



Recording light levels at NBMP colony counts

Information about the lux levels at which bats emerge is not known for most bat species in Britain, with emergence more commonly being expressed as minutes after sunset. Using a measure of lux is a more robust method that avoids the variables inherent in recording time after sunset, such as the location of the roost (i.e. amount of tree cover etc).

BCT are aware that a growing number of bat workers have access to light meters that measure lux levels and for those NBMP volunteers carrying out colony counts, we would be most grateful if you could submit any measurements as part of your records. In future years we would plan to incorporate the option to include this information on the main recording sheet, but for this year we have produced a brief record sheet to fit that purpose.

What to record

Site Code	Site Name/Address	Species	Date	Lux level recorded
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See over for recording form.

How to measure it

We would recommend that:

- The reading is taken when the main body of bats start to emerge rather than the odd bat that emerges earlier than the rest.
- Select the brightest patch of ground within 1 linear metre from the emergence hole but on the ground and take a measurement with the lux meter oriented horizontally (parallel to the ground) taking care that the operator does not shade the instrument.
- Ensure that if there is a range key on the light meter this is set to the appropriate scale. Light meters can be used in a variety of light intensities and it is generally only the most sensitive setting that will be suitable for readings around dusk.
- Light meters go off calibration relatively easily and the instrument should ideally be calibrated once a year and, when not in use, should be stored in a dark location with the cap on.

Information on the parameters of a suitable light meter

For those of you that have not got access to a light meter but who may wish to consider using one, here are some tips for parameters to look out for that make the unit suitable for use in bat work.

- A crucial element is that the meter has been calibrated for human eye response, the so-called V lambda curve. All lighting industry units are based on this.
- Ideally the sensor itself should have a little dome on it rather than be perfectly flat. The advantage of this is that the sensor will not have to be perfectly horizontal when taking accurate readings. If it is of the flat sort the user will have to take care to carefully orient the instrument when taking readings.
- An instrument with the sensor on a cable means that the user can stand away from the instrument whilst taking readings, thereby not affecting the results unduly.
- Bear in mind that the brightness of a full moon is around 0.27 lux and of a perfect starry night on a new moon is around 0.001 lux. We believe that most bat emergence is from around 1 lux for late emerging species to 14 lux for those that emerge earlier. So ensure that the meter is sensitive at these low levels.

