



Life on Earth needs both day and night.

For billions of years, life has evolved with Earth's predictable rhythm of light and dark controlled by the length of the day. In fact, it's encoded in the DNA of all plants and animals. Humans have radically disrupted this cycle by lighting up the night.

It used to be that when the sun went down, celestial sources like the moon, stars, planets and the Milky Way lit the sky. Life learned to operate under the glow of these objects. For many animals, the natural night sky signals when to eat, sleep, hunt, migrate and even when to reproduce. It is estimated that half of all species on Earth start their "daily" activities at sundown.

"Near cities, cloudy skies are now hundreds, or even thousands of times brighter than they were 200 years ago. We are only beginning to learn what a drastic effect this has had on nocturnal ecology."

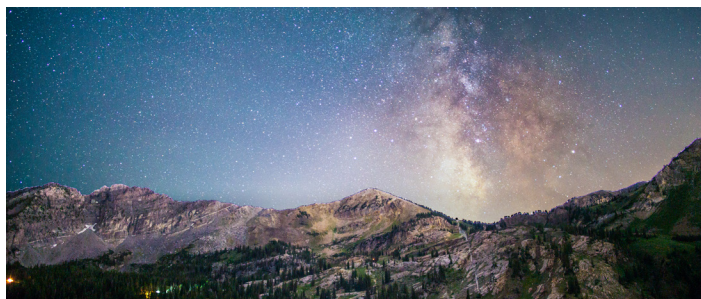
— Christopher Kyba, light pollution research scientist

WHY DARK SKIES?

The need to protect and restore the natural nighttime environment is more urgent than ever. Light pollution, defined as light where it is not wanted or needed, affects our health, the environment, wildlife, and our ability to find awe in the natural night. Research indicates that light pollution is increasing at a global average rate of two percent per year.

ABOUT IDA

The International Dark-Sky Association, a 501(c)(3) nonprofit organization based in Tucson, Arizona, is dedicated to preserving and protecting the natural nighttime environment.



HELP US PROTECT THE NIGHT

Our work is made possible by support from IDA members. Become a member and support our work in protecting the natural nighttime environment. Please join us today!

**DARK
SKY.
ORG**

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Light Pollution Can Harm Wildlife



INTERNATIONAL DARK-SKY ASSOCIATION

ARTIFICIAL LIGHTS DISRUPT THE WORLD'S ECOSYSTEMS

Plants and animals depend on Earth's daily cycle of light and dark to govern life-sustaining behaviors such as reproduction, nourishment, sleep and protection from predators. Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures, including amphibians, birds, mammals, invertebrates, and plants.

CORAL

More than 130 different species of coral on the Great Barrier Reef spawn new life by moonlight. Bright urban lights can mask the moon's phases, throwing the corals' biological clocks out of sync.



SEA TURTLES

Sea turtles live in the ocean but hatch at night on the beach. Hatchlings find the sea by detecting the bright horizon over the ocean. Artificial lights draw them away from the ocean. In Florida alone, millions of hatchlings die this way every year.



FROGS AND TOADS

Glare from artificial lights can impact wetland habitats that are home to amphibians, such as frogs and toads, whose nighttime croaking is part of the breeding ritual. Artificial lights disrupt this nocturnal activity and interfere with reproduction, which reduces populations.



BIRDS

Birds that migrate or hunt at night navigate by moonlight and starlight. Artificial lights can cause them to wander off course towards dangerous nighttime landscapes of cities. Every year millions of birds die colliding with needlessly illuminated buildings and towers.



SAFE LIGHTING SOLUTIONS

- Use only fully shielded, IDA dark sky certified fixtures for all outdoor lighting, so lights shine down, not up.
- Use only the right amount of light needed. Too much light is wasteful and harms wildlife.
- Install timers and dimmer switches and turn off lights when not in use. If you must have security lighting, use motion sensors.
- Turn off lights in office buildings and homes when not in use.
- Use only lighting with a color temperature of 3000K and below to reduce the blue (cool) light that is more harmful to many animal species.
- Work with your neighbors and local governments to ensure outdoor lighting isn't harming the wildlife in your area.

Other Wildlife Harmed by Light Pollution

We are only just beginning to understand the negative effects of artificial light at night on wildlife. Every year new research adds even more wildlife to the list of animals affected by too much light, including:

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|------------------|-----------------------|-------------|
| • Hummingbirds | • Monarch butterflies | • Bats |
| • Wallabies | • Atlantic salmon | • Owls |
| • Little penguin | • Zooplankton | • Mice |
| • Zebrafish | • European perch | • Insects |
| • Sweat bees | • Songbirds | • Geckos |
| • Seabirds | • Peahens | • Fireflies |



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