

## Gardeners can learn to attract and keep pollinators

Wild honeybees have all but disappeared from yards across America. Many kinds of butterflies also are becoming scarce. But gardeners have options if they need pollinators to help produce a healthy food supply.

No cause has been found for the worldwide decline in pollinators, but contributing factors include pesticides, habitat loss, pollution, disease and pests.

An estimated 200,000 species act as pollinators, transferring pollen grains from one flower to another, facilitating fruiting and seed production. About 1,000 are birds, bats, and small mammals like mice and voles. The rest are insects: bees, hornets and wasps, butterflies and moths, ants and beetles, even houseflies and mosquitoes.

On nearly every continent, native bee populations have seen dramatic declines, said Gary Mast, a deputy undersecretary with the U.S. Department of Agriculture.

"In China, many fruit growers are pollinating flowers by hand because improper pesticide use has killed the bees in the orchards," Mast said. "And nearly two-thirds of Britain's 25 species of bumblebees are in decline."

Pollinator species that are disappearing in North America include some butterflies, bats and hummingbirds, as well as honeybees, the most efficient pollinators, according to a report by the National Academy of Sciences National Research Council.

Mast estimates that bees pollinate one-third of the world's crops, a service calculated to be worth around \$70 billion a year.

### So what can gardeners do to help pollinators?

Landscaping with plants that appeal to them can secure a season-long series of visitors. Artificial shelters like bee condominiums and bat houses could encourage them to stay.

Pollen- and nectar-rich flowering plants like butterfly weeds (*Asclepias tuberosa*), black-eyed susans (*Rudbeckia* species), coneflowers (*Echinacea purpurea*), milkweeds (*Asclepias* species), phlox (*Phlox paniculata*, Carolina), Queen Anne's lace (*Daucus carota*), sedum and sunflowers (*Helianthus* species) appeal most to bees and butterflies, said James Dill, an entomologist with the University of Maine Cooperative Extension.

Hummingbirds prefer cardinal flowers (red *Lobelia*), Columbines (especially the red *Aquilegia* species) and trumpet vines (*Campsis*).

"Red, trumpet-shaped flowers are the most popular thing you can put in your yard to attract pollinators," Dill said. "Even though they're small, phlox have a nice supply of nectar. They also have shallow trumpets and even small insects can reach into those."

### **Some other plant-centered suggestions for attracting pollinators:**

- **Succession planting.** Food plants should be available from early spring well into autumn. Bees need nectar and pollen to survive. "You especially want flowering plants for butterflies during mid- to late season, when butterflies are most prevalent," Dill said.
- **Provide water.** A dripping faucet, birdbath or mud puddle attracts bees and butterflies. Change the water frequently to discourage mosquito breeding and to avoid chemical contamination.
- **Plant native perennials.** These hardy flowers provide many colorful returns and produce large nectar supplies.
- **Sunny sites.** Bees are more active when warm, and most flower varieties require several hours or more of sun per day to produce nectar and pollen.
- **Add food plants for the juveniles.** "Think of the life cycles of the insects you're trying to attract," Dill said. "Figure out their food sources."

### **Avoid:**

- **Herbicides and insecticides,** which are especially harmful to bees and butterflies. Choose non-chemical solutions for insect problems. "One of the things we tell our farmers is be careful when spraying," Dill said. "If you're an apple grower, look and see what's underneath the tree. Be mindful about time of day, wind conditions, bee activity and whatever else is around."
- **Many "horticultural plants"** such as marigolds, mums and roses bred as doubles contain little or no pollen. Their many petals make it impossible for bees and other pollinators to gather nectar, entomologists say. Select single petal flowers like strawberries, cranesbill (geraniums) and daisies that provide easier access.
- **Cleaning up.** The casual look is in if you want pollinators to take up housekeeping on your property. Bees often nest in undisturbed shrubs or grass.

"Condition yourself to the beauty of natural areas," said Laurie Adams, executive director of the Pollinator Partnership, a San Francisco-based nonprofit group that promotes pollination and biodiversity. "Put up a sign that says pollinator garden' if it looks a little unkempt. Ground nesting bees need some debris nearby."

Learn all you can about plants native to your area and observe which beneficial insects are visiting the garden, Adams said.

"Diversify with flowering plants known to attract particular pollinators," she said. "That reduces the pesticide load, creates something attractive that will last for years and benefits the environment."

- Dean Fosdick / ASSOCIATED PRESS