

Garden Design for Beneficial Insects

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As the Earth warms and soil temperatures begin to rise, gardening minds turn to the tasks of spring. Many gardeners have already chosen the plants they will be starting from seed and have begun scouting out local native plant sales, all while dreaming of the bees, butterflies, and birds that are certain to show up very soon! While dreaming of warm spring days, there are some early season tasks that can help our winged friends.

Garden infrastructure is essential to gardening success, but also provides habitat that is not only beautiful, but bountiful for our flying friends. In order to create this space, the first consideration might be garden orientation. Most native plants prefer full sun, while others prefer partial shade and a few like heavy shade. Orienting a garden to face full sun might require a shape different than the traditional round or rectangle shaped garden. Let your imagination run wild, while considering light, both morning and afternoon sun as well as shade. Taller plants in strategic places may well afford the shade required for a plant that requires moderate light levels instead of full sun. The area of shade created by taller plants, trees, shrubs, or garden features essentially creates a microclimate within your pollinator garden. Taking advantage of the microclimates provided by these elements may allow for a broader range of plants within the same garden space.

Within a garden there are likely varying moisture levels as well. Garden edges may be drier (xeric) while interior, mounded areas may be able to sequester slightly more moisture (mesic). Depressions in the garden allow for bothersome puddles during rain events but allow a perfect place for plants that require “wet feet” (hydic), such as Swamp Milkweed (*Asclepias incarnata incarnata*). These can also be great places to include foliage via the addition of a sedge or rush.

The drier or more xeric areas of your pollinator garden are a perfect place for succulents such as sedums, purslane (portulaca), or perennial aloe. Utilize resources to find the perfect [plants for your ecoregion](#).

Another important factor is diversity. Diversity in plant type, height, bloom size, shape, and color will help our native bees access the pollen they require as a protein source as well as the nectar they require as a quick energy source (glucose). When prepping for spring, leave spent plant stems in varying heights to create habitat for pith nesting bees, such as the mason and leafcutter bees, both from the family Megachilidae. [Bee Identification Guides](#) can be found on the Pollinator Partnership website. If your state is not yet available, check with your county extension office as they are often a helpful pollinator resource.



Diversity in soil types is also of interest to ground nesting bees, which encompass a great majority of native bees. Even though the genus *Bombus* only make up a small percentage of all native bees, there are many more species of ground nesting bees. Other bees in the genres *Andrena*, *Melissodes*, and the “sweat bees” *Agapostemon*, *Halictus*, and *Lasioglossum* are all ground nesting bees. The higher the sand to soil ratio, the more likely you are to be a host to ground nesting species.



The garden edges, or borders can also be important habitats that can help pollinators. An advantage to using native stone as a border is the natural cracks and crevices that this substrate allows when stacked, even if it is only a few rocks high. Using untreated lumber or fallen branches in or within your borders helps provide habitat for some types of pollinators and wasps. In fact, leaving a small amount of dead wood around the edges of your property can help reduce damage from a great deal of nuisance organisms that find decaying wood a lovely home.

Why worry with wasps you may ask? Wasps are one of the best natural defenses against plant predation. Tiny parasitoid wasps often sting pests in order to use the pest as an incubation chamber for their waspy brood. Once stung, the pest is no longer viable in its original form and incubates more parasitoid wasps to help reduce the pest load overall. A pest load reduced by utilizing nature's pest control system helps eliminate the need for pesticides in the garden. [Pesticides](#), particularly neonicotinoids, are particularly harmful to bees and insects, including the wide variety of native beneficial insects such as Assassin bugs. Assassin bugs are from the family Reduviidae, and include wheel bugs and kissing bugs, which use their long mouthparts to stab their victims, releasing a paralyzing toxin.



Before applying pesticides, consider an [Integrated Pest Management](#) approach. Providing a diverse habitat with minimal chemical input will foster both pollinators and beneficial insects in your garden. Before you reach for a bottle of pesticide or soap, just wait a day or two and watch the plant/insect interactions occurring in your garden. Building a productive and attractive pollinator patch that will serve pollinators, humans, and wildlife alike isn't as hard as it first appears. Whether you are building a new garden this spring, expanding an existing garden, or just starting to think about creating valuable pollinator habitat, carefully consider design and site preparation to fully enjoy your wildlife space for years to come.