

What Lightning Bugs Can Teach Us About Healthy Habitat

By Donna Merrill

As we restore our backyard habitats for pollinators, one of our most beloved insects—a beetle, to be precise—has much to teach us. Build habitat for lightning bugs and you build habitat for bees, butterflies, moths and many other of our tiny invertebrates.

First, let's clear up some confusion. What's the difference between a firefly and a lightning bug? Well, it's more than just which word you learned when you were a kid. Fireflies are



beetles that belong to one family of insects. There are different kinds (species) of beetles within that family. For example, all firefly juveniles (larvae) light up—often called glow worms, but not all species have adults that light up. Some fireflies fly during the daytime and use pheromones, not light, to find a mate, and in some species only the females light up and the males don't light up at all. What we see in our backyards in the eastern US on an early July evening are labelled "lightning bugs"—a collection of species within the firefly family in which both the male and female adults use quick flashing lights to signal each other during mating.

Protecting these beloved beetles and helping them thrive boils down to one thing--good habitat. Fireflies are very specialized. Preserving the particular conditions they need is the most important thing we can do since they can't move somewhere else if their habitat is disturbed.

Recently I spoke to Bill McDonald, a local lover of fireflies who has spent 50 years managing his New Canaan, CT property for lightning bug habitat. The photo above was taken last summer in his front yard--the result of his assembling the elements fireflies need to survive. Luckily for us, Bill compiled a "handbook" based on his years of experience to help us bring this bioluminescent insect into our own backyards. Here're some pointers from his recipe book:

Where to start If you already have a population of lightning bugs there's no need to introduce the beetles to your yard from another source. Lightning bugs have few predators and one female can lay 100 eggs, so the numbers will grow quickly from just a few.

Choosing your site Choose a meadow that is surrounded by a mixture of deciduous trees and, ideally, conifers which will help block light from car headlights, neighbouring houses, and streetlights. Male lightning bugs need trees so they can look down for the females who sit on the tops of meadow grasses.

Light Pollution First and foremost, fireflies need protection from light pollution. If ambient light levels are too high lightning bugs can't "talk" to each other. Outdoor lighting has a dramatic effect on a lightning bug's ability to successfully find a mate. A male's only interest is in flirting and he does this by producing flashes in a specific pattern to court the females. Unfortunately, lighting up our nights diminishes this flash activity--brightness being the foremost problem. The good news is that, in the world of light pollution, there's a lot of low-hanging fruit. For starters, remove lights that are not doing anything, don't light up your trees, turn off lights when you don't need them, and use motion sensors or timers. If you must have lights, make them as dim as you can accept, install shielding around the lights to keep light from escaping up into the sky, and close your curtains at night so light doesn't escape outside. Finally, don't use lights when you go out at night, instead use time to wait until your eyes adapt.

No pesticides, herbicides or fertilizers Pesticides are a major threat. Lightning bugs live underground for two years before emerging to mate making them especially vulnerable to pesticide exposure. Pure water is critical. If you're lucky enough to live upstream from your neighbors you can control your watershed to great advantage. If that's not the case and the firefly meadow you are creating is downstream, help your neighbors understand what you are doing by explaining that one lawn treatment can eliminate years of work when it comes to preserving fireflies.

Moisture Lightning bugs need moisture. A source of water is a plus—a nearby river, pond or wetland works well. Female lightning bugs love moss! Other Pollinator Pathway practices that preserve moisture should be followed as well: Mow your grass higher, leave the leaves around your trees and shrubs in fall, and don't remove fallen trees if possible because lightning bugs overwinter under logs in your woods and along the edges of your property. Finally, consider joining Doug Tallamy's Homegrown National Park by reducing your lawn by half.

Plant Natives Lightning bugs are carnivores so building the population is all about feeding the larvae their favorite food—snails, slugs and worms. Snails love asters and a combination of asters, goldenrod, Joe Pye weed and black-eyed Susans work well. Planting these will fill you garden and meadow with color and will double as a Pollinator Pathway, especially if you add milkweed for the Monarch butterflies. Remember: native flowers must bloom to be effective and should be cut only once in late fall or winter.

Invasives Since a firefly meadow is cut only once a year, invasives will be a problem and managing them must be worked into your maintenance regime. As Bill McDonald warns, "Plan on it because it will happen." Educate yourself: LEARN TO IDENTIFY AN INVASIVE! You never want to say, "If only I had known". Chemical control won't work in a firefly meadow so spot cutting will be needed throughout the growing season. Learn when invasives such as porcelainberry, Canadian thistle, Asian bittersweet and Indian hemp fruit or go to seed. If you stay on top of these thugs, controlling them becomes only a once-a-year task.

Finally, don't be discouraged. It might seem like an effort to build your own "Lightning Bug Sanctuary" but sharing the magic and joy of 10,000 fireflies is worth it.