



Passion for Pollinators

Pollinators

Pollen is a powdery substance formed by seed-producing plants. Cone-bearing and flowering plants produce seeds. Pollen is produced by the male cone (cone-bearing plants) or by the anthers (flowering plants). Pollen contains a non-reproductive cell or cells as well as a reproductive cell that will become two sperm cells.

Pollination is the process of transferring the plant's male reproductive cells (pollen) to the plant's female reproductive structures (stigma and style) so that sperm and egg can meet resulting in a new plant. The female structures are located in a different place than the male structures.

Pollinators are animals that transfer pollen to fertilize plants. Many insects and some bats are pollinators. Hummingbirds, some monkeys, some rodents and other animals are pollinators, too. Humans can be pollinators as well! Not all plants need pollinators, but about 85 percent of them do. These plants would not be able to produce seeds without pollinators. In Illinois, the ruby-throated hummingbird (*Archilochus colubris*) and some butterflies, moths, bees, flies and beetles are pollinators.

Do the animals purposely pollinate the plants? No. They are interested in feeding upon the sweet nectar produced by the flowers and/or collecting some of the pollen to mix with nectar to feed their young. While doing so, pollen falls on them, getting trapped in their hairs or sticking to the animal. As the pollinator moves within flowers, some of the pollen may drop onto the female flower structures. There will still be plenty of pollen attached to the pollinator for it to use as food. Depending on the type of plant, the pollen may need to be moved within a flower, to a different flower on the same plant or to a flower on a different plant of the same species.

Why Are Pollinators Important?

Pollinators are of great value to native plants and agricultural crops. In the United States, more than 150 crop plants require pollinators. Pollinators help insure that we have food to eat. It is estimated that one of every three bites of food that we eat is related to the actions of pollinators. Many of our beverages are the result of the work of pollinators, too. The plants that pollinators assist also provide us with fibers, edible oils, medicines and other products.

Pollinators provide more than \$10 billion in economic value annually in the United States, but they are also vital to the existence of native plants and all of the living things that depend on them. Without pollinators, many plants could not reproduce. Without these plants and the food, shelter, oxygen and ecosystem services that they provide, many terrestrial animals, including humans, could not exist.

Pollinator Population in Decline

Pollinators are in decline not only in Illinois but worldwide. Habitat loss, pesticide use, mites, competition from nonnative species and diseases are killing pollinators.

As an example, let's look at bumble bees. They require three types of habitat to complete their life cycle. They need a suitable area for nesting (such as an abandoned rodent burrow). They need a site for overwintering (like mulch or rotting logs). They also need an abundance of native wildflowers for food from spring through fall. If any of these requirements can't be met then the bumble bees must move to a new location that is more suitable, live the best they can in a marginal habitat or die.

As the number of pollinators continues to decrease, the amount of viable seeds from the plants that they pollinate will also be smaller, leading to fewer of these plants, fewer flowers and less pollen and nectar for pollinators.

Providing For Pollinators

Pollinators are vital to the continued existence of most plant species, the production of agricultural crops and in effect to terrestrial life on earth. Each of us can take actions that can benefit pollinators.

- Plant native pollinator plants. A good pollinator garden has native plants that attract and support pollinators at all stages of their life cycle. Included should be flowers that provide pollen and nectar from early spring through late fall. Add flowering trees. Use plants with flowers of varying shapes. Add bunch grasses to the planting for nest sites for ground-nesting bumble bees.
- Set your mower to mow at a higher level. Leave dandelion and clover flowers in spring for pollinators that are active early.
- Provide habitat for bumble bees.
- Buy organic and locally produced food.
- Join citizen-science efforts to track pollinator populations, such as the BeeSpotter program of the University of Illinois.
- Provide shelter and overwintering areas for pollinators.
- Use chemicals only when necessary and use the least toxic chemical options.
- Save some dead limbs or logs in your yard or garden for native bees to nest in. Conserve snags, brush piles and pithy stemmed plants.
- Install a native bee nesting box.
- Provide bare patches of soil for ground-nesting bees.
- Develop a woodland, prairie, pond or wetland habitat.
- Educate others about wildlife habitat issues.
- Encourage land managers to increase native wildlife habitat.
- Support conservation efforts for wildlife, such as the Illinois Wildlife Preservation Fund.
- Leave dead plant materials over winter including the stems and seed heads.