



# Maryland Native Plant Society

APPRECIATION CONSERVATION EDUCATION

**Testimony: HB452, Outdoor Lighting - Guidance and Use of State Funds**

**Committee: Environment and Transportation**

**Hearing Date: February 12, 2025**

**Position: SUPPORT**

Chair Korman, Vice Chair Boyce, and honorable members of the Committee,

The Maryland Native Plant Society (MNPS) urges a favorable report on House Bill 452 because of its importance to the health of the environment, native plants, and native animals.

MNPS is a 501(c)(3) non-profit that focuses on education and conservation because we care deeply about the health of Maryland's natural communities. These consist of native plants, native animals, and beneficial microbes all working together to provide important ecosystem services, such as pollination, oxygen generation, erosion control during storms, pollution control, cooling, and CO<sub>2</sub> absorption. Healthy natural communities help maintain biodiversity and limit climate change. With the State's wild habitats under duress from many stressors, MNPS would like to see the state's native species subject to less pressure from harmful lighting, especially in parks and by trails.

I serve as Vice President of MNPS and am the founder of EcoPlant Consulting. In addition, I am a Board member on the Mid-Atlantic Invasive Plant Council, Chair of the Committee on Invasives Lists for the Maryland Invasive Species Council (MISC), and an expert witness on invasive plant legal cases. In addition, I co-authored the 2022 *Plant Invaders of Mid-Atlantic Natural Areas, Field Guide*.

Lamps that cause light pollution, especially bluer LED illumination, harm native plants and habitats. Besides directly impacting plants, lighting hurts the beneficial insects, birds, and other wildlife on which native plants depend for propagation. As a result, inappropriate lighting can contribute to plant species extinctions, significant decreases in plant populations, and major degradation of natural ecosystems.

Lights at night disrupt plant physiological processes and circadian rhythms. Bluer light above 3000 Kelvin, which is more similar to daylight than warmer, yellower lighting, is likely to confuse plants even more than lamps below 3000 Kelvin. According to research, the leaves of trees subject to nocturnal light store less starch to use as energy. At dawn, these trees also show lower photosynthesis.

Additionally, plants experience disrupted seasonal rhythms, acting as if fall ends later and spring comes earlier. Confusing plants about the seasons can put some species out-of-sync with their specialized pollinators and so reduce reproduction. Besides, plants that are not functioning properly are weaker and probably more susceptible to destructive insects, diseases, and our frequent droughts.

Plant populations are reduced because artificial lighting interferes with pollination by beneficial insects, including moths, flies, and beetles. A 2014 study showed that 70% of moths flew toward street luminaires and away from flowers. In a 2017 study, about 60% fewer pollinators visited a meadow lit by LED lamps than another with only moonlight. Research has shown that not only does lighting interfere with pollination at night, but disruption is also seen during the day. In addition, insects are directly harmed by lighting at night. Often, they are attracted to bright lights, including lamps that shine up and out. Unable to escape the light, the insects exhaust themselves and die or are eaten by predators.

Other wildlife is also attracted to lights, like migrating birds unable to escape, exhausting themselves, colliding with objects or other birds, and experiencing high mortality due to depleted resources. Birds are key to maintaining a healthy native plant population because they eat fruits and spread seeds far and wide. On the other hand, birds and other wildlife can experience the opposite: they are repelled by lights, so avoid habitats crucial for them to survive. For example, according to research, certain bat species avoid artificial light due to predator risk. Since they can eat a thousand or more mosquitoes a day, areas bypassed by bats could see many more mosquitoes, which can carry human diseases.

With inappropriate lighting, mating, raising young, and foraging of birds, amphibians, and small mammals can be disrupted, thereby producing fewer or less fit offspring. Species normally kept separate by dark nights and bright days can find themselves interacting, with poor results. Contacts between predators and prey can be disrupted with disastrous outcomes for some species. I could continue to list the destruction caused by night lighting; however, you are right if you see the situation as extremely complex. In many cases, lights have the potential to severely damage natural ecosystems.

To summarize, native plants, many beneficial insects, and a majority of birds are completely dependent on one another. Bright lights, especially bluer lamps above 3000 Kelvin, negatively impact all of them directly. Due to the complex interactions among them, impacts are magnified and can affect entire natural habitats. As a result, we humans also see significant hits to our health and wellbeing.

The U.S. Fish & Wildlife Service recommends warmer lights with less blue. Artificial night lighting should also be directed downward, not upward or outward at the surrounding landscape. We need to help the State's native plants and animals survive. Not only do they deserve our support, but the citizens of Maryland need the services that healthy natural habitats provide. The Maryland Native Plant Society urges a favorable report on HB452.

Respectfully,  
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