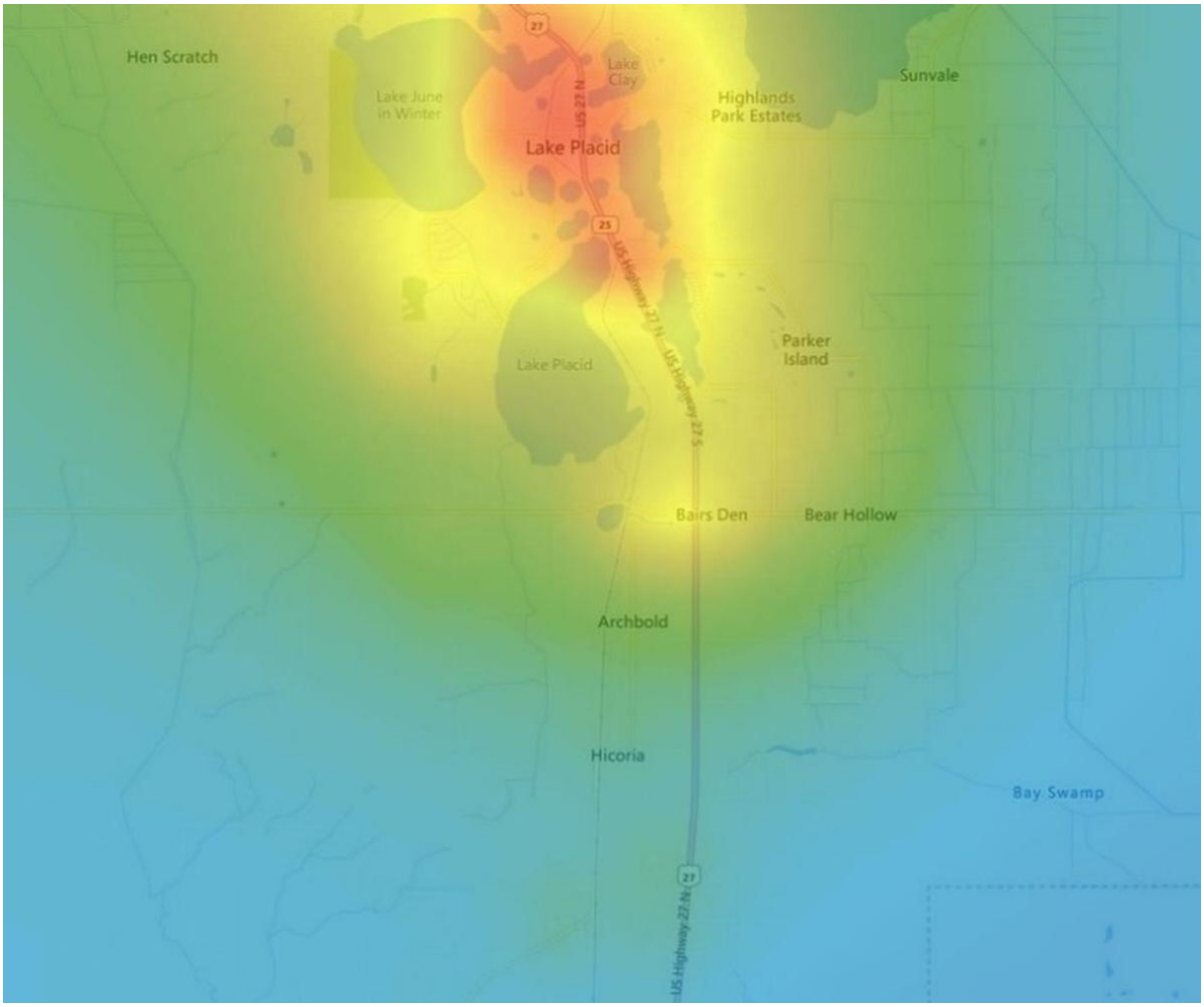
https://www.midfloridanewspapers.com/highlands_news-sun/the-perils-of-light-pollution/article_77b4d828-bca6-11eb-8785-2febd1d13f67.html

The perils of light pollution

Special to Highlands News-Sun Provided by Archbold Biological Station
May 26, 2021



A light pollution map of Lake Placid based on data published June 10, 2016 (Falchi et al., Sci. Adv., Jakob Grothe/NPS c Matthew Price/CIRES). You can view the light pollution map for other areas by visiting https://cires.colorado.edu/Artifical-

COURTESY/ARCHBOLD BIOLOGICAL STATION

If you live in or near a city or town, chances are the night sky you see is not as dark as it should

be. The reason for the disappearing night is 'light pollution.' A growing problem across the globe, light pollution is the excessive use of artificial light that alters natural light/dark cycles in the environment.

It is estimated that more than 80% of the world's population lives in areas polluted by light, and nearly 99% of the continental United States is exposed to some level of light pollution.

There are several categories of light pollution, including 'glare' due to excessive brightness, 'light trespass' when light illuminates areas where it is not intended or needed, and 'sky glow,' the brightening of the night sky. Though first recognized as just a nuisance in the 1970s by astronomers, only recently has light pollution been recognized by scientists as a significant threat to biodiversity. Light pollution has become one of the most chronic human-caused disturbances to the environment, having far reaching effects on wildlife.

Until the invention of lightbulbs, wildlife evolved and adapted to 'day and night' light cycles, so it is not surprising that light pollution negatively impacts wildlife. Many physiological and behavioral traits are tied to natural light and dark cycles, which are disrupted or altered when light pollution is present. For diurnal species, melatonin and serotonin levels may drop during night-time hours if excessive human-caused light is present. Songbirds in the city or rural areas exposed to light pollution will start their morning calls before the sun rises and might even start laying eggs too early in the season, because their sense of time and season is disrupted by constant light exposure.

Constant light effectively eliminates night, disrupting nocturnal species like frogs and salamanders. Frogs in areas of intense light pollution experience increased stress, which can negatively impact growth and mating and diminish their ability to cope with diseases or predation. Nocturnal salamanders exposed to light pollution will continue to hide after dusk and reduce the number of hours spent foraging. Many people are aware of the disorienting effect that heavily lit beaches have on sea turtle nestlings and this example provides the easy solution to light pollution.

There are several ways you can help reduce light pollution in your area, and in doing so help reduce the negative impacts it has on wildlife. The first, and easiest, way is to simply turn off outdoor lights when they are not necessary. If lights must be used outside, make sure to install light fixtures as low as possible. Tall light posts contribute to light trespass and sky-glow by illuminating more than the intended area, so using shorter lamp posts or footlights along a path reduces the amount of wasted light.

Additionally, motion sensors, dimmers, and shields can be used to reduce light pollution and focus the light to where it is needed.

Lastly, using longer-wavelength LED lights rather than bright-white or blue heavy LEDs helps reduce the negative impacts of light pollution, as animals, including humans, are more sensitive to blue-white light (think TVs and smartphones).

When Archbold Biological Station built two state-of-the-art buildings, known as the Adrian Archbold Lodge and Frances Archbold Hufty Learning Center, the decision was made to install wildlife-friendly lighting. Archbold installed low footlights along the sidewalks with shields directing the light toward the ground, lights on motion sensors, and lights on the buildings that have shields to reduce or eliminate light trespass. Read more about the Lodge and Learning Center on the Archbold website: https: www.archbold-station.org html education aac.html

Remember, don’t be like Tom Bodett, and don’t leave the lights on!