

## LANDSCAPE AND LIGHTING

The methods we use to grow healthy gardens to enjoy and share with family and friends changes with the definition of “healthy”. We have already changed our garden practices to incorporate information about pesticides and fertilizers, and even “beneficial” insects.

Now with an increasing body of evidence proving that light at night has deleterious effects on flora, fauna, and human health\*, it’s time to re-evaluate our night lighting around our homes and in the garden. Among the findings:

- Continuous lighting depresses the formation and maintenance of chlorophyll in leaves and promotes lengthening of the internodes of the branches and expansion of the leaf area.
- Light falling on pond water increases algae growth and suppresses the movement of zooplankton which feed on algae.
- 24-hour lighting inhibits flowering and promotes vegetative growth of short-day plants; encourages continued vegetative growth and early flowering of long-day plants; and increases stem lengths of day-neutral plants
- Researchers found that artificial night lighting disrupts the physiology and behavior of all nocturnal animals studied (half the species on earth are nocturnal), including birds, bats, frogs and salamanders, fish, fireflies, and zooplankton.
- Bats which consume large quantities of mosquitoes are less likely to inhabit lit areas
- Sea turtle hatchlings are decimated when they are drawn toward unshielded street lights instead of the safety of the open ocean.
- Excessive exposure to artificial night lighting can alter basic biological circadian rhythms in animals, change predator-prey relationships, and even trigger deadly hormonal imbalances, upsetting entire ecosystems.
- Illuminated buildings confuse migrating birds accustomed to navigating by the stars. Some collide into windows and others drop from exhaustion after hovering moth-like around the lights. With estimated deaths at more than 100 million a year, major skyscrapers in Chicago and New York have begun shutting off their lights.
- In the fall season young plane trees (sycamores) were observed in the nursery growing more rapidly and much later than plants of similar age that had been screened from the night lighting. Winter dieback was severe on the lighted trees during the following spring because dormancy was delayed.

The beauty of a natural nocturnal environment and a star filled night sky are both increasingly rare sights in our developed world. The night is beautiful in itself as is our landscape when lighted by a full moon; and by star light for those lucky few with a very dark environment.

The recommendations to protect the health of our gardens and our nocturnal environment are simple: use the lowest amount of light necessary to see foliage (usually in the range of 7-20 watts incandescent); highlight the garden sparingly and with shielded light bulbs; and turn off the lights when you are not there and in the middle of the night. See: [www.darksky.org](http://www.darksky.org) for more information on light pollution and for a selection of "dark sky friendly" light fixtures.

NOTE: Many efforts are underway to limit “light pollution” including by the US Fish and Wildlife, the National Parks system and an increasing number of municipalities, in order to control “light trespass”, including excessive lighting around Nature Preserves, “dark sky parks”, and observatories. The Dark Sky effort is supported by The Sierra Club, The League of Conservation Voters, The Nature Conservancy, The Audubon Society, NRDC, and the astronomical community.

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*\* Please contact me for the full reports: [sharder@optonline.net](mailto:sharder@optonline.net)*