

## How Animal Pollination Works

Pollinators visit flowers in their search for food (nectar and pollen). During a flower visit, a pollinator may accidentally brush against the flower's reproductive parts, unknowingly depositing pollen from another flower. The plant then uses the pollen to produce a fruit or seed. Many plants cannot reproduce without pollen carried to them by foraging pollinators.

## POLLINATORS ARE IN TROUBLE

You may have heard that bees are disappearing, and bats are dying. These and other animal pollinators face many challenges in the modern world. Habitat loss, disease, parasites, and environmental contaminants have all contributed to the decline of many species of pollinators.

## WHO ARE THE POLLINATORS?

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

Although birds, bats, and other creatures are also pollinators, insects are the animals that do the bulk of the pollination that affects our daily lives. Some of these insect pollinators will be familiar (bees and butterflies), but you might be surprised by some of the others (flies, wasps, and beetles). Adding natural habitat areas into farm systems work. Farms that are closer to natural habitat produce more crop yield because they attract more pollinators. Adding habitat to farms systems works too – farms that have turned a portion of their fields into green space have gained back more overall yield. Homeowners can help too! Home gardens can and do attract pollinators, and

in many cases suburbs and cities have been shown to have more diverse pollinator communities than nearby wildlands. Pollinators do not seem to be phased by city life. If there are plots and patches of flowers, they will be visited by hungry bees. Pollinator gardening near community gardens also increases urban agricultural yields. If you build it, they will come and help you get bigger and better crops too!

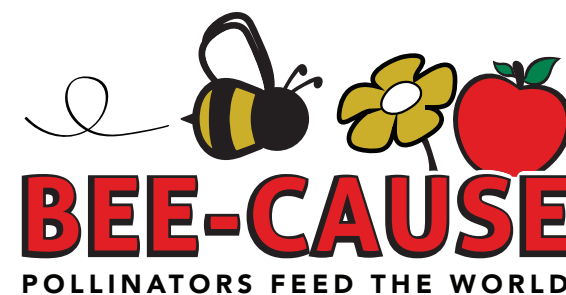
You can help pollinators, no matter if you live in the city or on a farm. It is easy!!

---

**Arkansas** – [www.uaex.uada.edu](http://www.uaex.uada.edu)  
<https://www.uaex.edu/yard-garden/master-gardeners>  
**Indiana** – [www.ag.purdue.edu/extension](http://www.ag.purdue.edu/extension)  
<https://www.purdue.edu/hla/sites/master-gardener/>  
**Illinois** – [www.extension.illinois.edu](http://www.extension.illinois.edu)  
[www.extension.illinois.edu/dmp/master-gardeners](http://www.extension.illinois.edu/dmp/master-gardeners)  
**Kentucky** – [www.extension.ca.uky.edu](http://www.extension.ca.uky.edu)  
**Michigan** – <https://www.canr.msu.edu/outreach/> <https://www.michiganmastergardener.org/>  
**North Carolina** – [www.ces.ncsu.edu](http://www.ces.ncsu.edu)  
<https://ncemgva.org/>  
**South Carolina** – [www.clemson.edu/extension](http://www.clemson.edu/extension)  
<https://www.clemson.edu/extension/mg/>  
**West Virginia** – [www.ext.wvu.edu](http://www.ext.wvu.edu)  
<https://extension.wvu.edu/lawn-gardening-pests/master-gardener-program>  
**Wisconsin** – [www.uwex.edu](http://www.uwex.edu)  
<https://mastergardener.extension.wisc.edu/>  
**Other resources:** USDA <https://www.nrcs.usda.gov>  
<https://beesfordevelopment.org/> [Pollinator.org](http://Pollinator.org)  
[Xerces.org](http://Xerces.org)

---

**Content Specialist** – Jon Zawislak, Instructor, Entomology & Plant Pathology, University of Arkansas System Division of Agriculture Cooperative Extension Service  
**Design** – Chris Meux, Design Specialist, University of Arkansas System Division of Agriculture Cooperative Extension Service



---

## The Birds and The Bees and... The Beetles!

Why We Should Care  
About Pollinators

---



**MORE THAN 75% OF FLOWERING PLANTS  
DEPEND ON ANIMAL POLLINATORS.**

**IN U.S., OVER 100 CROP PLANTS  
DEPEND ON ANIMAL POLLINATORS  
(VALUE >\$15 BILLION).**

**MOST NATURAL ECOSYSTEMS  
WOULD COLLAPSE WITHOUT ANIMAL  
POLLINATORS.**

**SOME PLANTS ARE ENDANGERED  
BECAUSE OF DIMINISHED  
POLLINATION.**

**CHOCOLATE DEPENDS  
ON POLLINATORS!**

## **WHY ARE POLLINATORS IMPORTANT?**

Many fruits and vegetables, nuts, oilseed crops, herbs and spices, animal forage, medicinal plants and ornamental plants benefit from insect pollination.

The produce section of grocery stores would be rather empty without the hard work of bees, birds, butterflies, bats, and other pollinators. More than 80 percent of the world's plants need pollinators to survive, including many that provide the food we eat. But today, many pollinators are in trouble.

Somewhere between 75% and 95% of all flowering plants on the earth need help with pollination – they need pollinators. Pollinators provide pollination services to over 180,000 different plant species and more than 1200 crops. If we want to talk dollars and cents, pollinators add 217 billion dollars to the global economy, and honeybees alone are responsible for between 1.2 and 5.4 billion dollars in agricultural productivity in the United States. In addition to the food that we eat, pollinators support healthy ecosystems that clean the air, stabilize soils, protect from severe weather, and support other wildlife.



## **WHAT DO WE KNOW ABOUT THEIR STATUS?**

Pollinator populations are changing. Many pollinator populations are in decline and this decline is attributed most severely to a loss in feeding and nesting habitats. Pollution, the misuse of chemicals, disease, and changes in climatic patterns are all contributing to shrinking and shifting pollinator populations. In some cases, there is not enough data to gauge a response, and this is even more worrisome.

## **POLLINATORS BY NUMBERS**

Three-fourths of the world's flowering plants and about 35 percent of the world's food crops depend on animal pollinators to reproduce.

There are 20,000 different types of bees in the world, with an estimated 4,000 bee species native to North America. Along with the famous European honey bee we know and love, many of these native bees can help increase crop yields. Some scientists estimate that one out of every three bites of food we eat exists because of animal pollinators like bees, butterflies and moths, birds and bats, and beetles and other insects.