

Consequences of growing brightness (luminosity)

More and more cities are transforming public spaces into places of residence, resulting in a growing usage of artificial light for night time visibility. Over the past decades, the brightness level of major cities has increased tremendously. Higher brightness levels create a positive image, and people tend to equate brightness to safety. However, the nature suffers with a huge loss of biodiversity.

In an urban environment, insects actively congregate around the light sources and die of exhaustion, become an easy catch, starve to death, or burn inside a luminaire. Hence, light pollution harm insects by reducing their total biomass and population size, and by changing the relative composition of the population, all of which can extend the negative influence further up the food chain.

Furthermore, migratory fish and birds can become confused by artificial lighting, resulting in excessive loss of energy and spatial impediments to migration, resulting in reduced migratory success. Daytime feeders extend their activity under illumination, putting an increased predation pressure on nocturnal species.

Humans are not an exception when it comes to suffering from light pollution. Artificial light at night affects our melatonin production and can lead to symptoms like insomnia.



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Where, when, and how much light?

It is important to develop lighting concepts with a consideration of biodiversity to avoid harmful lighting concepts (e.g. sky and façade lighting) that can harm the surrounding nature. The amount of light depends on the urban environment.

In designing lighting for festivities and advertising placards with LED, be careful in making decisions about the place and time of the light shows, in order to not disturb nearby living organisms.

- Only provide the needed amount of artificial light, in accordance with the surrounding and the vulnerability of living organisms nearby.
- Use shielded luminaires.
- Provide temporary lighting by precisely controlling where and when the light is needed.
- Switch off the artificial lights at times of low traffic and during critical periods for light-sensitive organisms (e.g. migration or hunting time).

Источники:

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- 3 Fisher, Luci (2016): Understanding light pollution. In: Cities and lighting. The LUCI network magazine. No. 8–2016; pp 14–19.
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