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Saving the Night Sky

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How many times have you seen an empty skyscraper late at night, fully lit, with no actual employees inside? What about the abundance of bright empty parking lots, blinding streetsigns, blinking traffic lights on desolate roads, and lonely streetlamps? Or the glaring signs that shine into our windows and keep us up at night?

“People are a lot like insects. We’re attracted to bright light.” This is what Bob Gent, President for International Dark-Sky Association’s Board of Directors, told me during a recent phone conversation. The problem is, insects tend to die when exposed to too much light, he laments.

Light pollution affects the entire globe. It wastes energy, upsets ecosystems, and causes adverse health effects—and is especially bad in areas where there are no lighting ordinances or zoning controls. The [International Dark-Sky Association](#) (IDA), based in Tucson, Arizona, a nonprofit formed in 1988, wants to change all that. With more than 11,000 members in seventy countries, their goal is simple: to preserve and protect the night sky and our heritage of the night skies. Bob Gent, a volunteer for IDA for more than twelve years and the former president of the Astronomical League, cares about the loss of the night sky for many reasons—and he gave me some compelling evidence why I should, too.

Gent remarked that it’s an important part of human heritage to be able to gaze at the Milky Way. “The sky has been an inspiration to scientists, artists, and musicians, for thousands of years.” But slowly, we’ve been destroying the night sky. Urban sky glow blocks our view of the universe, and is a particular challenge to astronomers or anyone who likes to stargaze.

What with the high cost of energy—and our already heavy reliance on importing fossil fuels like oil—why waste it? Light pollution statistics can be hard to quantify, but IDA claims that 30 percent of outdoor lighting is wasted. If lighting were redesigned, the U.S. could save thirty-eight million tons of carbon per year. Dr. David L. Crawford, Executive Director of IDA, writes, “We are faced with the peril that the only way future generations may be able to “see” the dark skies that our ancestors enjoyed is through a simulation on a computer screen, in a planetarium dome, or on television. Another consequence of poor lighting is wasted energy because much of this light is wasted light. In the U.S. alone, over \$1 billion a year is wasted to produce unused light, which is the major source of light pollution.”

Ecosystems are continually disturbed by light pollution. According to Gent, light can have devastating effects on the long distance migration of birds. [Fatal Light Awareness Program](#) (FLAP), a nonprofit based in Toronto, has been following bird migration, ever since an abundance of birds started dying while attempting to fly over cities. Birds fly at night, normally guided by the constellations and the moon. But light, glare, and glass causes birds to crash into buildings and die from head injuries or flap about and die from exhaustion. In 2005, New York City—with help from the National Audubon Society—adopted their first citywide program (aimed at high-profile buildings such as the Chrysler Building and others) to dim the skyline, especially during the peak fall and spring migratory seasons.

Light pollution may contribute to diseases such as breast cancer as well. At IDA's Annual General Meeting in 2006, Dr. David E. Blask of the Bassett Research Institute in Cooperstown, New York, talked about how light may affect your health, including the role melatonin may play in breast cancer. A low level of artificial lighting during the nighttime hours reduces the body's production of melatonin. Suppressed melatonin can promote the growth of breast tumors in women. Exterior stray light (light trespass) suppresses melatonin as well. Shift workers are especially at risk because their bodies' natural rhythms get confused. Blask contends that women working night shifts are at a 50 percent higher risk; and women with higher levels of melatonin (and especially those who sleep nine hours a night) have a decreased risk of developing breast cancer.

IDA is working to stop the effects of light pollution through raising awareness of these issues, educating consumers about the value of quality outdoor lighting, and working with governments to reduce threats to our view of the universe: namely radio frequency interference (RFI) and space debris. They encourage communities to use shielding, lighting curfews, and to aim light downward to control light pollution and its growth.

IDA is also teaming up with the [U.S. Green Building Council](#) (USGBC), an environmentally sustainable building certification organization. Their Leadership in Energy and Environmental Design (LEED) Green Building Rating System is the nation's national benchmark for green buildings. LEED projects use a checklist to gain points for LEED certification. IDA is encouraging USGBC to alter one of their LEED points: Light Pollution Reduction, Credit #8, which continues to be an *optional* point for certification. Case in point: of the 900 buildings achieving certification, only 51 percent have opted to reduce light pollution by using Credit #8. This is significant, given that buildings are some of the biggest users of fossil fuels.

So what can consumers do? IDA recommends the following:

- Use shielding light (light that is redirected downward toward the ground, so it doesn't illuminate the night sky)
- Use only the amount of light you really need (and reduce wattages to reduce glare)
- Turn off lights not in use
- Use the most efficient lighting (CFLs instead of incandescents) What else can you do to stop light pollution? Become a member of IDA or organizations like it. Study the issues and talk to your local town council. IDA will provide the information sheets and powerpoint presentations to help you do it.


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