

Pollinators and the Gardens That Feed Them: Creating Pollinator Friendly Landscapes

by Jean Vose

Pollinators are essential to our environment and responsible for the survival of 30% of the human food supply and 90% of our wild plants. It has been estimated that roughly 90% of the flowering plants worldwide require an insect or animal to distribute their pollen in order to set fruit and seed. Beyond agriculture, pollinators are keystone species in most earthly ecosystems.

Considering the growing concern over the recent loss and disappearance of honey bees and other pollinators across the country, many backyard enthusiasts are rediscovering a relatively simple and fun way to assist not only the honey bee but also the other essential pollinators in their back yard and gardens. By providing a pollinator-friendly habitat in the yard, one can increase the quality and quantity of their garden flowers, fruits, and vegetables. A pollinator garden is planted and designed with specific nectar and pollen producing plants. Gardening to encourage pollinators allows us to understand and appreciate a part of nature we often don't notice: the insects. Many species of butterflies, bats, birds, moths, flies, wasps, and even mammals are also pollinators. Pollinator-friendly landscapes are places where pollinators can forage, build nests, and rear their young. Through simply looking for food, thousands of species of insects (and animals) help plants to reproduce. They are so essential to reproduction that much of the world's plant life could not exist without them. In many places, the essential service of pollination is at risk from habitat loss, pesticide use, and introduced diseases.

When we began keeping honey bees in 1986, we had just bought our home in Worcester. That first year we had the slope behind the hill cleared and made into four terraces about 75 feet long by four to six feet wide. We planted vegetables and herbs

and shady plants, and asparagus, and shrubs and fruit trees. And, of course, we planted flowers for our "girls." In short, we planted all sorts of plants; some for our bees and some because we liked the catalogue descriptions or how they looked or because our mothers had grown them.

Slowly, over the years, we began to pay more attention to the insects and pollinators in our yard and their nutritional needs. In addition I became a Master Gardener and Certified Horticulturist. My journey into planting for pollinators began through many articles in the now defunct National Gardening Association magazine. They identified not only pollinator plants but also companion planting. I jumped right in developing raised garden beds, using trellises, and plantings to help plants grow better for both us and for the pollinators. We continued these practices when we moved to Maine in 1998, but it wasn't until I retired in 2010 and had a bit more time on my hands that I began to share what I've learned and practice through teaching programs.

To create a strong environment for bees, pollinators, and other creatures, we need to garden with nature. There are four basic steps to creating pollinator friendly gardens: their need for food, water, shelter, and good habitat. Pollinators are not so different from us in their need for food, water, shelter, and good habitat.

Pollinators Need Food

Plant for a sequence of blooming flowers throughout the growing season. Different pollinators emerge at various times of year and have differing lifespans and periods of activity. Create an ongoing pollinator buffet throughout the growing season by planting a sequence of overlapping bloom. In turf areas allow for pollinator-friendly plants like dandelion and clover. The growing season here in midcoast Maine stretches from early spring (late April) through late fall (usually early October).

Skip double-flowered plants as they have little, and sometimes no, nectar or pollen. While they are lovely to our eyes, they may be a source of starvation for a bee or other pollinator. Find the beauty in what the plant does, not how it looks. Use plants that have naturally occurring forms that pollinators can recognize and use. When ordering seeds, check the descriptions carefully to see if they have been bred to be pollen-free. Many sunflowers fall into this category.



Photo courtesy of Jean Vose

Best bet? Use open-pollinated, heirloom varieties. Use native plants to support native pollinators and your ecosystem. The key here is evolution matters! Native pollinators have evolved with native plants and excel at pollinating those species. There is some research showing that local native pollinators have a strong preference for native plants. In some cases, pollinators and plants depend on each other. Specialist pollinators, like squash bees, depend upon a small group of plants or even a single native plant – in this case squash blossoms.

Be sure to include flowering trees, shrubs and vines. Many woody plants, trees, shrubs, and vines, offer flowers that can feed a large number of pollinators. Some early blooming trees and shrubs may be the only source of pollen or nectar for early emerging bees. Think shadbush, skunk cabbage, pussy willow, red maple, trumpet vine and common hops (blooms in fall). Food sources should also include larval food sources as well. Without the larval food sources, you will not see butterflies because there are no caterpillars.

Plant a diverse array and number of plants with different flower shapes, sizes, and colors. Each pollinator type is attracted to different plant characteristics. While a hummingbird favors red flowers, a bee is enticed by other colors, including purple, violet, blue, white and yellow. Not every pollinator can access the same kind of flower; some need very open flowers while others can use more closed flowers or long, tubular flowers. A pollinator's tongue length, body size, shape and strength help determine what flowers it can use. Plant diversely to accommodate an array of pollinators. Sizeable patches of the same plant are the easiest for pollinators to find. A three-foot-square patch of a single species is a good place to start and can be repeated if the landscape is large enough. Repeat plant species and flower colors throughout your landscape. Achieve floral balance by planting diversely but sufficiently.

Pollinators Need Water

Clean water sources are vital for pollinator health and development and include lakes, streams, rivers, ponds, and wetlands. Water can also be provided in residential landscapes using shallow containers with sloping sides that are kept clean by changing with fresh water, both for the bees and the birds. Adding rocks or gravel that rise above the water surface provide resting sites and reduce the risk of bees drowning. You can use a birdbath, fountain, dripping faucet, small pond, or mud puddle. Mix a small amount of sea salt or wood ashes into mud to give bees and butterflies minerals. Float a piece of wood in a birdbath to provide a landing platform for bees.



Photo courtesy of Jean Vose

Pollinators Need Shelter

Provide nesting sites for pollinators. 70% of native bees nest in the ground and need bare or lightly vegetated soil in a sunny spot. Leave bare patches of ground for those native bees that build nests in soil and keep them free from foot traffic. Accommodate the other 30% of bees that nest in old mouse holes or tree cavities with pithy plant stems, dead trees, crevices in stone walls, or man-made boxes with nesting tubes or drilled holes. Leave a few weeds or "wild spots" at the edges of your landscape as good bee nesting resources. Plants with fluffy or fuzzy fibers or foliage are also good for providing nesting materials including ornamental grass plumes, lamb's ear foliage, fuzzy seedpods or soft casings. A well-layered landscape with trees, shrubs, vines, and perennials will accommodate most other pollinators.

Pollinators Need a Safe Habitat

Habitat is, of course, what has already been described. Leave a few weeds or "wild

spots" at the edges of your landscape as good bee resources. Provide a variety of sites to accommodate a variety of bees as described in shelter. Bunch grasses might attract bumble bees, which occupy old mouse nests. For native pollinators to survive the winter, provide sheltered nesting areas and overwintering habitats. This can be as simple as a brush pile, leaf litter, birdhouses, wooden structures or old masonry.

The thriving, healthy garden is one free of pesticides. Skip the "secret sauce" (pesticides) and attract nature's pest control (beneficial insects, a.k.a. natural enemies) to your garden with native plants that both attract and support them. This practice is known as companion planting.

Companion Planting ~ How does it work?

It is the planting of different crops in proximity for any of a number of different reasons, including pest control, pollination, providing habitat for beneficial insects, maximizing use of space, and to otherwise increase crop productivity. Companion planting is a form of polyculture. It creates diversity, enriches the soil, provides shelter, supports other plants and affects insect behavior. Many of the plants used are to attract pollinating insects while others are used to either repel or act as a decoy for harmful insects. For example, dill planted with tomatoes helps repel the tomato hornworm, calendula and parsley planted in the asparagus bed helps repel the asparagus beetle. More on this topic in the next issue of *The Bee Line*.

There are many books and websites that have lists of plants specific to pollinators. The Maine Cooperative Extension has several bulletins for specific pollinator floral needs.

<https://extension.umaine.edu/publications/home/garden-and-yard/>
<https://extension.umaine.edu/gardening/manual/plants-pollinator-gardens/>
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