

WHAT'S ALL THE BUZZ ABOUT BEES?

Butterflies get all the glory in the insect world. With their colorful wings and fluttering flight, they captivate children and adults alike. Whole gardens are planted just to attract them with flowers producing sweet nectar. Certainly, no garden should be without the joy of butterflies or the joy of flowers.



Gulf Fritillary butterfly



Anthers with grains of pollen.

Beyond its beauty to us, though, a flower's purpose is to reproduce, to make seeds to continue its species. For this, of course, the flower produces pollen and needs the pollen moved from anthers to stigma. Basic science, but what does this have to do with butterflies and bees? Flowers need pollinators!

Butterflies are beautiful but are incidental pollinators. They're only after nectar, the sweet sugar that provides energy for flight. They have no need for pollen. They may pollinate a few plants unintentionally while sipping, but they have no use for the pollen they accidentally pick up from the flowers.

Bees, though, need both nectar and pollen. Nectar for energy, pollen for protein. They purposely collect pollen, for themselves and to feed their young. As they collect pollen, they perform the exchange that flowers need to produce seed. Flowers need bees; bees need flowers. From pre-dawn hours to dusky twilight, bees are at work pollinating not only our garden flowers, but also wildflowers, native fruits and the flowers of important vegetable and fruit crops.



Bee on garlic chive flowers

When most people think of bees, they think of the Honeybee (*Apis mellifera*), a European import brought by farmers as they migrated from Europe to the Americas. While there are wild colonies of honeybees, most live in manufactured hives provided by bee keepers. These colonies can be transported around the country as various crops flower. About 150,000 colonies are rented annually to U.S. growers providing pollination for such commercially cultivated crops as almonds, apples and cherries.

But honeybees can't take all the pollinator glory. There are over 4,000 species of native bees in the United States. Residing in the Americas long before honeybees, native bees have become extremely efficient at pollinating native plants. Some native bees have even become specialists, pollinating only certain plant species or families. Squash bees (*Peponapis* sp) pollinate flowers



Squash bees on pumpkin blossom

of pumpkins, melons, squash and other cucurbits. In-tune with the rhythm of the cucurbit flowers, squash bees begin their work at or before dawn just as the blossoms open. They plunge right in, efficiently gathering pollen and nectar and speeding to the next open blossom. Late rising honeybees visit much later in the day when the squash blossoms are past their prime and they visit blossoms at a slower pace.

While only active for a few weeks each year, the activity of the southeastern blueberry bee (*Habropoda laboriosa*), coincides with the blooming of...yes, blueberries. Using her buzz pollination* this hard-working bee can visit up to 50,000 flowers in her brief lifespan, pollinating enough to produce 6,000 blueberries. Also using the buzz pollination* native bumble bees (*Bombus* sp.) are so effective at pollinating tomatoes, that they are being used by commercial greenhouses that grow tomatoes year-round. Other plants requiring this specialized technique include potatoes, eggplant, peppers and even cranberries.



Southeastern blueberry bees

*Buzz Pollination occurs when a bee attaches itself to a flower and rapidly vibrates its flight muscles. This causes the entire flower to vibrate and loosens the pollen which then flows out the opening in the anthers. Only certain flowers require this form of pollination. Only certain species of bees perform this type of pollination

From almonds to zucchini, from the Tongass National Forest in Alaska to the Ocala National Forest in Florida, bees are the primary pollinators of flowers and food.

...And we are losing them at an alarming rate!

Next month we'll explore the causes of this loss, the measures being taken to aid the recovery of this vital insect and the efforts we as gardeners can make to help this most important recovery.

Until then, take a look at the information in the following links to discover more about this fascinating pollinator:

[USDA Forest Service: Introduction to our Native Bees](#)

[University of Colorado: Bees' Needs](#)

[US Forest Service: Importance of Bees in Natural and Agricultural Ecosystems](#)