Bat Conservation Trust

Statement on the impact and design of artificial light on bats:

Artificial night lighting is disturbing to many bat species, including some of our rarest and most vulnerable bat species. Some fast-flying bats, such as common and soprano pipistrelle bats, are more tolerant of light and feed on the insect congregations around street lamps. However, this exposes the bats to predation. For the bats that are repelled by light such as horseshoe bats and brown long-eared bats, insect food becomes scarcer and more difficult to find and hunt.

We know that some bat species will not cross lines of light, such as street lighting. The light acts as a barrier, disrupting flight paths and fragmenting and restricting habitats. In addition, lighting close to roost access points disturb bats within a roost, delay emergence time and may result in the abandonment of a roost.

Smarter lighting, rather than less lighting, is key to mitigating the effects of light pollution. Light should only be erected where it is needed, illuminated during the time period it will be used, and at the levels that enhance visibility.

Mitigation must be guided by an understanding of the particular species that might be affected. For example, some bat species may be more sensitive than others.

Design recommendations for wildlife-friendly lighting include:

1. Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. Use only the minimum amount of light needed for safety. There are published standards for most lighting tasks, adherence to which will help minimise upward reflected light.
2. Eliminate any bare bulbs and any light pointing upwards. The spread of light should be kept near to or below the horizontal.
3. Use narrow spectrum bulbs to lower the range of species affected by lighting.
4. Use light sources that emit minimal ultra-violet light. Insects are attracted to light sources that emit ultra-violet radiation.
5. Reduce light-spill so that light reaches only areas needing illumination. Shielding or cutting light can be achieved through the design of the luminaire or with accessories, such as hoods, cowls, louvers and shields to direct the light.
6. Reduce the height of lighting columns. Light at a low level reduces ecological impact. However, higher mounting heights allow lower main beam angles, which can assist in reducing glare.
7. For pedestrian lighting, use low level lighting that is directional as possible and below 3 lux at ground level.
8. Use embedded road lights to illuminate the roadway and light only high-risk stretches of roads, such as crossings and merges, allowing headlights to take up the slack at other times.
9. Limit the times that lights are on to provide some dark periods for wildlife.
10. Use lighting design computer programs and professional lighting designers to predict where light spill will occur.

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