

## 3.4: Effects of Light Pollution

### Effects of Light Pollution

Government and private studies show that over lighting as well as poorly-directed lighting actually *decreases* safety. According to the International Dark-Sky Association research and references:

- There is no clear scientific evidence that increased outdoor lighting deters crime.
- It makes us feel safer, but bad outdoor lighting can actually reduce safety.
- A study by the city of Chicago actually found a correlation between increased crime and brightly lit alleyways. In fact, glare from bright lights creates shadows where criminals can hide.
- Some crimes, like vandalism and graffiti, thrive on lighting.

*Many species (including humans) need darkness to survive and thrive.* – American Medical Association

What about the effects light pollution has on life? It might surprise you, but a number of studies have been done on this question. Consider the fact that significant artificial light is being added to the environment. Nocturnal animals sleep during the day and are active at night. This significant artificial lighting disrupts their nighttime environment. There are numerous insects that are fatally drawn to light. This might seem good at the surface, but a reduction in insect populations have a negative impact on species that rely on these insects for food or as pollinators. Migratory birds have been significantly impacted, mistiming migration and direction of travel. A study published October 18, 2017 in the *Proceedings of the National Academy of Sciences* looked at the effects of an iconic bright light source during a specific seven-day period over seven years. The study estimated that about 1.1 million birds were influenced by the specific light source during the study period; that is 49 nights total.

An issue Floridians have become sensitive to for a number of years are sea turtle hatchlings. Turtles come ashore at specific times to lay their eggs. When the hatchlings are ready to return to the sea for safety, artificial lights confuse them and leave them stranded on land. In 2013 the Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission undertook a study to identify coastal lighting that could threaten the nesting habitats of endangered sea turtles.



Light pollution also has an effect on life, from plants to nesting sea turtles [ [“Turtle golfina escobilla...”](#) by [Claudio Giovenzana](#) is licensed under [CC BY-SA 3.0](#) ]

There are many other examples of the negative effects of light pollution, from the Great Barrier Reef corals to trees, flowers, and grasses. The lights alter biological clocks of many animals, plants, and yes, even humans.

*Glare from nighttime lighting can create hazards ranging from discomfort to frank visual disability.* – American Medical Association

Humans have specific day-night rhythms, a circadian rhythm, or our biological clock. There are many reports of people not getting a deep sleep, and it is not always the bed or pillow that is the cause.

Then there are the costs of all this lighting. U.S. Department of Energy 2011 data from 2011 estimates that in the United States alone, about \$3 billion each year worth of energy is being lost to skyglow, alone. This comes from the fact that 35&percnt; of light is being wasted by unshielded and poorly-aligned outdoor lighting. This is real money out of everyone’s pocket. <sup>(1)</sup>

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