

Scotland's Rural College

Bat emergence and weather conditions in Central Scotland

Smillie, Chris

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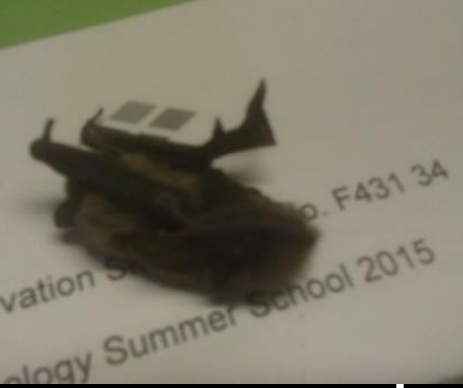
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Bat emergence and weather conditions in Central Scotland

Daniel Howie & Dr Chris Smillie
Scotland's Rural College

Slack and Tinsley (2015)

Bat activity ends at 6°C

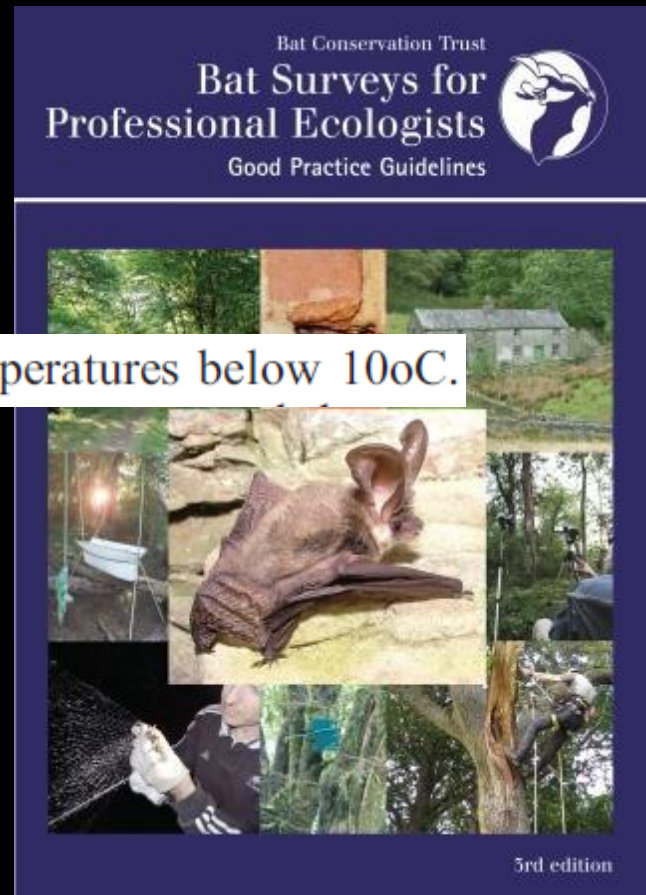
Wind an important factor

avoid very heavy rain, strong winds, mists and dusk temperatures below 10°C.

Abiotic factors:
Max/min temperature; Wind strength; Cloud cover; Precipitation



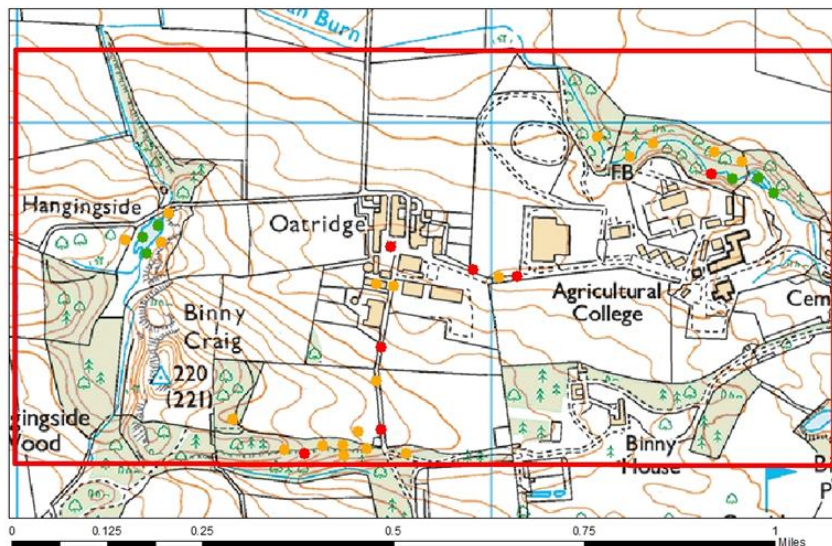
- EuroBats Publication Series 5: Guidelines for Surveillance and Monitoring of European Bats
- Bat Conservation Trust: Good Practice Guidelines
- JNCC Bat Workers Manual



- The research was carried out at Oatridge Campus, Scotland's Rural College
- Habitats include rocky and rolling hills, flat agricultural land, conifer/broadleaved woodland and both running and still water



Bat Distribution at Oatridge

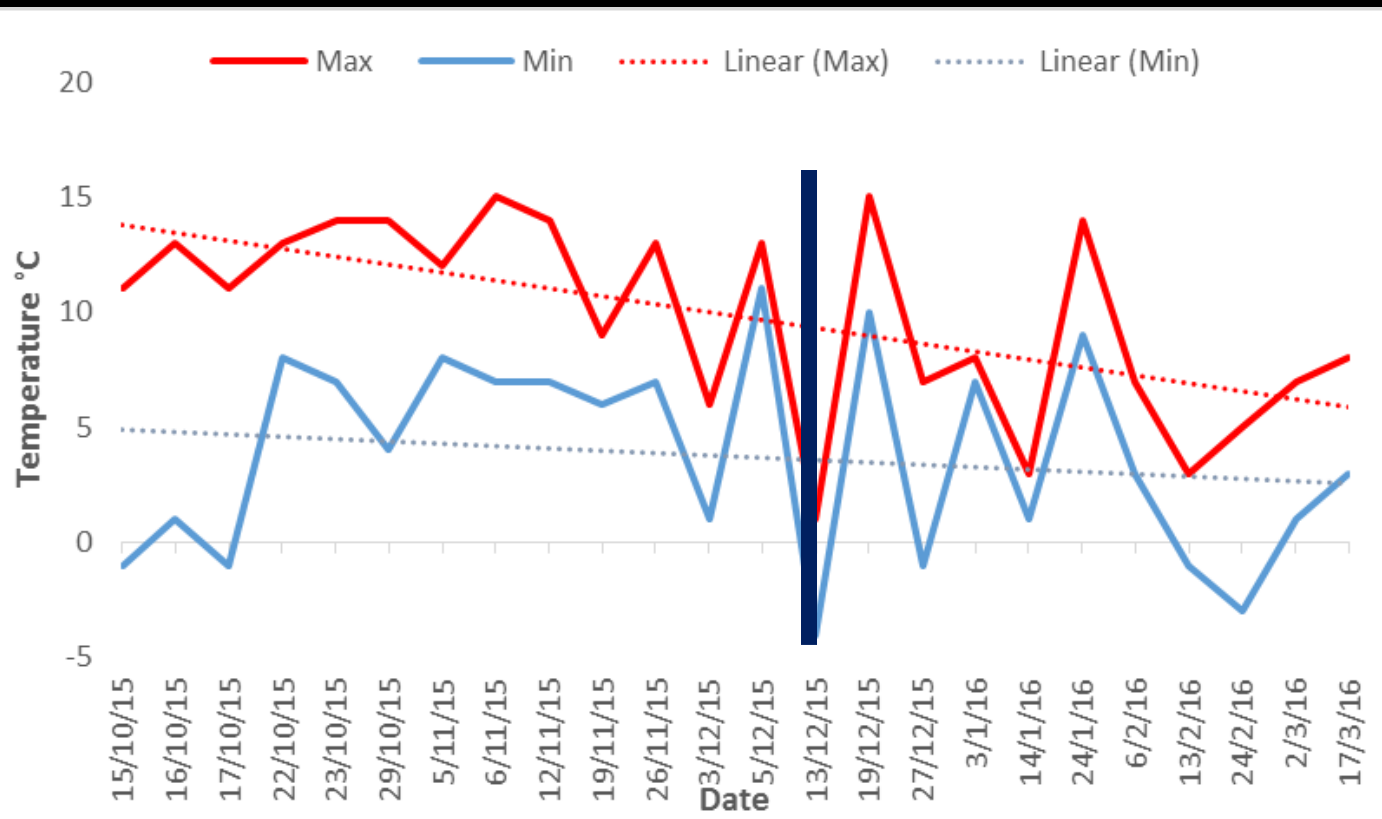


Legend

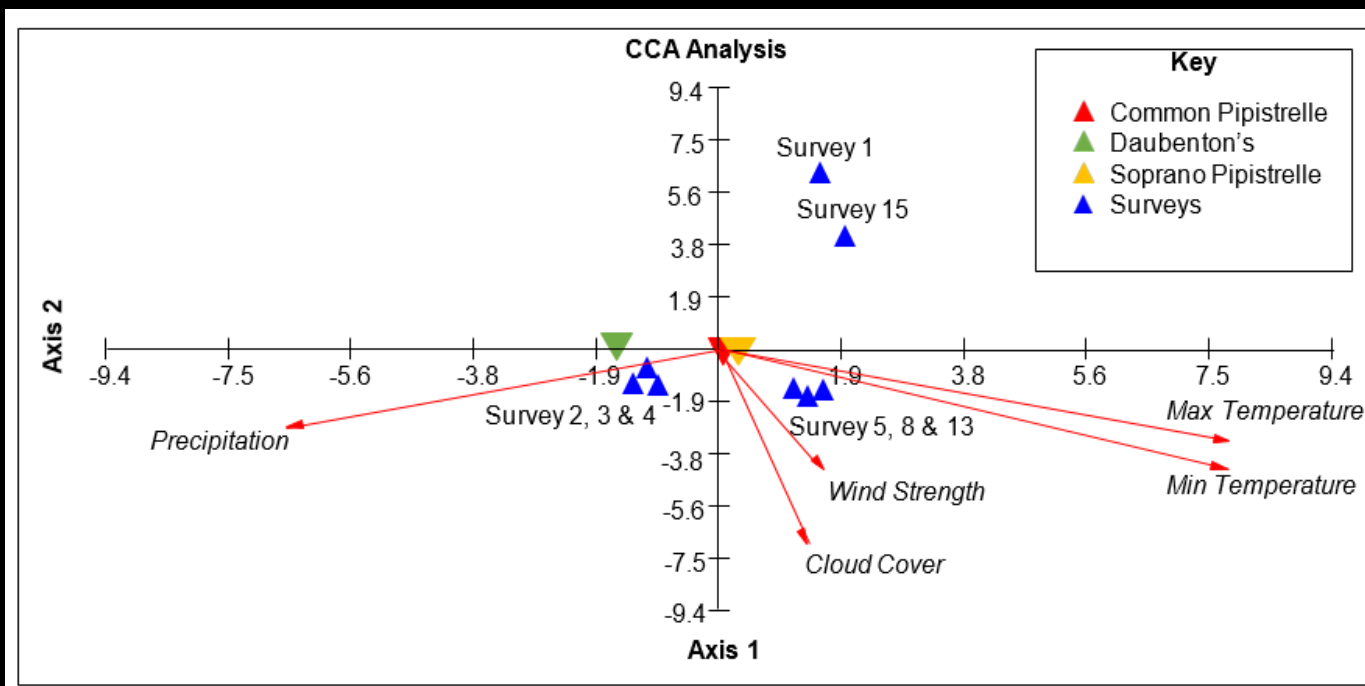
- *Myotis daubentonii*
- *Pipistrellus pipistrellus*
- *Pipistrellus pygmaeus*
- Study Area

○ From the 13th December 2015, bat activity ceased

- Bat activity was not recorded below 11°C
- Bats were still recorded at below freezing temperatures



- A canonical correspondence chart was constructed
 - The x-axis corresponds with the most important factor
 - Positively with temperature/negative with precipitation
 - Bat presence is not significantly aligned with any variable
 - y-axis suggests wind strength is also be a factor
 - Bat presence is variable according to a variety of weather conditions





Conclusions

- The lowest maximum temperature in which bats were recorded was 11°C
 - Corresponds with BCT Guidance
 - Clashes with Slack and Tinsley (2015)
 - If temperatures are high enough for prey, bats will emerge
- Minimum daily temperatures of -1°C did not have an effect on bat activity
 - Presence only. No measurement of duration of activity
- Wind decreased foraging in non-woodland sites
 - Agreement with Slack and Tinsley (2015) windfarm study
- Precipitation also influenced bat activity
 - 2015/16 was Scotland's wettest year in since records began