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POLLINATORS OTHER THAN HONEY BEES

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California Native Pollinators - because of the European Honey Bee Colony Collapse, many farmers are turning to native bees and other insects to pollinate their crops. Native bees were found to be 100% more efficient than honey bees in pollinating almond trees. Native pollinators are often solitary and do not produce honey.

BEES ARE DESCENDENT FROM WASPS

Most wasps are carnivores, but some began to feed on flowers and then evolved to feed on flower nectar and became bees. For this reason, some bees still look like wasps. Bees and wasps contain solitary and social species, living in a brood and raising their young together. In the social groups, the queen overwinters and emerges each spring to build a new colony. All female wasps and bees have stingers.

BUMBLE BEES ARE SOCIAL BEES

There are about 50 species of native bumble bees in the United States: 26 species in California. Their colonies are never as big as honey bees and they nest in holes in the ground. The Queen is much larger than her brood. After the first brood is raised each year, she seldom leaves the nest. Queens overwinter and start a new nest each spring. Bumble bees have "baskets" on their hind legs to gather pollen. Bumble bees are sometimes used in commercial green houses to buzz or sonicate tomatoes flowers for pollination.

CARPENTER BEES

About the same size as Bumble Bees, these black, shiny bees dig or chew tunnels into soft wood to lay their eggs. They can be very destructive to wood. To prevent bee tunneling, paint the wood or use other material to plug the holes. Carpenter bees are the ones who will drill a small hole in a flower near the base to feed from nectar because it has short mouth parts.

SQUASH BEES

These bees look like honey bees but live solely on pollen from plants in the cucurbit or squash family including cucumbers, pumpkins and gourds. It has been estimated they are more effective pollinators of the cucurbit family than honey bees. They nest in the ground often right under the plants.

CUCKOO BEES

These bees are parasitic bees. They do not build nests nor collect nectar, but rather wait outside other bees' readymade nests to move in and lay their eggs. Once the egg hatches, it feeds on the larva of the nest builder.

MASON AND LEAF CUTTER BEES

These bees use leaves and/or mud when they construct their nests. The blue orchard bee (Osmia lignaria) is being managed for pollination of sweet cherries and almonds in the western USA. Farmers have been

supplying drilled boards for nesting sites. This has proved to be an effective method in replacing the European Honey Bee.

SWEAT BEES

Sweat bees are attracted to sweat from where they get their name. They are a group of bees who have shiny metallic colors. Usually, solitary bees nest in the ground, but they sometimes will share work. A member of this family is the alkali bee, who is a major pollinator of fields of alfalfa. These bees often nest in vast areas of groups of bees in solitary nests, rather like a neighborhood.

BUTTERFLIES AND MOTHS

Butterflies feed on nectar and move from blossom to blossom moving nectar around. Many moths, particularly the large Sphinx moths, are excellent pollinators. These moths have a long proboscis which can reach deeply into night-blooming flowers.

HUMMINGBIRDS

Hummingbirds, in their constant search for the flower to feed from, are also moving nectars around. They like deep-throated flowers and, with their long tongue, gather to the last drop, moving to another flower immediately and, thus, exchanging pollen needed for pollination.

BATS

In the California deserts, 2 bats feed on cactus plants and spread pollen to other cactus. They may even feed from the hummingbird feeder. Like the Sphinx moths, they are only seen at dusk or later.

HABITAT FOR POLLINATORS

These native pollinators evolved with native plants. In a garden for pollinators you should have plants that bloom at different times of the year so there is always food available. And natives and Mediterranean plants take less care and water. Your garden that all these bees live and nest in should be free of pesticides. With the right balance, they will control each other.

Additional Reading:

Bee Basic - An Introduction to our Native Bees, USDA and US Forestry Service
Pollinator Conservation Handbook, The Xerces Society in Association with the Bee Works
The Forgotten Pollinators, Stephen L. Buchmann and Gary Paul Nabhan
Website: www.laspitias.com/insects/california-insects-pollinators
Website: http://nature.berkeley.edu/urbanbeegardens