

# HOW TO MAKE A POLLINATOR GARDEN

## WE ALL NEED BEES...AND BUTTERFLIES, HUMMINGBIRDS, BEETLES, AND MOTHS!

We need them for their pollination skills! The goal of every living thing is to create offspring, and one of the ways plants achieve this is by creating seeds. Pollination is the transfer of pollen grains from one flower to another of the same species so the plant can ultimately produce seeds. Most plants need pollinators to make this happen. This means that pollinators are necessary for the production of much of the food we eat. Native pollinators are also essential for the survival of many types of native plants, and those plants are essential to the survival of many types of native wildlife!

Unfortunately, populations of pollinators are declining worldwide. Scientists believe that one of the factors causing this decline is lack of nutrition due to habitat loss. The good news is that we can all help restore pollinator habitat by creating a pollinator garden. Even the most humble and simple effort can help native pollinators in your area, and can also result in a gratifying learning experience for everyone involved. Observing and learning about the importance of pollinators fosters a deeper understanding of how all living things are connected and cultivates a desire to conserve and protect living things.

## BEFORE YOU GET STARTED

Creating a garden is a fun outdoor family activity, as well as a way to be more active and learn about the world. Gardening can help grow both literacy and STEM skills. It is a hands-on way to interact with each other while benefiting creatures around us that need our help. Even if you think you have a “black thumb” rather than a “green thumb”, give gardening a try because:

- Gardening makes us happy. Research suggests that digging in dirt is a mood enhancer. Children know this instinctively!
- Disappointments can lead to new discoveries. For example, when one of your plants is invaded by aphids, watch nature help you out. Ladybug larva often hatch at about the same time that aphids invade, and these larva are voracious aphid-eaters.
- Even the smallest accomplishment is magical. When one of your plants blooms and a butterfly visits, you get to watch it sip nectar and maybe even sunbathe!
- You will have unexpected successes. The trick is to do some research and planning to find what is easy to grow in your soil and climate.

You do not need a lot of outdoor space to create a pollinator garden. If you are a beginner, start small and simple. You need a sunny location that is a little bit protected from the wind. Small insects like bees and butterflies cannot fly in windy areas and prefer sunny areas for foraging. Also, most native pollinator plants need about 6 hours of daily sun to thrive. A good spot could be along a fence or a deck or along the wall of a shed or garage

The basic supplies you need to get started are soil, seeds or plants, trowels for digging, a watering can and/or hose and some compost, manure, or earthworm castings to enhance the soil. If you are gardening in containers, get the best outdoor container organic garden potting soil you can buy. The quality of the soil in your garden or containers is the most important factor for a good outcome, so spend your time and money on that.

If you want to garden in containers, be creative. Inexpensive flowerpots, window boxes and containers can be found at dollar stores and big box stores. Just remember that your containers need drain holes in the bottom to release excess water. You don't want to have a swamp instead of a garden.

Avoid all pesticides (insect killers), even organic and natural ones, in and around your garden. Even organic pesticides can be harmful to some pollinators, and some herbicides (weed killers) can kill plants that benefit pollinators. Start with a diversity of plants and if a particular species is not doing well, replace it with a hardier, easier to grow variety, or more of the plants you already have that are doing well.

Creating a pollinator garden may seem daunting at first, but by taking small steps, doing some research and setting reasonable goals, the benefits will be worth the effort.

## **STEPS TO GET STARTED**

### **Research**

Learn about native pollinators in your area and the native plants that support them. Become familiar with the common names (such as black-eyed Susan) as well as the scientific names (Rudbeckia) of your favorites. Learn what the "good guys" (beneficial insects like ladybugs) look like in all of their life stages.. Library books, magazines, and websites offer a wealth of useful information. A phone call to your local extension service as well as a trip to a nearby plant nursery that offers native plants can also be helpful and informative. Catalogs of seeds and plants can usually be requested for free online.

## Select and plan

Decide which native pollinators you want to attract or which native pollinator plants you want to grow to help them. The plants you choose should be those most valuable to local pollinators. Heirloom and old-fashioned cultivars are the best for pollinators because their flowers are the easiest for pollinators to access and have more nectar. Native plants are also easier to grow because they have adapted to the local soil and climate, and have evolved to meet the needs of native wildlife. Keep your budget and available space in mind. Will you grow your plants from seed or will you buy transplants from a nursery or online? Keep in mind that some pollinator plants may be difficult to grow from seed and may not even bloom the first season. Starting with even one healthy plant that will bloom the first season and support your local pollinators may be easier and more fun for you. For the New England area, Swamp Milkweed or *Asclepias incarnata*, is an excellent choice because it supports many native pollinators and is the only area host plant for monarch butterflies. This means that it supports the monarch's entire life cycle, from egg to adult.

If possible, plant a diversity of plants so you have blooms from spring through fall. Try to plant at least 3 of each type of plant in groups. This not only makes it easier for pollinators to find your garden, but it helps the pollinators expend less energy flying around looking for food.

Do not mulch your garden. Most native bees nest in the ground and even a one-inch layer of mulch is impenetrable to them. Also, a little muddy spot in the soil will attract butterflies, which will sip the mineral-rich water.

Keep an area of your yard messy with a small pile of twigs and old plant stems. Pollinators like butterflies and bees will use this spot for protection from predators and some bees will even nest in hollow stems.

Consider including a small water source for your pollinators to drink. Bees and butterflies cannot land in open water like a birdbath. You can use a shallow plant saucer or even an old plate. Set it in the dirt at ground level. Put in a few flat rocks and sticks for "landing pads," for places to crawl out if they fall into the water. Then pour in a bit of water but don't submerge the rocks and sticks. You will have to change the water daily to prevent breeding mosquitoes.

## Plant

Gather your supplies and plant your pollinator garden! Try to plant in late afternoon or on a cloudy day. This will help your transplants avoid stress from the sun and heat. Be sure to water daily the first 2 weeks to give them a good start. Their root systems need time to grow and adjust to their new home. Some wilting is normal at first and nothing to worry about.

## Observe

This is the fun part! Watch your garden and the creatures that visit. Keep a notebook for each day and record the temperature, the weather, the time of day, and what comes to visit what plants. What are the bees doing when they come to your garden? Do some pollinators only come at certain times of day or when it's sunny? Are you noticing things that surprise you? Any unexpected creatures? What changes have you helped to create in your outdoor space?

## Share

Talk to other family members, friends, and neighbors about your pollinator project and what you have learned. Try to buy local organic products like honey, to support area farms and retailers. Join or create a science initiative to gather and report data about local pollinators, backyard gardens and wild space for pollinators. Talk to teachers about creating a pollinator garden at your school. If there is a community garden nearby, see if you can create a perimeter of pollinator plants. Register your garden with Million Pollinator Garden Challenge at [www.pollinator.org/mpgcma/register](http://www.pollinator.org/mpgcma/register).

## PLANTS FOR A NEW ENGLAND POLLINATOR GARDEN

### Trees and Shrubs

#### **Buttonbush** (*Cephalanthus occidentalis*)

This is a host plant for many moths and butterflies. White pompom flowers are very attractive to bees and butterflies. Blooms late summer.

#### **Highbush blueberry** (*Vaccinium corymbosum*)

Early bloomer. Delicious fruit loved by humans, also provides food for mining bees and mason bees

#### **Ninebark** (*Physocarpus opulifolius*)

This shrub that blooms mid-season has pretty leaves, peeling bark, and white flowers beloved by bees, butterflies, and birds.

### Perennials

#### **Wild geranium** (*Geranium maculatum*)

Shade-tolerant, blooms early. Provides important food for many native bees.

**Swamp milkweed** (*Asclepias incarnata*)

Host plant for monarch butterflies. Fragrance attracts lots of insects. Needs plenty of water. Blooms midseason.

**Wild bergamot** (*Monarda fistulosa*)

Blooms midseason, grows to 4 feet. Moths, hummingbirds and bumblebees are common visitors.

**Wild lupine** (*Lupinus perennis*)

Blooms from spring to early summer

**Cardinal Flower** (*Lobelia cardinalis*)

Bright red tubular flowers attract hummingbirds and swallowtail butterflies

**Wild columbine** (*Aquilegia canadensis*)

Blooms in spring

**Bird's foot violet** (*Violet pedata*)

**Anise hyssop** (*Agastache foeniculum*)

Easy to grow member of the mint family, pinkish purple flowers

**Cutleaf coneflower** (*Rudbeckia laciniata*)

Grows up to 7 feet tall with yellow flowers and a long bloom period. Tolerates some shade. Seeds provide food for birds.

**Goldenrod** (*Solidago spp*)

Yellow flowers bloom late, visited by many pollinators, extremely important for fall pollen. Grows in poor soil.

**New England Aster** (*Symphotrichum novae-angliae*)

Purple flowers bloom late summer, valuable food for bees at a time when many flowers have stopped blooming.

**Joe-Pye Weed** (*Eutrochium purpureum*)

Easy to grow, gets 5-7 feet tall with rosy pink flowers from July to September. Needs to be watered in hot, dry weather. Attracts bees, butterflies and moths.

### **Lavender**

This non-native species is highly beneficial to pollinators. Likes hot dry weather, easy to grow. Fragrant purple flowers

### **Catmint (*Nepeta spp*)**

Another easy to grow non-native, white flowers beloved by bees.

## **Annuals**

### **Lantana, petunias, zinnias, heliotrope, alyssum, sunflowers**

These are not native but are valuable to pollinators and are easy and fun to grow. When choosing sunflowers, be sure to pick a variety that makes seeds. Many new hybrids are seedless and therefore not useful for attracting birds in fall.

## **Vines**

### **Trumpet Honeysuckle (*Lonicera sempervirens*)**

Beautiful climber with red tubular flowers followed by red berries in late summer. Hummingbirds love the flowers and many birds eat the small berries.

## **FUN FACTS ABOUT POLLINATORS**

### **Bees**

Bees are the most effective of all insect pollinators and are adapted for pollinating. They are typically fuzzy and carry an electrostatic charge that helps pollen adhere to their bodies. Bees are the only pollinators that gather pollen to bring back to their offspring. Most native bees are solitary (except bumblebees, which live in colonies) and not aggressive. Some native bees do not even have a stinger. Bumblebees are unique in that they perform “buzz pollination” by grasping a flower in their jaws and vibrating their wing muscles. This helps them dislodge the flower’s pollen. Many plants benefit from buzz pollination, including wildflowers

### **Butterflies**

Butterflies are the second best pollinators after bees. They perch to eat so they prefer flowers with a landing platform. Their long legs collect pollen as they sip nectar. Butterflies cover more distance than bees.

## **Moths**

Moths outnumber butterflies. They are hairier than butterflies and do their pollinating after dark. They prefer tubular blooms which help them drink the nectar. Fragrant, white flowers are most attractive and easiest to find at night for moths. Hummingbird moths, which look just like a hummingbird and fly and hover like them as well, do their foraging in the daytime.

## **Birds**

Hummingbirds are the primary bird pollinators in the United States. While they feed on nectar, pollen sticks to the feathers around their bill and face. They prefer single blooms rather than double flowers because the nectar is easier to access. To survive, they must eat several times their weight in nectar every day.

## **Beetles**

Beetles are one of our oldest pollinators. Fossil records show that beetles were abundant 200 million years ago. They prefer bowl-shaped flowers and rely on their sense of smell for feeding.

## **MORE FUN IDEAS FOR KIDS...**

- Study the life cycle and anatomy of your favorite pollinator.
- Think about how different things would look if pollinators had a say in planning outdoor spaces like parks and gardens.
- Create an ad for your pollinator garden written for pollinators and designed to entice them to visit your garden.
- Choose a favorite fruit or vegetable and learn about its pollinators

## RESOURCES AND FURTHER READING

[www.fs.fed.us](http://www.fs.fed.us) U.S. Forest Service

[www.bringbackthepollinators.org](http://www.bringbackthepollinators.org)

[www.xerces.org](http://www.xerces.org) Xerces Society for Invertebrate Conservation

[www.wmmga.org](http://www.wmmga.org) Western Mass Master Gardeners Association

[www.plantmilkweed.org](http://www.plantmilkweed.org)

[www.thehoneybeeconservancy.org](http://www.thehoneybeeconservancy.org)

[www.americanmeadows.com](http://www.americanmeadows.com)

[www.brokenarrownursery.com](http://www.brokenarrownursery.com)

[www.highcountrygardens.com](http://www.highcountrygardens.com)

[www.earthtonesnatives.com](http://www.earthtonesnatives.com)

[www.northeastpollinator.com](http://www.northeastpollinator.com) Commercial organic pollinator nursery in Vermont

[www.pollinator.org](http://www.pollinator.org)

[www.nrcs.usda.gov](http://www.nrcs.usda.gov) Natural Resources Conservation Service

[www.nappc.org](http://www.nappc.org) North American Pollinator Protection Campaign

[www.wildflower.org](http://www.wildflower.org) Lady Bird Johnson Wildflower Center

[www.kidsgardening.org](http://www.kidsgardening.org)

[www.naba.org](http://www.naba.org) North American Butterfly Association

[www.grownativemass.org](http://www.grownativemass.org) Plants that attract pollinators native to western Massachusetts

[www.nhhomemagazine.com/creating-pollinator-friendly-gardens](http://www.nhhomemagazine.com/creating-pollinator-friendly-gardens) Resource for garden plans

Resource created by Judy Bent, Springfield Museums Family Engagement Educator

