

Light Pollution

There's a form of pollution that isn't always presented as a serious hazard, but in fact it may be having an increasingly adverse effect on our lives and the planet. It is light pollution.

We've been hearing more about how light in our bedrooms at night could be affecting our quality of sleep and our health. Excess lighting may be a silent threat to our health. It affects our circadian rhythms, which suppresses the hormone melatonin. This lack of Melatonin has been linked to higher rates of breast and prostate cancer. The disruption of circadian rhythms is also linked to sleep disorders, depression and psychological problems, obesity and perhaps diabetes.

A sad fact about light pollution, according to the 2016 groundbreaking study "[World Atlas of Artificial Night Sky Brightness](#)," 80 percent of the world's population lives under skyglow. Under skyglow, the Milky Way is not visible, and usually only a few stars or a planet can be seen on a clear night. In the United States and Europe 99 percent of the public can't experience a natural night! And 88% of people that live in the US can't see the Milky Way.

One scientist laments: "Increasingly, urban youth only see constellations on computer screens or in planetariums. The lack of the night sky may therefore affect their sense of the scale of the universe and their place in it."

Light Pollution also messes with wildlife. In the last decade, scientists have begun to realize that artificial lighting at night affects animals and ecosystems in all sorts of unexpected ways.

You may have heard about how Sea turtles get confused by the lighting from coastal cities and lose their ability to navigate in the ocean. Birds use the bright stars in the sky to determine the route for the next day, and when the city lights interfere with their view, birds

can become confused and disoriented. World Migratory Bird Day explains that light pollution can affect the flight patterns of birds, rendering their usual migration paths impossible to follow. City birds are also finding it very difficult to sleep with all of the bright lights, and some birds have become uncharacteristically active at night. Unfortunately, light pollution also causes some birds to succumb to deadly collisions with buildings and other objects in the sky that may be difficult to see when "blinded by the light".

Some scientists **even suspect** that artificial lighting at night makes it harder for fireflies to find each other and mate.

Plants are also affected by light pollution. Even light that doesn't affect photosynthesis can have an effect on plants. For instance, trees that are surrounded by streetlights often hold on to their leaves longer in the fall and break bud earlier in the spring, compromising the health of the tree. Even green plants need periods of darkness

The components of light pollution are:

- Glare – excessive brightness that causes visual discomfort
- Skyglow – brightening of the night sky over inhabited areas
- Light trespass – light falling where it is not intended or needed
- Clutter – bright, confusing and excessive groupings of light sources

Here are some things we as individuals can do:

Outdoor lighting is only necessary when you're outside or as part of a crime-prevention strategy. Studies have shown that full time lighting is not a necessarily a crime deterrent.

Motion sensors, timers and dimmers are all great ways to minimize excess lighting.

The types of light fixtures you install around the exterior of your home greatly affect the amount of light pollution you generate. Shielded fixtures prevent light from spreading upward, where it isn't needed, and lower wattage bulbs provide all the necessary light.

A good rule of thumb is no light should ever be emitted above the light source's horizontal plane.

LED lights, while saving energy, are making light pollution worse! A global study led by Christopher Kyba from the GFZ German Research Centre for Geoscience, found that the amount of artificial light coming from Earth's surface at night has increased in radiance and extent by 2 percent every year for the past four years—driven by the rapid adoption of bright LEDs and development. So, while we may be saving energy we need to make sure we are not using more light.

Be a Good Neighbor. Ensure that your lighting doesn't infringe on your neighbor's enjoyment of the dark, and don't be afraid to speak up if you're the victim of bothersome light trespass. Broach the subject gently, though; suggesting a more efficient fixture might enlighten him. If not, mention that an alternative lighting fixture could not only help you, but also his utility bill.

Light pollution is a huge waste of energy. Do you know that a 100 Watt bulb, burning continuously for 1 year will take a ½ ton of coal to produce the energy? It is estimated that 1/3 of all lighting in the US is wasted, at an annual cost of 30 million barrels of oil and 8 tons of coal, or 4 billion dollars!

Much of this information comes from an organization Dark Sky that was formed in 1982. They have done amazing work world wide and have helped to designate areas around the world as Dark Sky parks and reserves. There are now more than a dozen Dark Sky reserves with the first one in the US just designated in Idaho last January.

You can learn a lot more about their work on their website at DarkSky.org