

Moths, butterflies are prominent pollinators

Many bugs are transportation for propagation

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Take some time to study the flowers in your garden and see if you can spot their pollinators.

You will be looking for butterflies, moths, skippers, wasps, flies, bees. And don't forget the mosquitoes.

There are 70 kinds of bees in the Everglades, says Keith Waddington, University of Miami entomologist who is a bumblebee specialist. That compares with 270 kinds in the deserts of the American Southwest.

Two prominent groups of local bees are leafcutter bees and sweat

bees. Leafcutters store pollen on hairs on their bellies rather than in leg pouches as honeybees do. Leafcutters nest in stems. They cut a piece of leaf from a plant, take it to a hollow stem, and make a little ball or cell inside the stem. Then they collect pollen and put it in the cell, lay one egg inside and close off the cell. They stack up cell upon cell, so "the nest ends up being a long tube," Waddington said. "Then the bees hatch in reverse order; the last hatches first."

Sweat bees are tiny, metallic green or blue or black. "They look a lot like flies," Waddington said. Sweat bees nest in the ground.

Few bumblebees

Carpenter bees — the ones that buzz incessantly at your face when you go to the park or the Everglades — make a nest similar to that of leafcutters, but they

make it in wood or logs, cutting a hole with their mandibles. "They don't bring in leaves, but make the cell of sawdust they paste together with secretions," Waddington said.

Bumblebees are not common this far south (their furry coats allow them to work in cooler climates), but there are one or two types found in South Florida. Bumblebees pollinate by adjusting the frequency of their buzz, which vibrates the flower's pollen-containing anthers until pollen falls out of little pores. Bumblebees nest in the ground, probably in rodent burrows, said Waddington, making egg cells of wax.

With the growing popularity of butterfly gardens, butterflies are more apparent in the urban areas of South Florida and around the country. There are 760 species of butterflies in North America, and South Florida has 119 spe-

cies probably pollinating many of the nectar plants they visit, such as butterfly weed, milkweed, goldenrod, lantana.

"A lot of butterfly plants are visited by other insects, such as bees and wasps," says Suzanne Koptur, botanist at Florida International University.

Mosquitoes as pollinators?

Hawkmoths or sphinx moths pollinate several South Florida plants. Moths usually fly at night and are attracted to aromatic, white flowers. There are a few that fly in the day, however.

Wasps and flies are well-known pollinators of avocados and mangoes, but a fly also pollinates the native *Guettarda scabra*, rough-leaf velvet seed of the coastal hammocks.

"Some flies have a long, straight mouth part sticking out like a straw," said Koptur. "That's an indicator that it is a

pollinator."

One of Koptur's students is studying mosquitoes as pollinators. "There is a large number of plants with nectar that seems likely mosquitoes do pollinate," she said.

There are no known mammal pollinators in South Florida (the bats that occasionally show up here eat insects), but hummingbirds that migrate through pollinate red, tubular flowers, including pagoda clerodendron and bottlebrush trees. Spot-breasted orioles are thought to pollinate exotic sausage trees, taking the place of bats that do the work elsewhere.

Many plants from other places that have found their way to South Florida go unpollinated because the right insects are not here, such as allamanda, says FIU's Tom Pliske.

The opposite is true, also. Pollinating wasps for exotic ficus trees have found their way to South Florida, and these trees now are setting seed. Brazilian pepper is an attractant for a whole host of various insects, including honeybees taken there by beekeepers because the flowers are so full of nectar.