NATIVE BEES

BushBlitz
SPECIES DISCOVERY PROGRAM

AUSTRALIAN NATIONAL BOTANIC GARDENS

Alive with discovery

There are over 1,600 species of native bees in Australia and they are important pollinators for Australia's unique flora.

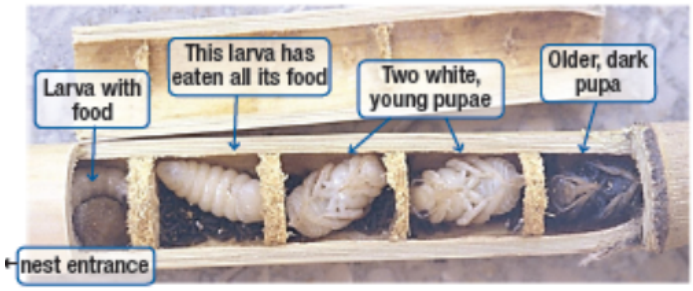
The buzz about bees!

- The bees we usually notice in our gardens are not native bees – they are introduced honey bees, *Apis mellifera*, which were imported from Europe in 1822 for honey production.
- Unlike honey bees, nearly all Australian native bees are solitary. There are only a few social stingless bees that produce honey.
- Native bees range in size from 2 to 24 mm long. They come in a range of colours – red, yellow, orange, green, blue, black and white. While some have dense fur covering their bodies, others are smooth, hairless and shiny.
- Apart from the stingless bees, all female native bees have a sting but they are not aggressive and many cannot even get through your skin.
- 'New' species of native bees are still being discovered. Since 2010, the Bush Blitz species discovery program has found over 100 native bee species that are new to science.

The life cycle of bees

All bees go through four stages in their life cycle - egg > larva > pupa > adult.

Solitary native bees make their nests by burrowing into soil, rotting wood or pithy stems. Each female nests alone. She stocks the cell with pollen and nectar and lays a single egg before sealing it. She makes multiple brood cells in one nest before closing off the entrance to protect it from intruders, such as ants and parasitic wasps.



Vital for agriculture

Like honey bees, native bees visit flowers to get nectar and pollen. While doing this they transfer pollen to other flowers, thus pollinating plants.

Native bees play a particularly important role in pollinating native plants and horticultural crops.

Most flowers release their pollen passively when a bee just lands on them, but many native flowers and some crops only release their pollen when a flower is vibrated rapidly – this is called "**buzz pollination**".

Honey bees cannot buzz pollinate, so plants that require buzz pollination depend on native bees for reproduction.

Blue banded bees

Blue banded bees are Australian native buzz pollinators.

A blue banded bee recorded on the Hiltaba Station Bush Blitz © Bush Blitz

They are common in the Australian National Botanic Gardens. Look for them on blue and yellow flowers. Often you will hear them buzzing before you see them!

Tomato plants are buzz pollinated. Australian tomato growers using greenhouses have to use an "electric bee" vibrator to pollinate flowers, a very time consuming task. Researchers from the University of Adelaide have found that tomato plants pollinated by blue banded bees produce larger and tastier tomatoes!

Blue banded bees make their nesting burrows in the ground, making them very efficient pollinators of crops such as canola. Honey bees only travel a certain distance from their hive to gather nectar which can result in only the part of a field close to a bee hive being well pollinated. In contrast, the blue banded bees will develop burrows in the ground throughout a field, pollinating the whole field.

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Carpenter bees

Carpenter bees are so named because they carve nest burrows in soft timber or pithy stems using their strong mandibles (jaws).

The largest native bee is the Great Carpenter Bee of the tropical north and northern NSW, which measures up to 24 mm long.

Great Carpenter Bee
image sourced aussiebee.com.au

This teddy bear bee was recorded on the Lake Torrens Bush Blitz
© Earthwatch

Teddy bear bees

Most species of these rotund, furry brown bees are 7 to 15 mm long. They build shallow nest burrows in soft soil and sometimes nest under houses. Each female builds her own nest burrow but many bees may nest together in one location, so they are semi-social.

Leafcutter bees

There are about 27 species of leafcutter bees known from across Australia. They range in size from 6 to 15 mm. Most are black with white or orange-gold stripes of hair on their abdomen.

Females cut circular holes in soft leaves. They use the circlular leaves to line the nests and close off each cell. When the nest is full they use more leaf circles to plug the hole.

image sourced aussiebee.com.au

Stingless bees

- There are at least 11 species of stingless bees. They are primitive social bees that live in colonies with a queen, drones and thousands of workers.
- Stingless bees are not found in the ACT and it is only in warm areas of Australia, such as Queensland and northern NSW, that they can produce more honey than they need for their own survival.
- Nests are mainly found in hollow trees. These bees were prized by Indigenous people as the honey was an important food source and medical remedy, plus nest resins were used as glue for making tools and weapons.

A native stingless bee (left) compared to a honey bee
image sourced aussiebee.com.au

Get into the buzz

There are many ways you can support our native bees, such as building a bee hotel for your garden and growing a variety of plants (native and food plants) to promote year round flowering.

Visit the bee hotel at the Gardens and, for information on how to build your own bee hotel, download our “How to make a bee hotel” fact sheet at **bushblitz.org.au/resources**.

There are a number of websites that provide information on native bees including:

- **actforbees.org/resources/australian-native-bees**
- **aussiebee.com.au**
- **australianmuseum.net.au/bees-suborder-apocrita**
- **beeaware.org.au/pollination/native-bees**