

Good evening, I am James Bubar, a former Planning Board representative to the Conservation Commission and a current member of two other Town organizations, I reside at 4 Old Piscataqua Road.



With me is John Gianforte Director UNH Observatory, Astronomer, and Extension Associate Professor/Space Science Education, Youth & Family State Specialist.

We are members of a small group of concerned citizens who are seeking to change our outdoor lighting impact townwide. In addition to John and me, the group consists of Emily Friedrichs, Diana Carroll, and Michael Carter.

We are here tonight to ask that you pass a motion to request the Town of Durham to release \$500 from unrestricted general funds towards the purchase of insect friendly light bulbs that will be given to residents on Durham Day, Farm Day and the Swap Shop as long as the supply of light bulbs last. We plan to purchase Yellow

LED Outside Bug Lights, A 19 E26 non-dimmable 4 Packs for \$11 each, pricing subject to change at the whims of tariff decisions.

I have attached a copy of the flyer that we intend to provide residents with when they pick up their two free lightbulbs. We would like your permission to include the Conservation Commission as a supporter of our activities.

The following is a summary of information provided by DarkSky International ([www.darksky.org](http://www.darksky.org)).

Light pollution is the human-made alteration of outdoor light levels from those occurring naturally.

Components of light pollution:

- Glare — excessive brightness that causes visual discomfort
- Sky glow — brightening of the night sky over inhabited areas
- Light trespass — light falling where it is not intended or needed
- Clutter - bright, confusing, and excessive groupings of light sources

Light pollution disrupts wildlife, impacts human health, wastes money and energy, contributes to climate change, and blocks our view of the universe.

- Nocturnal animals sleep during the day and are active at night. Light pollution radically alters their nighttime environment by turning night into day. Predators use light to hunt, and prey species use darkness as cover. Glare from artificial lights can also impact wetland habitats as artificial lights disrupt this nocturnal activity, interfering with reproduction and reducing populations.
- Many studies have shown that exposure to artificial light at night negatively affects human health, including increased risk for:
  - Sleep disorders
  - Depression
  - Obesity
  - Diabetes
  - Heart disease
  - Cancer
- Environmental responsibility requires energy efficiency and conservation:

- Installing quality outdoor lighting could cut energy use by 60 to 70 percent, save billions of dollars, and cut carbon emissions.
  - Outdoor lighting should be fully shielded and direct light down where it is needed, not into the sky.
  - Fully shielded fixtures can provide the same level of illumination on the ground as unshielded ones, but with less energy and cost.
  - Unnecessary indoor lighting – particularly in empty office buildings at night – should be turned off, preventing leakage of that light into the night sky.
- In an average year in the U.S. alone, outdoor lighting uses about 120 terawatt-hours of energy, mostly to illuminate streets and parking lots. That's enough energy to meet New York City's total electricity needs for two years! Estimates are 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.
- Until recently, our ancestors experienced a sky brimming with stars — a night sky that inspired science, religion, philosophy, art, and literature, including some of Shakespeare's most famous sonnets. The natural night sky is our common and universal heritage, yet it's rapidly becoming unknown to the newest generations.
  - “For my part I know nothing with any certainty, but the sight of the stars makes me dream.” – Vincent van Gogh



# Save the

FIREFLIES  
BIRDS  
NIGHT SKY

**Only yellow bulbs (590nm/2200K) outdoors!**

**1**

White outdoor lights attract disease vectors like mosquitoes and flies. Swap them for amber bulbs (2200K), or if you can't find them, up to 2700K may be acceptable. - [Deichmann, UCLA-Smithsonian, 2021](#)

**2**

Lights disorient and kill 1 million birds/year and disrupt migration. Lights worsen the insect population decline worldwide, hurting the 90% of birds that rely on them, as well as crops. - [Audubon.org](#); [Bodin, Smithsonian,](#)

**3**

Night lighting disturbs firefly reproduction. Use motion sensors (buy bulbs to convert regular light fixtures into yellow motion-sensor lights, starting at ~\$6 online) or a scheduled timer (not photosensitive). - [Xerces.org](#); [Firefly.org](#)

**4**

White outdoor lights erase starry skies through light scattering and sky glow, disrupt biological systems in wildlife like turtles, and cause discomfort, glare, and sleep disruption to humans, even in cities. - [DarkSky.org](#)

Courtesy of the Town of Durham  
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