



MEET OUR POLLINATORS



WILL I GET STUNG?

Inviting more pollinators to your property won't increase your chance of getting stung. Solitary bees and wasps are timid, even at the nest. Wasps that form colonies, like yellowjackets and paper wasps, will defend their hives, but they are important pollinators and pest control. So give their nests some space, and admire them while they are foraging on flowers!

DO ALL BEES LIVE IN HIVES?

Most bees do not live in hives, or make honey! The same goes for most wasps. The vast majority of pollinator species are solitary, meaning there are no workers or queens, and related individuals do not live together. Lone females forage for pollen (bees) or hunt invertebrate prey (wasps), which she uses to provision her nest for her future offspring. Most bees and wasps dig an underground burrow, while some others use preexisting cavities or bore into pithy plant stems or wood.



Blueberry Cellophane Bee Nesting

GENERALISTS AND SPECIALISTS

Not all bees visit the same flowers. In the northeast, around 15% of bee species are specialists. Specialists evolved to collect only pollen from certain native plants – in some cases, just one kind of flower. Even generalists, which visit many types of flowers, usually have preferences for deep or shallow flowers based on their tongue lengths. Offering pollinators a variety of native flowers can support more species. Goldenrods, willows, and blueberries have the most specialists in the northeast, making them excellent choices for a pollinator-friendly yard.

CITIZEN SCIENCE

Help researchers protect pollinators by documenting your sightings. Take photos of what you see, and upload them to one or more of these citizen science websites.

- iNaturalist
- Bumble Bee Watch
- BugGuide

FURTHER RESOURCES

Learn more about native pollinators and landscaping with native plants, including finding the right plants for your yard and how to convert your lawn into a pollinator meadow.

WEBSITES:

Habitat Gardening in Central New York
<https://www.hgcny.org/>

SUNY-ESF Restoration Science Center
Lawn to Meadow Program
<https://www.esf.edu/research/restorationscience/lawn-to-meadow.asp>

Xerces Society for Invertebrate Conservation
<https://www.xerces.org/pollinator-resource-center>

Pollinator Pathway
<https://www.pollinator-pathway.org/>

BOOKS:

- *Bringing Nature Home* by Doug Tallamy
- *Pollinators of Native Plants* by Heather Holm
- *The Bees In Your Backyard* by Joseph Wilson and Olivia Messinger Carril



THE INFORMATION IN THIS BROCHURE IS PROVIDED BY:

Restoration Science Center at the SUNY College of Environmental Science and Forestry
<https://www.esf.edu/research/restorationscience/>



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MEET OUR POLLINATORS

Did you know there are hundreds of different kinds of pollinators in New York State? Each one has a unique role to play for ecosystems and our food supply. Bees are among the only insects adapted to collect pollen, making them some of the best pollinators. New York has over 400 species of bees, and there are around 3,600 species in North America. They come in every shape, size, and color, from blue to green to red, some fuzzy, some not. Many are only active during a certain part of the season. Honeybees are a common kind of bee, but they are not native to North America.



Top Left:
Golden Northern Bumblebee

Left:
Pure Gold-Green Sweat Bee

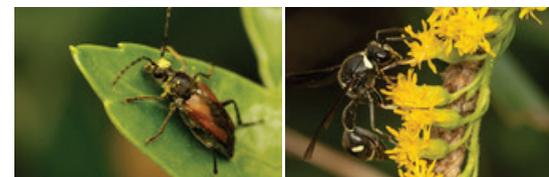
Above:
Leafcutter Bee

Other insects pollinate too, including wasps, flower flies (or hover flies), butterflies and moths, and some beetles. Ruby-throated hummingbirds are also important pollinators of a few wildflowers in the northeast.



Monarch Butterfly

Hummingbird Moth



Flower Longhorn Beetle

Fraternal Potter Wasp

Photos Courtesy of Max McCarthy and Molly Jacobson

NATIVE POLLINATORS ARE IMPORTANT

Native pollinators contribute around \$3 billion annually to agriculture in the United States. Wild bees like mason bees, mining bees, and bumblebees are often more efficient and effective pollinators than honeybees. Blueberries, apples, tomatoes, and squashes depend heavily on pollination by native species.

Ecosystems also rely on native pollinators. It takes a diversity of species to pollinate all of our wildflowers, and that diversity safeguards ecosystems against disasters, both natural and man-made. Those plants go on to be food and habitat for other wildlife. In addition, the caterpillars of butterflies and moths are a critical food source for songbirds and their chicks.

POLLINATORS IN TROUBLE

Some kinds of native pollinators, including several bumblebee species, are in serious decline or even at risk of extinction. The primary culprit is habitat loss, due to intensive agricultural practices and urban development. Bees do not have the amount and kinds of flowers they need, and often not throughout the whole season. Use of neonicotinoid pesticides on crops and lawns, pathogen outbreaks, competition with invasive species, and climate change are also playing a role in wild bee declines. These have had negative impacts on honeybee populations as well.

RECENT RESEARCH ON THREATS

From 2017-2021, The Empire State Native Pollinator Survey studied the four major groups of pollinators in New York: bees and wasps; flies; beetles; and butterflies and moths. The study concluded that 38% of native pollinators are in danger of becoming locally extinct, with some estimates reaching as high as 60%. These findings are raising awareness of the future of various pollinator species across New York State and leading experts to determine what we can do to ensure the continued existence of native pollinators in the state's ecosystems.

HOW TO HELP POLLINATORS

The best thing you can do to help pollinators is to landscape and garden with plants native to this region. This goes for schools, businesses, and city parks too.

Native plants:

- Provide pollen and nectar to adult pollinators, and act as host plants for native butterfly and moth caterpillars. This will benefit songbird populations too.
- Generally require less maintenance than non-native garden flowers. Native species are adapted to the local climate and soils, and do best without fertilizer.
- Help prevent erosion and runoff due to their root systems, which are deeper than turf grass. This also means they are more drought-tolerant and need less water.

WHAT YOU CAN DO NOW

- Consider reducing the size of your lawn and replacing a portion with native grasses, a meadow, or a pollinator garden.
- Reduce or stop your use of pesticides in your yard, and avoid buying plants treated with neonicotinoids.
- Create nesting and overwintering habitat for pollinators by leaving bare patches of soil, leaf litter, stumps, and logs on your property.
- Support small farms that use sustainable practices that promote beneficial insect populations and soil health.

AS MORE PEOPLE PLEDGE TO CREATE POLLINATOR HABITAT, WE CAN BUILD CONNECTIVE CORRIDORS THAT WILL PROTECT BIODIVERSITY FROM FUTURE THREATS LIKE HABITAT FRAGMENTATION AND CLIMATE CHANGE.

NATIVE POLLINATOR PLANTS

There are hundreds of choices of native plants for your yard or garden. This includes more than just wildflowers; native trees, shrubs, grasses, and ferns all provide important food and habitat for pollinators. Try to offer an array of flowers that bloom from spring to fall. The following examples are deer-resistant and easy to find at many nurseries.



BUTTERFLY MILKWEED

Asclepias tuberosa
(full sun, dry – mesic)

Attracts: bumblebees, leafcutter bees, sweat bees, butterflies



WILD BERGAMOT (BEE BALM)

Monarda fistulosa
(sun – part sun, dry – mesic)

Attracts: bumblebees, leafcutter bees, solitary wasps, butterflies



VIRGINIA MOUNTAIN MINT

Pycnanthemum virginianum
(sun – part sun, mesic – wet)

Attracts: bumblebees, sweat bees, solitary wasps, butterflies



WILD COLUMBINE

Aquilegia canadensis
(sun – shade, dry – mesic)

Attracts: bumblebees, sweat bees, hummingbirds



FOXGLOVE BEARDTONGUE

Penstemon digitalis
(sun – part sun, dry – mesic)

Attracts: bumblebees, digger bees, mason bees, small carpenter bees



RED-OSIER DOGWOOD

Cornus sericea
(sun – part sun, mesic – wet)

Flowers attract mining bees and sweat bees, fruit attracts migratory birds