



Great Lakes~Dark Skies

*Effects of Artificial Light at Night in
Coastal Areas*

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Headlands International Dark Sky Park



Over 70 lighthouses dot the 1600+ miles of Lake Michigan shoreline (including islands)

12 million people populate over 60 cities along these shores



Chicago

Indianapolis

Detroit

Toronto

Lights at Night: Video from International Space Station, February 2012

The International Dark Sky Association estimates that least 30 percent of all outdoor lighting in the U.S. alone is wasted, mostly by lights that aren't shielded. That adds up to \$3.3 billion and the release of 21 million tons of carbon dioxide per year! To offset all that carbon dioxide, we'd have to plant 875 million trees annually.



With 12 million people populating the 60 cities
on the shores of Lake Michigan,
we are potentially contributing \$124M to that waste of light,
which equals about 2.5M barrels of oil,
or 2.9M metric tons of greenhouse gasses.

We know that several invader species such as lampreys and zebra mussels, among others, are linked to major changes in water clarity and fertility, changing Lake Michigan's ecosystem, and threatening the vitality of fish populations.

In addition to greater sunlight penetrating to greater depths in the lake, is it possible that an increasing amount of artificial light at night is also contributing to this issue?

Artificial light at night disrupts the seasonal cycle of trees



Plants, like all living creatures, depend on the natural cycle of day and night. Artificial light at night can throw off a plant's response to the change of seasons. Prolonged exposure to artificial light prevents many trees from adjusting to seasonal variations. Notice how the leaves of this tree have their fall colors, except for those directly under the streetlight (upper right). This, in turn, has implications for the wildlife that depend on trees for their natural habitat. *Could this be happening beneath the water as well?*

We know that twice a year, around five million birds, representing about 250 species, fly through Chicago.

Because of its location on migratory routes, Chicago's skyline,
along the shores of Lake Michigan,
kills more birds than any other skyline in the country.
Navigating by the stars and hungry after flights from as far away as Peru,
the birds arrive on Lake Michigan's shoreline in search of food.
There, the twinkling city and its canyons become a death trap.



Exposure to artificial light at night puts your health at risk

Humans evolved with the rhythms of the natural light-dark cycle of day and night. Due to artificial light, most of us no longer experience truly dark nights. Like most life on Earth, we adhere to a circadian rhythm — our biological clock. Natural light is an important cue that helps us set our clock to Earth's 24-hour rotation period.

Exposure to artificial light at night disrupts this process, increasing our risks for cancers and other potentially deadly diseases. Blue-rich light at night is particularly harmful. Unfortunately, most LEDs used for outdoor lighting, computer screens, TVs, and other electronic displays emit abundant blue light.

According to a 2012 report of the American Medical Association, “Glare from nighttime lighting can create hazards ranging from discomfort to frank visual disability.”

There is no clear scientific evidence that increased outdoor lighting deters crimes. It may make us feel safer, but has not been shown to make us safer.

Outdoor lighting is intended to enhance safety and security at night, but too much lighting can actually have the opposite effect. Visibility should always be the goal. Glare from bright, unshielded lights actually decreases safety because it shines into our eyes and constricts our pupils. This can not only be blinding, it also makes it more difficult for our eyes to adjust to low-light conditions.



What can be done?

Request night-sky friendly fixtures from retailers and manufacturers

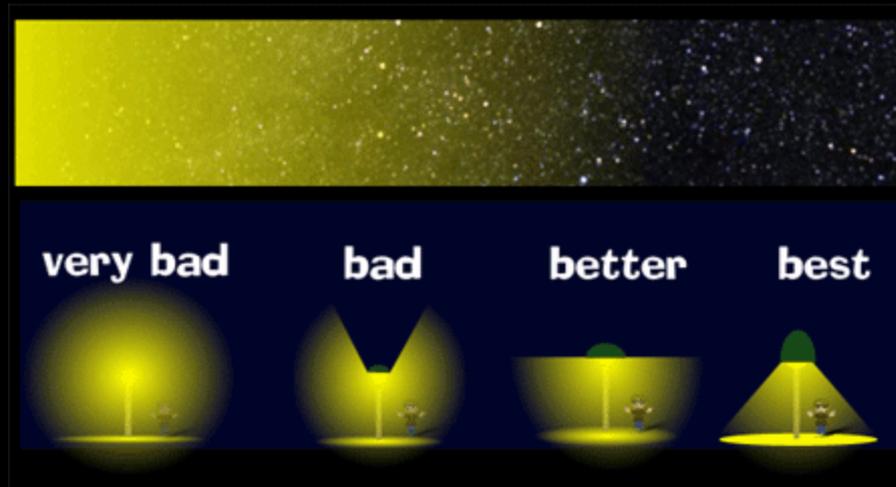
Join the International Dark Sky Association and/or start a local IDA chapter

Identify and designate protected night sky areas in your community

Host events timed to celestial phenomenon and bird migrations

Support outdoor lighting resolutions at the township and county level

Turn off the lights!



www.darksky.org

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