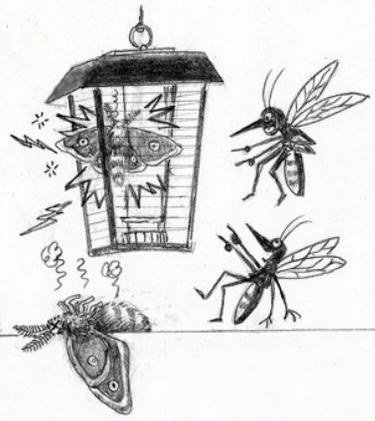


## BUG ZAPPERS:



Bug zappers are not effective at killing mosquitoes. Because biting insects are attracted to the carbon dioxide emitted by them rather than the light, they are

drawn to an area where humans may occur. However, bug zappers are an easy way to kill moths. Adult moths are attracted to the light. When moths try to get to the light, they fly through a harmless safety cage and into electrodes, which kill them.



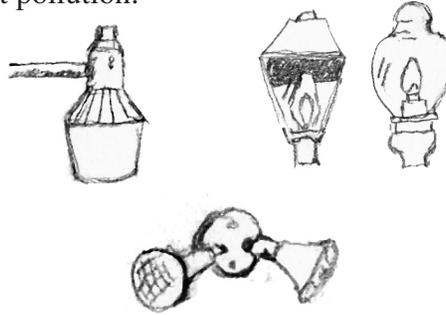
Baltimore Oriole eating tent worm caterpillar.

## ABOUT TENT WORM CATERPILLARS:

Although generally hated, tent worms are an important food source for birds. They will not kill your trees, if they are healthy.

## ACCEPTABLE LIGHTING VS UNACCEPTABLE LIGHTING:

Un-shielded lighting add more glare and light pollution:



Shielded lights add less glare and light pollution:



*Saving Birds*



*Thru Habitat*

Provided by Saving Birds Thru Habitat  
 5020 North Putnam Rd. • P.O. Box 288  
 Omena, Michigan 49674-0288  
 (231) 271-3738  
 Website: [www.savingbirds.org](http://www.savingbirds.org)

# Lights, Leaves, Bugs and Birds

## *Light Pollution and Wildlife*



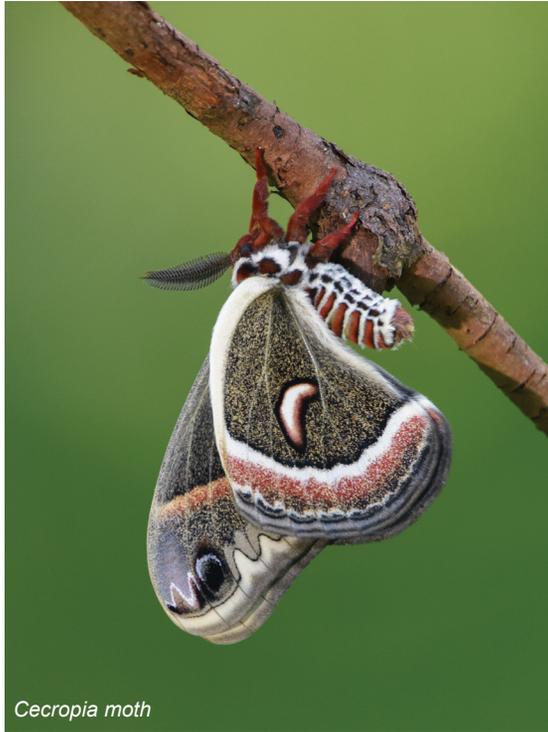
*Cecropia moth caterpillars*



*Great Crested Flycatcher with food for young.*

**Saving Birds Thru Habitat**

# LIGHT POLLUTION AND WILDLIFE



Until relatively recently in Earth's history, all life has relied on its predictable rhythm of day and night. Plants and animals have depended on Earth's daily cycle of light and dark to govern reproduction, finding food, sleep and protection from predators. But scientific evidence suggests that artificial light at night has negative, even deadly effects on many creatures, including amphibians, birds, mammals, insects and plants.

Artificial lights impact wetland habitats, home to amphibians, whose nighttime vocalizations are part of breeding rituals. Lights disrupt this activity, interfering with reproduction, thereby reducing populations of frogs and toads. Birds migrating at night use

celestial navigation to find their way. Artificial lighting may adversely impact their ability to find their way, or cause them to crash into windows in lighted buildings.

One significant effect regarding birds is that many insects – upon which birds depend - are drawn to light, which often creates a fatal attraction. Most songbirds require caterpillars to raise their young. There are about 12,000 types of North American moths, and about 825 butterfly species. Most moths are nocturnal and drawn to lights to their deaths, thereby reducing the essential caterpillar populations for nesting birds.

## HOW TO MITIGATE EFFECTS OF LIGHT POLLUTION:

- Learn to appreciate the role of insects in our natural world
- Use lights that are shielded so they direct light downward
- Light only what we need to light
- Use energy-efficient bulbs – only as bright as necessary
- Choose warm white light or yellow light bulbs
- Use motion detectors so lights are not always on.
- Choose yellow bulbs
- Replace mercury vapor lights with yellow LEDs
- Use coverings over windows with lights inside.



## LEAVES AND MOTHS:

Many butterfly and moth species spend the winter in fallen leaf litter. Luna moths, great spangled fritillaries, woolly bear caterpillars (Isabella tiger moths) and red-banded hair-streaks. Some species overwinter as eggs, others as pupae and some as adults. To help moth and butterfly caterpillars, do not rake your leaves.

