



Australian Native Bees Just to name a few...

About native bees

Australia is home to 1,600 native bee species. About 350 species have been recorded in a 100km radius of Parramatta, which includes the Sydney basin, Blue Mountains, Lithgow and Illawarra.

In these regions, there is only one social, native bee; the stingless bee *Tetragonula carbonaria*. They have a queen, thousands of female workers and store pollen and honey to survive over winter. Most native bees, however, are solitary and complete their life cycle alone. Solitary bees do not produce honey but they are very important pollinators.

Native bees come in a range of colours and are sized from 2 to 24 mm. Some have thick, furry hairs while others are smooth and shiny.

Why are bees important?

Bees drive biodiversity through pollination. Pollination enables seed formation and fruit development. Of the 352,000 flowering plants and crops nearly 90% rely on pollinators for reproduction. Bees are important pollinators of many food crops such as fruits, vegetables, berries, nuts, coffee, edible oils, stock fodder and many spices.

Sadly our bee populations are declining. As we clear land for urban development, remove plants and use pesticides we cause bee population losses.

By understanding more about our native and exotic bees we can help conserve their populations, thus supporting ecosystem biodiversity and also food security.

Bee Anatomy

Bee bodies are comprised of a head, thorax and abdomen. They have six legs and two pairs of wings. They have two antennae used to touch and "smell", two compound eyes and three simple eyes, mandibles (jaws) for biting, working pollen or wax.



Image: Marc Newman

Pollen collection

Both social and solitary bees collect pollen to feed their young. Female solitary bees carry pollen in their scopa; a collection of branched, bristled or plumose hairs which may be on the under belly (abdominal scopa) or on the hind legs (tibial scopa).

Attracting bees to your garden

The best way to attract bees to your garden is to have large patches of flowers. Many bees, especially Blue Banded and Teddy Bear Bees, are attracted to blue and purple flowers.

The greater variety of flower you can provide the greater diversity of bee you will attract. Plants that are known to attract bees include:

- Native plants like Tea tree, Hardenbergia, Eucalypt, Pultanaea, Westringia and Grevillea
- Exotic herbs like basil, parsley, coriander, celery, fennel, Lavender, rosemary, salvia, hyssop, borage
- Exotic flowering plants like buddleja, hebe and daisies

Make sure you plant a variety of different species so that there are flowers available all year round



Image: Elizabeth Richmond

Making habitats for bees

As we clear land to build houses or shopping centres, we remove natural bee habitat. We can, however, provide additional nesting habitat that are similar to their natural ones. Different bees like different habitats. Resin and Leaf-cutter Bees will nest in drilled hardwood. Masked and Reed Bees nest in bundles of lantana and bamboo. Blue Banded Bees can also be encouraged into rammed earth blocks.

When setting up your solitary bee nests place it somewhere you can watch the activity safely. Your nest should be set up out of the way and somewhere protected against the weather. When you are watching your bees DO NOT stand in the flight-path of exiting and entering bees, instead you should stand to the side of the nest. Although not aggressive, these bees CAN sting, so be careful.



Examples of man-made solitary bee nests

Just a few of our solitary bees

Common Name: Black Resin Bee

Size: Approximately 10 - 13 mm in length.

Features: Large, strong jaws used to collect plant resins.

Some species: *Megachile punctata*, *Megachile aurifrons*, *Megachile lucidiventris* and *Megachile deanii*.

Natural nesting habitat: Holes made by wood-boring insects.

Man-made nesting habitat: Drilled hardwood blocks.



M. punctata

Common Name: Reed Bee

Size: Approximately 3 - 8 mm in length.

Features: A shiny black head and thorax with a distinctive chestnut-coloured, wedge-shaped abdomen. Females often have a T-shaped, yellow mark on the face and a tibial scopa.

Natural nesting habitat: Stems of woody weed lantana, coral tree (*Erythrina* sp.), grass-tree spikes (*Xanthorrhoea*), tree fern fronds and other hollow stemmed plants.

Man-made nesting habitat: Small drilled holes. Small bore bamboo or dried Lantana stems.



Exoneura species

Common Name: Masked Bee

Size: Approximately 4 - 12 mm in length

Features: Sparsely haired with dark heads and brightly coloured facial markings, some have brightly marked bodies.

Some species: *Amphylaeus morosus* and *Hylaeus nubilosus*.

Natural nesting habitat: Stems of tristania, acacia and grass-tree spikes (*Xanthorrhoea*).

Man-made nesting habitat: Masked bees will nest in bamboo canes and small holes drilled in hardwood.



A. morosus

Common Name: Leaf-cutter Bee

Size: Approximately 12 mm in length.

Features: Large, strong jaws to cut discs of soft plant leaves to form a tubular nest. Half the males of the *Megachile* species have expanded forelegs which are flattened and often have long, sleek hairs used in part of the bees' mating ritual.

Some species: *Megachile maculariformis*, *Megachile serricauda*.

Natural nesting habitat: Nests are constructed in small cavities under bark or in rock crevices.

Man-made nesting habitat: Drilled hardwood blocks and large bamboo canes.



M. maculariformis

Common Name: Blue Banded Bee

Size: Approximately 15 mm in length.

Features: Blue stripes on abdomen. The female has dark facial markings and tibial scopa.

Some species: *Amegilla pulchra*, *Amegilla asserta*.



A. pulchra

Common Name: Teddy Bear Bee

Size: Approximately 15 mm in length.

Features: Covered in orange-brown hairs. The female has dark facial markings and tibial scopa.

Species: *Amegilla bombiformis*



A. bombiformis

Natural nesting habitat: Ground burrows.

Man-made nesting habitat: Blue Banded Bees can be encouraged to nest in artificial, rammed-earth nests.

Summary

Why are bees under threat?

- Urbanisation removes bees' natural habitat
- Urbanisation increases "flowerless landscapes"
- Pesticides contaminate bees' food sources

How can we help improve the health of our bees?

- Conserve existing bee habitat
- Provide habitat for bees
- Plant bee friendly flowers
- Reduce or stop pesticide use in your garden

How can we learn more?

- Contact Bee Business at megan@beesbusiness.com.au or visit the FB page www.facebook.com/BeesBusiness
- Make habitat to observe bees in your garden
- Observe your garden flowers for bee activity

To find out more please visit these websites

- www.beesbusiness.com.au
- www.aussiebee.com.au
- www.australiannativebees.com

Photographs: Bees Business unless otherwise stated

Special thanks to Dr Michael Batley, Australian Museum

Copyright © 2014

Disclaimer: Bees Business is not responsible for, and expressly disclaims all liability for, damages of any kind arising from the use, reference to or reliance upon information contained in this brochure.