

Pollination occurs many different ways, most often through bees, birds, butterflies, bats moths, or the wind. Ninety percent of all flowering plants rely on animal pollination (mostly bees) to reproduce, including about a third of the food we eat. Worldwide annually, that's a \$200 billion industry. In the last few decades, however, pollinator populations have been declining due to disease, parasites, habitat loss, and pesticide poisoning. They need your help!

Recreating natural elements in your own yard (year-round shelter, chemical-free native plantings, species diversity) gives pollinators a safe place to forage, nest, and mate. Follow the tips below to create your own pollinator friendly space, but be ready to tolerate a certain level of wildness. Insect larvae will leave your leaf edges jagged, spiders will build webs in your log piles, birds will poop on your birdbath. But that's the point, right? Embrace the chaos! A well-balanced ecosystem, to humans, may look messy. Nature is messy. But learning how to work *with* nature can become the greatest tool in your repertoire. Just think, the next time you find aphids on your roses, you won't have to break out the spray bottle. You can head down to your local nursery, buy some lady bugs, release them in your garden, and watch as one of nature's oldest battles go down: predator vs. prey.

Learning how to use nature to your benefit is one of the greatest challenges in gardening, but it's immeasurably beneficial to future generations of earth's two, four, six, and eight-legged creatures.

How to Create a Pollinator-friendly Garden

1

Embrace the Sunshine

Most pollinators prefer to forage in warm, sunny spots protected from the wind and rain, so plant your garden on a southern or western exposure. Plant a windbreak if necessary.

2

Create a Bug Buffet

Fallen and fermenting fruit feeds beetles, butterflies, and bees; while flowers provide valuable nectar and pollen sources for foraging insects. Plant a diversity of annuals and perennials with varying colors, forms, and bloom season to attract a diversity of pollinators. Ideally, a pollinator garden should have multiple plant species blooming at all times during the growing season.

9

Plant These

Natives

Oregon grape, rabbitbrush, honeysuckle, penstemon, bee balm, yarrow, milkweed, blanket flower, goldenrod, aster

3

Go Native, Go Bold

Large swaths of the same plant are not only easier for insects to see but also increase foraging efficiency, so group your plants together in dense patches. Plant natives when you can, as they best support native pollinators. That said, herbs and annuals like sunflowers, zinnias, and chives are great food sources for bees and butterflies, so sprinkle them in here and there to boost foraging potential.

4

Learn to Coexist

You will see an increase in bee activity, but don't worry! Bumble bees and honey bees generally only sting in self-defense, so don't be afraid to mingle along with them in the garden. Wasps, on the other hand, are aggressive and should be discouraged from nesting around your house.

5

Make it Homey

Trees and shrubs provide year round nesting areas as well as protection from predators and severe weather. They also serve as a great windbreak. Leave dead snags, leaf litter, and open patches of dirt for ground nesters, and don't forget to include plant species that serve as a host or food source for larvae in your garden, like milkweed.

6

Don't Forget Water

Take advantage of a natural stream, build a small pond, or simply add a bird bath to your garden to keep pollinators hydrated. Bees and butterflies, specifically, need shallow or sloping pools where they can perch to take a drink without drowning, so use pea gravel to create a bank along water edges.

7

Ditch Those Chemicals

Use pesticides only when necessary and stick to natural or selective chemicals if you do spray. Neem oil and insecticidal soap are effective when used as directed. *Never spray actively flowering plants*, especially during warm temperatures when insects are out foraging. Pesticide residues, even from organic sprays, can harm foragers. And take advantage of nature's pest control - beneficial bugs! Ladybugs, praying mantis, and hoverflies are amazing generalist predators to bring or attract into your garden.

8

Be Patient

It may take a while for your pollinators to show up, especially if you live in a new neighborhood, but they'll find you eventually!

Annuals

Sunflower, zinnia, calendula, bachelor button, marigold, cosmos, borage, sweet alyssum, forget-me-not, snapdragon









Herbs

Lavender, chamomile, dill, thyme, chives, oregano, sage, lemon balm, catmint, anise hyssop, calendula

Pollinator Syndromes

Pollinator syndromes are flower characteristics that appeal to certain pollinators and can be used to predict the type of insect or animal that will aid in successful reproduction. A combination of color, odor, quantity of nectar, type of pollen, and flower structure can each affect a potential pollinator's ability to locate a flower and its food resources. Use a mix of these in your garden design to attract all types of pollinators.



| | Bee | Butterfly | Fly | Moth | Bird | Bat | Beetle | Wind |
|--------------|--|---|---|---|--|--|--|--|
| Color | Blue, yellow, bright white | Purple, bright red | Purple, white, brown | Purple, white, pink, pale red | Scarlet, orange, red, white | Dull white, green, purple | White, green | White, brown, pale green, often lacks petals |
| Odor | Fresh, mild, pleasant | Faint but fresh | Putrid | Emitted at night, very sweet | None | Emitted at night, strong and musty | None to fruity or foul | None |
| Flower shape | Shallow with a landing platform, tubular | Narrow tube with a spur, wide landing pad | Shallow, funnel-like or complex with a trap | Regular, tubular without a lip | Large, funnel-like with strong perch support | Bowl shaped, closed during the day | Large, bowl shaped | Regular, small |
| |  University of Florida Cool Kid Facts |  Discover Pollinators |  National Moth Week |  Fine Art America |  Bat Conservation Int |  Morning Earth |  Gondwananet |  |

Become a Monarch Waystation

The milkweed plant plays a very important role in the survival of the monarch butterfly. While adult monarchs can source nectar from any number of flowers, they only lay their eggs on milkweed. In addition, monarch caterpillars only eat milkweed, making the entire species extremely vulnerable to shrinking habitat. Once ubiquitous in open prairie land, milkweed patches become more scarce and fragmented every year due to commercial and residential development. So every year, monarch butterflies have a harder time foraging, breeding, and completing the great migration from Canada to Mexico, leading to declining monarch populations all across the country.

In the last decade, weather patterns and habitat destruction have wrecked further havoc on the already diminished monarch population, but there are ways to help. Become a waystation by rebuilding monarch habitat and adhering to pollinator friendly practices. Follow the *Monarch Watch* link below to find the types of milkweed native to your area and plant those, along with other nectar-rich plants, on your property. Track butterfly activity throughout the year and become certified as an official waystation with *Monarch Watch*, a Kansas-based nonprofit educational outreach program. But most importantly, spread the word! Even if you don't have land to restore, your city and surrounding neighbors probably do. Monarchs can only be saved by a nationwide effort. Check out our monarch waystation around the hop yard to see what grows well in Central Oregon!

links

Ecoregional Planting Guides

Pollinator Partnership
pollinator.org/guides.htm

Pollinator Resource Center

The Xerces Society
xerces.org/pollinator-resource-center/

Monarch Waystation Program

Monarch Watch, University of Kansas
monarchwatch.org/waystations/