

# A Brief History of Bees and why we need them.



Bees first appeared on Earth at least 80 million years ago. The ancestors of modern bee species lived alongside the dinosaurs - a time when giant pines, cedars, tree ferns and cycads were the main plants and the air swarmed with primitive insects including oversized dragonflies and giant butterflies. During this time, the first flowering plants (angiosperms) appeared and a more effective way of pollination was needed, other than simply relying on the wind. The challenge was how to increase the chances of pollination and reproduction to ensure the success of future generations. The solution was to attract insects to assist with pollination. Over time flowers evolved a range of advertisements to attract pollinators, including bright colours, strong fragrances, interesting patterns and unusual shapes. They also developed sugar-rich nectar as a reward. Thus began the mutualistic relationship between flowering plants and bees and it was to change the appearance of the Earth forever. Now there are hundreds of

thousands of species of flowering plants and they are the most successful land plants on Earth. Scientists have long chalked this up to the relationship between pollinators and their assistance in reproduction.

There are thousands of bee species that live around the world. The European Honey Bee is the best known as it produces honey, beeswax, propolis and royal jelly, which are all used in a range of ways. Interestingly, bees are the only insect that produce food eaten by humans. They are also the only animal that doesn't harm what it eats but actually enhances it.



Australia has 1600 native bee species, most of them are solitary and don't store honey. Only 11 species of social bees make and store small amounts of honey for their own food.

While it is well known that bees produce honey, a lesser known fact is that most of our other food sources also rely on bees, as conservative figures show that bees pollinate at least ONE mouthful in every THREE that we eat! The production of most fruit, nuts, vegetables, seeds and even livestock feed are dependent on the existence of bees, including Australian native bees.



When living things have relationships with other living things it is called 'symbiosis'. Bees and flowering plants have a mutually beneficial relationship whereby the bees assist with pollination and fertilization of the plant and in return collect nectar and pollen not only for themselves but also to feed their young. Bees have a number of specialised adaptations that make them particularly good at carrying large volumes of pollen. They can visit many flowers before returning to their hive, which increases the success rate of fertilization of the plants. Due to bees being excellent pollinators they play a pivotal role in farming, food production and the health of our ecosystems.

However, bees around the world, including in Australia, are in serious trouble. Overuse of pesticides and herbicides are causing bees to become more vulnerable to disease and pests. Modern agricultural practices and urbanisation are greatly reducing bee habitat and food sources. As a result, scientists are seeing a large decline in bee populations. This poses a threat not only for our food production but our environment as a whole, as flowering plants rely on pollinators to survive.

The good news is we can all do things to help ensure the survival of bees, such as:

- Plant 'bee friendly' plants in clumps in your garden and let the vegetables flower. Bees love lavender, rosemary, sage, thyme, perennial basil, borage, grevilleas, bottlebrush and tea trees whilst Eucalypts provide pollen and nectar for their food.
- Use no pesticides or herbicides in your garden. For 'bee friendly' pest management try companion planting.
- Before you buy, ask if plants have been treated with pesticides toxic to bees.
- Create 'bee friendly' garden signs for your front garden to advertise what a 'bee friendly' garden is.
- Put stones in bird baths to stop bees drowning.
- Buy fruit and vegetables that have been locally and sustainably grown.
- Buy local honey.

