Haddam Garden Club
July, 2023 Garden Blog Article
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In Praise of Darkness

When I was a kid, my father used to take us camping on the islands of Lake George, in upstate New York. After the campfire had burned down, and just before wriggling into our lumpy sleeping bags, we would lie back and marvel at the thousands of stars crowding the night sky. There were so many more than we ever saw at home! Just as it had been since the beginning of time, the hours between sunrise and sunset were given over to darkness.

But the twentieth century changed everything. With the advent of electric lights, people pushed back the night. In a truly dark area, it's estimated that about 2,500 stars can be counted on a clear night, but that number falls to a few hundred in most suburbs, and only a few dozen in cities. I noticed the difference when I moved from densely populated Branford to more rural Haddam, but even here, the "skyglow" of Middletown is visible. And as happens so often with technological "advances," we're only beginning to understand how much harm all this light can cause for people, animals, birds, insects, even plants and trees.

Let's begin, as the world generally does, with the effect on humans. That light shining into your bedroom window isn't merely annoying. It disrupts your circadian rhythms, suppressing melatonin production, making sleep elusive, and increasing your susceptibility to depression and even some cancers. It can alter brainwave patterns, hormone generation, and cell regulation. That's bad, but you, at least, can fight back with shutters or thick curtains.

Nothing else in the natural world has that option. Mistaking a porchlight for the moon—the only navigational cue they evolved to recognize—insects will circle all night, and be dead from exhaustion by morning. Mistaking town lights for the glow of the horizon, baby sea turtles turn away from the surf. Mistaking brightly-lit windows for morning, migrating birds fly headlong into glass by the millions each year. The National 9/11 Memorial and Museum Tribute in Light sends a shaft of light four miles into the sky. It is evocative for humans, but disastrous for birds. It is estimated to attract 150 times the usual density of migrating birds. Fortunately, they dissipate almost immediately when the light is turned off.

Bats shy away from brightly-lit areas, and so fail to perform their vital roles of seed dispersal and insect control. Uncounted millions of dollars are wasted by individuals and governments: who needs empty parking lots to be brightly lit all night? Why should a porch light stay on through the wee hours? Do we really need streetlights to illuminate the few cars that travel Walkley Hill Road between midnight and dawn? Apparently even the military is finding it increasingly difficult to locate suitably dark areas in which to perform night training maneuvers.

As for plants—well, gardeners have known for a long time that plants are photoperiodic, that is, responsive to seasonal changes in day length. It's obvious every holiday, when markets are crammed with plants and flowers brought into bloom precisely on time through careful manipulation of sunlight in shaded greenhouses. Chrysanthemums are the most notable example. But what wasn't so obvious, and only recently has been studied, is that so many developmental processes—dormancy, shoot growth, and flowering—are governed not only by the number of hours of darkness, but by uninterrupted darkness.

Pay attention to the trees that line our roads. You'll notice that those closest to streetlights leaf out earlier in the spring and hold onto foliage later in the fall, making them more susceptible to frost damage at one end and both frost and wind damage at the other. Sometimes the difference is apparent even from one side of the tree to the other. Often the lit side will have bigger leaves, which doesn't seem to matter much, except those larger leaves also have larger pores, which make them more susceptible to pollution and drought. (I wonder how much that may have contributed to the widespread loss of trees in the last few years?) A few weeks difference in bud break, flowering, and seed production may not mean much to us as we drive past, but insects just emerging from winter dormancy, or birds arriving in their spring migration, are relying on plant growth patterns that were established thousands of years ago. They can't adjust their schedules to ensure that food will be waiting.

Plants react differently to light pollution. Some react by increasing seed production, which benefits them, but results in the crowding out of other species. Some plants, for example some cactus, will bloom only in the dark. No flowers means a potential gap in food for pollinators, and the period of famine may reduce the number of pollinators still alive and working later, when other plants come into bloom. No pollination means no fruit or vegetables, and since one third of human food depends on pollinators, that's a problem.

This month a new state law, Act 23-143, goes into effect. It directs that all nonessential outdoor lights on state-owned buildings be dimmed after 11 p.m. A fairly modest reduction, but welcome nonetheless. Besides protecting wildlife, it's estimated to save taxpayers $1.3 million per year, and reduce pollution by the equivalent of 440 gas-powered cars taken off the road.

You, too, can cut your electric bill and make the world more wildlife-friendly with very little effort by removing nonessential nighttime lights, adding motion sensors to the ones that remain, and making sure they point downward. Even the type of light bulb matters. For more information, go to https://www.lightsoutct.org. The organization's focus is on protecting birds, but the solutions apply equally to plants and other animals. Turn out the lights, and welcome back the stars.