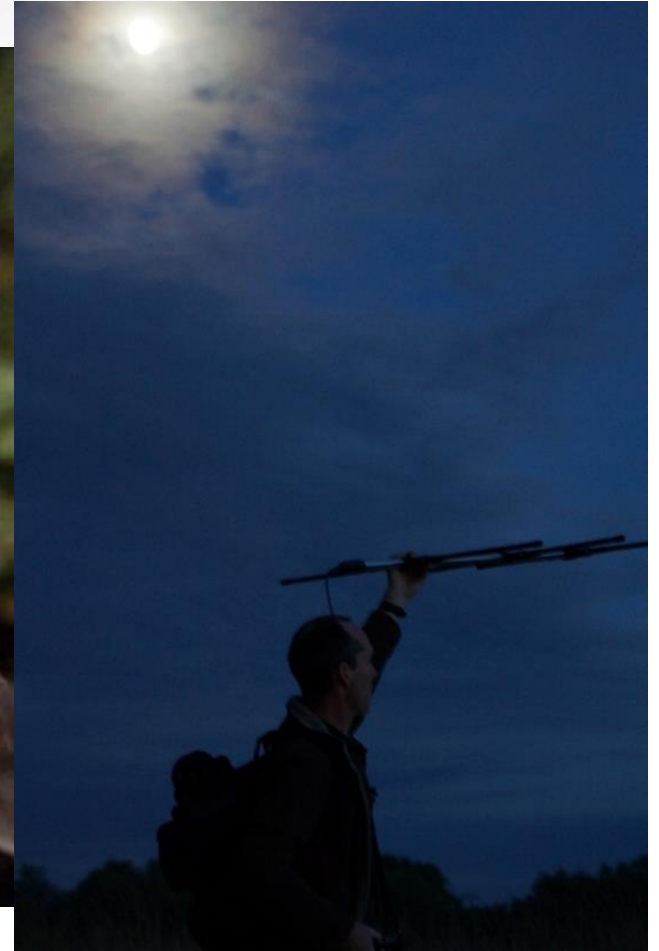


Approach

- A combined data set based on advanced & traditional survey techniques has better informed development, mitigation and licensing decisions
- Applicable to larger scale projects
- Taking a whole population/habitat approach
- Value for money?



Trapping and radio tracking

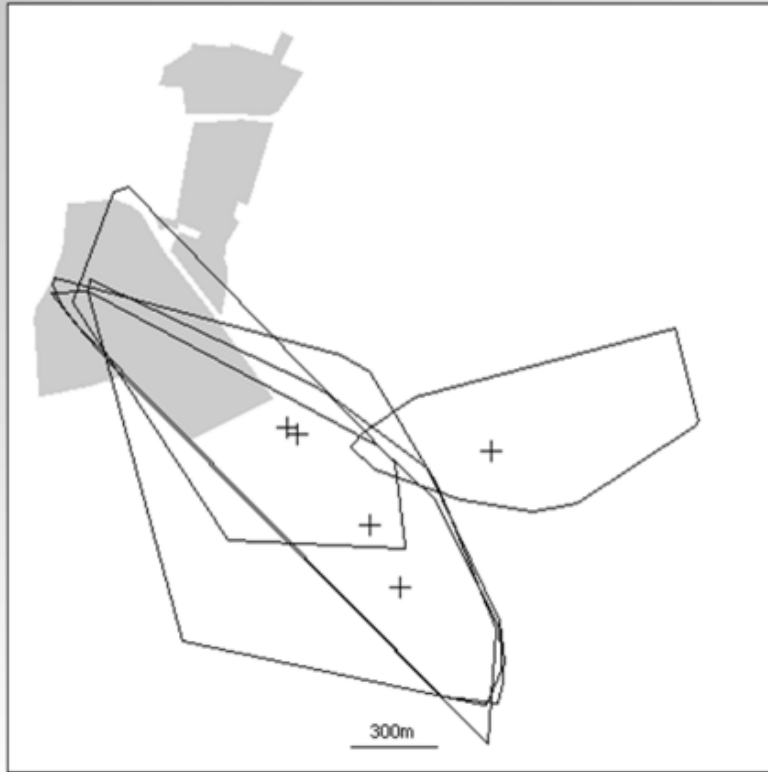


Roost finding and emergence surveys



Home ranges

Use of the proposed development site



ALBST Data to inform better decision making

- Species
- Sex
- Breeding status
- Roost locations affected
- Roost locations not directly affected – Context
- Core areas and commuting routes – depending on impact
- Licensing - Equivalent to roost characterisation

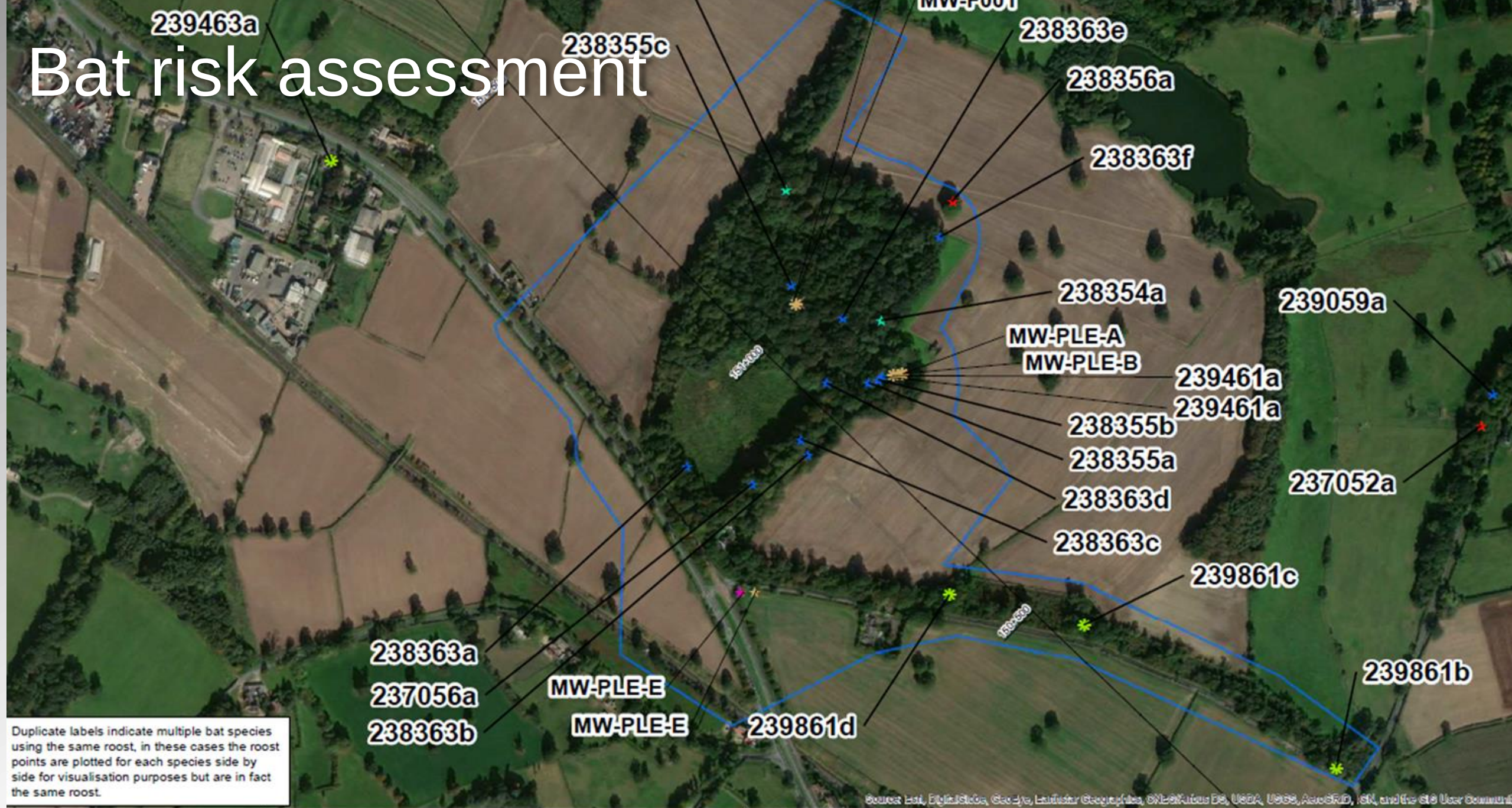


Interpreting ALBST data

- Consideration of woodland bat ecology
- Multiple tree roosts- fission/fusion
- What is the breeding site at a landscape scale?
- Individual trees less important than the woodland(s)?
- Does detailed data on individual bats provide a good predictor of the use of the site/area?
- Mixed use of buildings and trees



Bat risk assessment



Duplicate labels indicate multiple bat species using the same roost, in these cases the roost points are plotted for each species side by side for visualisation purposes but are in fact the same roost.

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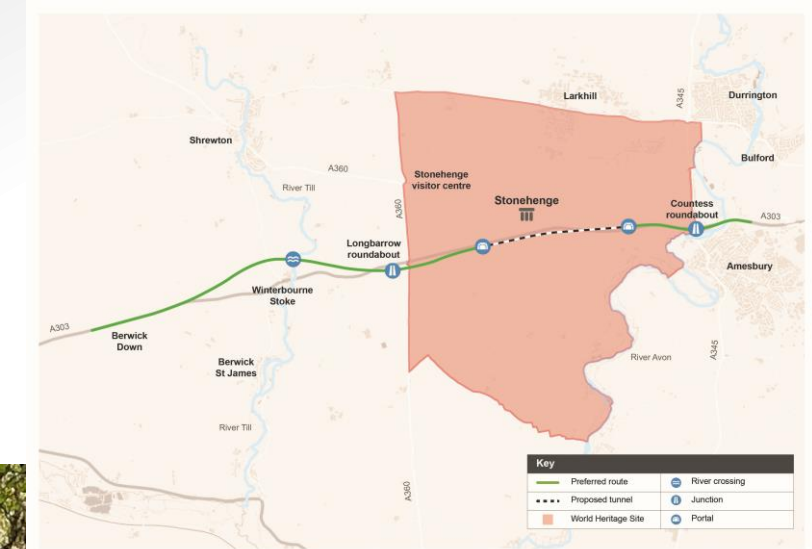
Legend	
RoostType	Bat Species
• Maternity	• M. daubentonii

Scale at A3: 1:5,000



ALBST to inform decisions and mitigation licences

- A303 route selection avoiding core foraging areas of barbastelle
- A358 route selection avoiding maternity roost woodland for Bechstein's bat
- Data used to inform tree/woodland removal licence applications infrastructure and ongoing disturbance from construction.
- Habitat approach has ensured found 90+ further roosts and over 100+ bats of 8 species that have been managed and mitigated during clearance activities so far when standard surveys found no or limited roosts in single trees



Data used to.....

- Time tree felling/works
- Ensure all PRFs were searched prior to felling
- Identify and replace key connective features
- Consider the placement/development of short, medium and long term mitigation
- Establish appropriate monitoring



Benefits

- Better quality data- better decisions
- Avoidance of impacts- spatial and temporal
- Targeted mitigation
- More cost effective at scale
- Other good science and collaboration – DNA studies/emergence effectiveness/data for bat conservation generally



Disadvantages

- Limited skill set (to do well)
- Bat welfare implications – proportionality test
- Cost for small projects

