



LIGHT POLLUTION



Light from a nearby town illuminates the night sky in Jasper, GA

WHAT IS LIGHT POLLUTION?

Light pollution is a spillover effect from urbanization and poses several threats to nocturnal animals that have evolved to rely on the cover of darkness for nourishment, protection, and/or reproduction.

The effects of artificial light are negatively affecting nocturnal reptiles, mammals, and insects leading to disruptions in food chains and ecosystem function.

Luckily, there are actions we can take to decrease our own output of artificial light. And, we can encourage others, including city officials, building managers, and homeowners associations to do the same.

NOCTURNAL POLLINATION

While much research has been focused on pollinators that are active during the day (diurnal), critical pollination services are provided by nocturnal animals such as bats, some bees, beetles, and most importantly, moths.

While moth pollination has been less studied than bee pollination, research completed in the last few decades shows that moth pollination is incredibly important and that moths might be better pollinators of some plants than bees.

Moths also travel further distances than bees to find food, leading researchers to believe that moths are important for spreading pollen across large distances.



Yucca moths (Tegeticula yuccasella) are critical to the survival of the Yucca

HOW ARTIFICIAL LIGHT HURTS POLLINATORS

Among pollinators, moths are most at risk from the effects of light pollution, as most moth species are nocturnal and use darkness to feed, mate, and avoid predation. *Light pollution can impact nocturnal pollinators in the following ways:*

- Disorienting and confusing them, causing less efficient pollination and “flight to light”, where moths will fly towards or circle artificial light sources and eventually land.
- Resulting in contact with hot surfaces from artificial lighting can kill or injure moths.
- Inhibiting the mating and reproductive process.

These negative effects from light pollution have serious repercussions for ecosystems and imperil certain moth species along with the plants they visit and pollinate. Without these specialist pollinators, ecosystems lose biodiversity and functionality and are less resilient to other threats like climate change and invasive species.

Sphinx moth feeding at night



Moths exhibiting “flight to light” behavior

HOW YOU CAN HELP

Despite the threats that light pollution poses to moths and their role in maintaining our ecosystems, there are several ways we can advocate for moths:

- Assess outdoor lighting at your home or apartment and do your best to turn off any unnecessary lights. Shading your windows at night is also a good idea.
- Install low-voltage lights (such as sodium-vapor bulbs) and motion detectors.
- Avoid outdoor LED lighting. Though more energy efficient, it is ironically more disruptive to moths than other options.
- Plant for diurnal and nocturnal pollinators alike! Moths tend to prefer fragrant flowers that are white or pale in coloration. Talk to your building manager or local officials about the importance of reducing light pollution.
- Reduce or eliminate the use of pesticides whenever possible and say no to bug zappers!

Reference our [eco-regional planting guides](#) and our [Find Your Roots](#) tool for ideas on native and non-native pollinator-friendly plants.