

# 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.



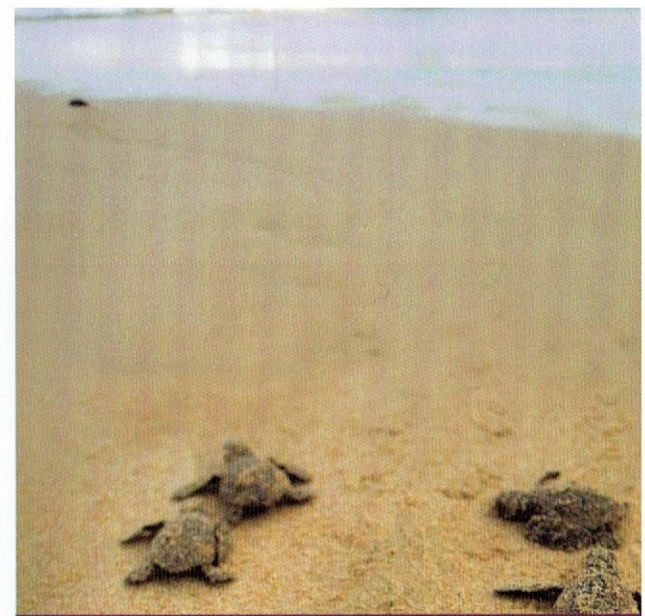
## FROGS AND TOADS

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:

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



**\*\* UPDATE:** IDA recommends maximum of 2200 Kelvin; or use amber or "Bug" lights to reduce impacts of blue light waves from LED light sources