

# A Gardener's Guide to Pollinators

Your source for becoming  
a part of the solution

One out of every three to four mouthfuls of food we eat  
results from the actions of pollinators!



## In this guide...

- About pollinators
- Help the pollinators
- Attracting pollinators
- Getting the neighbors on board
- Going the extra mile
- The other pollinators
- And more!



## About Pollinators

Honey Bees and Native Pollinators such as native bees, butterflies, flies, moths, beetles, and bats are essential for human survival and their populations are in serious trouble. Our fuel, food, drugs, and fiber are directly and indirectly taken from plants that depend on pollinators for their existence.

- One out of every three to four mouthfuls of food we eat results from the actions of pollinators!

- Pollinated crops contribute an estimated \$20 billion to our economy each year.

Native pollinators control the healthy function of our natural ecosystem. The documented decline of native pollinators, as well as that of the introduced European honeybee, should concern everyone. This decline resulting from the fragmentation and destruction of native habitats has reduced the food sources for many native pollinators. The traditional corridors of nectar- and pollen-rich plant sources have been destroyed by development and changes in land use. Isolated habitats are further degraded by non-native and invasive species. Misuse of pesticides and introduction of non-native pollinators have contributed to the extinction of many of our native species.

Plant Milkweed and Nectar Flower for Monarchs

Take a little bit of time and effort to plant pollinator friendly plants, trees and bushes in your garden, or in pots for your patio.



# Helping the Pollinators

## Educate Yourself

Bee informed. Learn about how pollinators provide 1/3 of the food we eat. Watch the pollinator activity in your yard or garden and take note of the plants they visit. Share the knowledge with your friends and neighbors about their importance.

**Increase the forage (food)** for pollinators in your yards and gardens.

**Eliminate the use of chemicals in your yard, garden and home.**

Become an educated consumer.

Practice Integrated Pest Management

**Throw in your financial support.**

There are many organizations that are working hard to preserve our pollinators and their habitat. Take a bit of time to find ones that would be helping in your area or even on a national or international level.

Here are some organizations doing great work



Check for others in your area!

# Attracting Native Pollinators to the Garden

You've heard about the benefits of having native pollinators in your yard and as a gardener, you're excited to the point of silliness to have them over and do the pollination dance all over your flowers, vegetables, and fruit.

But why do they show up in the first place? How can you take full advantage of your local pollinating insects and attract them to your garden?



Of course, any plants that you already have blooming in the garden will attract the pollinators naturally. But there's a difference between hearing about a party by word-of-mouth and being sent a formal invitation because you're on the guest list to begin with.

To send them engraved invitations, practice some old-fashioned, good-neighbor skills such as:

- Each pollinator's idea of timing is different and insect species appear at different intervals. The invitation should be offered at staggered times by planting flowers that bloom during various parts of the season: early spring, mid-to-late spring, early summer, mid-to-late summer, early fall, and even mid-to-late fall depending on your region.
- Have wide variety of goodies available when your guests arrive. Present them with a veritable smorgasbord by planting flowers that have blooms in various colors and shapes.
- Speaking of smorgasbord, don't be stingy with the food sources -- plant plenty of each. Pollinators can spot a large clump of one flower type much easier than one here and another there.
- Feed them their favorite cuisine. You can't miss if there are native flowering plants in your yard.



Contact a local native plant nursery or your county's Cooperative Extension Office for a list of the seductive varieties available.

- Please do your best to stay away from using pesticides in your garden and Coreopsis yard. Chemicals don't differentiate between the good guys and the bad. They wipe out everything. If you feel that you need to use a pesticide product, do so sparingly and follow the instructions on the product label carefully. Use only in the evening after most pollinators have gone to bed and never apply to blooms.

If you practice the good-neighbor suggestions above, you'll not only attract pollinators to your yard, but you'll also invite the cavalry -- predatory insects -- to the party, too. They're the other half of the beneficial insect group and they'll devour the pests that are bugging you.

## Wildflower Seed Mixes for Pollinators

We are ardently committed to promoting the health of pollinators as an essential component to creating a sustainable food supply. Our passion for addressing this critical agricultural and environmental issue has led us to offer a line of products developed specifically to aid the pollinators. These seed mixes are designed for specific types of pollinators and are of species that will provide a full 3-season blooming with great nectar and pollen for the insects and hummingbirds and seeds for other birds.

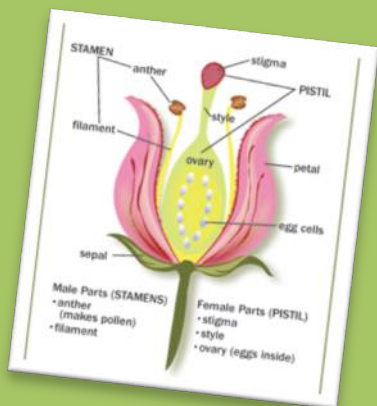
Plant these in masses in your yard or garden, along roadways and walkways, along fence lines and even in patio pots. The idea is to provide food as well as shelter for the pollinators by creating a habitat where they will be safe and well fed. Putting a shallow dish or plate of water out will be much appreciated and leave an area of dirt/gravel undisturbed for nesting native pollinators.

Keep some dried branches and canes from tall plants around. Look at your local garden centers for Mason Bee boxes or create homes for native bees yourself out of easy to come by materials. Leave your stalks from your milkweed plants standing or at least keep them around until the Monarch eggs have hatched and the larval caterpillars have found their way to the new green plants. Avoid using herbicides and pesticides especially around your plantings. Beneficial insects are especially vulnerable to these chemicals. The Bio-Integral Resource Center has a list of alternatives

<http://www.birc.org>



Available for purchase at <http://www.BBBSeed.com>



## What is pollination?

When a pollen grain moves from the anther (male part) of a flower to the stigma (female part), pollination happens. This is the first step in a process that produces seeds, fruits, and the next generation of plants. This can happen through self-pollination, wind and water pollination, or through the work of vectors that move pollen within the flower and from bloom to bloom.



## Who are the pollinators?

Birds, bats, butterflies, moths, flies, beetles, wasps, small mammals, and most importantly, bees are pollinators. They visit flowers to drink nectar or feed off of pollen and transport pollen grains as they move from spot to spot.

*Image & Information Source:*  
*Pollinator.org*

## How to Get Your Neighbors & Friends Interested in Pollinators!

You have finally come to understand how important pollinators are and why we need to protect them. One of the challenges we who value pollinators face is how to educate other people to care too.

**Here's an action list on how to gently inspire others to protect pollinators and the environment.**

### Make a demo garden

In your front yard....at first people may think you are bringing property values down with all those weeds, but keep the garden tidy and explain every plant you are growing to anyone who stops by. Bring up how much money you are saving by not watering the lawn and using chemicals.

### Teach the kids

Kids have open minds. Have an inviting garden with butterflies everywhere, and kids will stop to look around. They'll ask questions and they'll tell their families about the cool stuff they learned.

### Give away free stuff.

It's pretty easy to collect seed from native plants, or to put seed you have in little envelopes to give away. People in the neighborhood will soon realize they could get free seeds for lots

of low-water flowering plants if they stop by. If you're feeling extra generous, start up some of those seeds and give away the plants, too.

### Offer Free Public Classes

Oftentimes, libraries offer meeting rooms for public groups for free. Offer up a weekly classes on "Chemical-free gardening" or "Make your own natural cleaning products." Or host a free Seed Swap. Gardeners meeting other gardeners is often all it takes.

### Be generous with your time to talk to others

Before you know it gardeners and community members will talk to their neighborhood association or school about native bees and butterflies. Put together a Facebook Group or Email list and teach each other about natural gardening and making homes for pollinators.

You never know- the media may catch on and you could change your entire town!



# Going the Extra Mile for Pollinators

Already doing the basics for pollinators and ready to “go the extra mile”?

**Here are a few tips to get you started:**

## Winter Feeding Pollen Patties

Rather than just putting out sugar water, feed your bees *Winter Pollen Patties*. Dadant offers a quality product. To use, simply put the flat sheets of pollen substitute right on top of the bees.



Learn to think about beekeeping from a bee's perspective: What does the bee need to eat? The protein of pollen, not just sugar. Just like humans can't survive on soda.

## Nesting Sites



Bees, butterflies, and other beneficial insects need access to safe places to nest, lay eggs, and raise their young. Insects also need sheltered, undisturbed places to hibernate and overwinter. The easiest way to provide these nesting resources is by benign neglect and by recognizing, protecting, or adding to the resources already available.

Once you get your pollinator habitat growing, start thinking about what the next extra mile is you can do for pollinators in your garden. Perhaps it's nesting sites for wild bees.

Perhaps it's educating a neighbor about pesticides. Let's share our knowledge about what are the extra things that make a difference.

For more info on scientific methods for feeding bees in winter, check out “Scientific Beekeeping” <http://scientificbeekeeping.com/fat-bees-part-2/>

For a video on how to feed pollen patties: <http://www.youtube.com/watch?v=cBZCL33fNHY>

Image sources: *Dadent.com, NPSOT.org*

## The Other Pollinators....

What we think we see flying around in our garden: honeybees, yellow jackets, mosquitos and houseflies.

There are thousands of creatures out there day and night that we don't ever see or notice bringing pollen from flower to flower. Long before humans decided to stop being nomads and settle down and plant a garden, all these different kinds of pollinators already lived in nature and evolved for millennia with native plants so they serve each other's needs.

They are still the ones doing most of the work of pollination and we need to make sure our gardens still support them.

### What we are probably really seeing:

Native bees	Moths	Flower beetles
Orchard bees	Sphinx moth	Butterflies
Mason Bees	Clearwing moth	Ants
Polyester Bees	Cabbage moth	Birds
Mining Bees	Yucca moth	Bats
Sweat Bees	Flies	Humans
Leaf cutter bees	Syrphid or flower flies	
Blue Mason Bee	Friendly flies	
Bumble bees	Long Legged flies	
Carpenter bees	Muscid fly	
Digger bees	Tachinid flies	
Squash bees	Fruit flies	
Sunflower bees	Beetles	
Alkali bees	Click beetles,	
... or any of the other 5000 native bee species.	Scarab beetles	
Wasps	Leaf beetles	
Pollen wasps	Long-horned beetles	



## What we've hope you've learned:

There are so many more creatures out there pollinating than we had any idea even existed. Pollinators and humans affect each other's lives dramatically, without even knowing it.

To encourage pollinators, we need to grow sources of pollen and nectar...ie flowers, especially native flower that have evolved together with the pollinators.

Hybridized flowers have been changed in ways that sometimes make them unavailable -- the flower is doubled so it's bigger or cuter, but the native pollinator can no longer fit into it to get pollen. Sometimes the scent has been removed or changed and pollinators that find flowers by scent can't find it.

We need to reduce our pesticide use because pesticides kill everything, especially the native pollinators, in addition to the pest they were intended for.

We need to provide habitat in other ways...wild areas, water sources. We want a diversity of flowers and grasses for providing food (nectar and pollen). We need this diversity so we are able to adapt to and survive future changes in climate or in water availability.

Humans **DEPEND** on pollinators. We **NEED** them to pollinate our food crops or we won't have food.

We **NEED** pollinators to do their work or we won't have **SEEDS**.

Here at BBB Seed, we love our seeds. We love our wildflowers and edible plants. And we **LOVE** pollinators!

## About Us

BBB Seed is a small, family-owned company based in Boulder, Colorado that specializes in the distribution of wildflower seeds, heirloom and organic heirloom vegetable seeds and native grasses.

Content for this eBook has been provided by *Sandy Swegel* and *Chris McLaughlin*. Images are sourced on our website at <http://www.bbbseed.com>

