



Did You Know

Commercial Bee Hotels are often horrible
'Death Traps' for native bees?



Here is 5 Issues with store bought bee hotels



Issue #1 – Imported

Many bee hotels sold in Bunnings, Aldi and Big W have been fumigated at customs (biosecurity) with insecticides and imported or made from treated materials, which are toxic to bees and insects.



Issue #2-Useless space

Many commercial bee hotels have useless compartments with empty space or pine cones or random pieces of wood which serve no purpose for native bees.

This drill bit is how deep each hole should be, yet is longer than both bee hotels combined!



Issue #3 – Depth

Commercial bee hotel cavities are too shallow never an optimal depth (10-15cm). Native bees lay female eggs first, and shorter nesting materials will cause population imbalances.

10mm Drill bit looks
tiny in comparison

All numbered holes are
too big for native bees



Issue #4 – Diameter

Commercial bee hotel hole widths are typically too large. The best hole diameters are between 3-9mm and anything larger than this will not suit native bees.



**Native bee
specific sizes:**



9mm



8mm



7mm



6mm



5mm



4mm



3mm

Issue #5 – No Variation

The holes drilled in commercial bee hotels apart from being too shallow are usually the same dimension, and its better to have 3,4,5,6,7,8,9 mm wide holes to cater for diversity of bees.



Make Your Own

Have a go yourself, all you need is 1) hollow/pithy stems and something to tie it together or 2) some native hardwood, extra long drill bits and a drill or 3) clay, sand and a pipe/container

Native Hardwood



**Grass
Carrying
Wasps –
*Isodontia***

Reeds/Pithy stems



**Reed Bees –
*Exoneura***

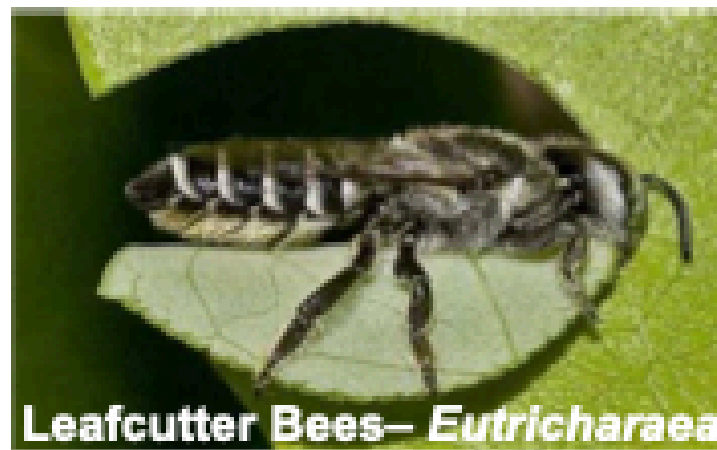
Bare Ground/Clay Block



**Sweat/Furrow Bees –
*Lasioglossum***



**Wasp
Mimic
Bees –
*Hyleoides***



Leafcutter Bees – *Eutricharaea*



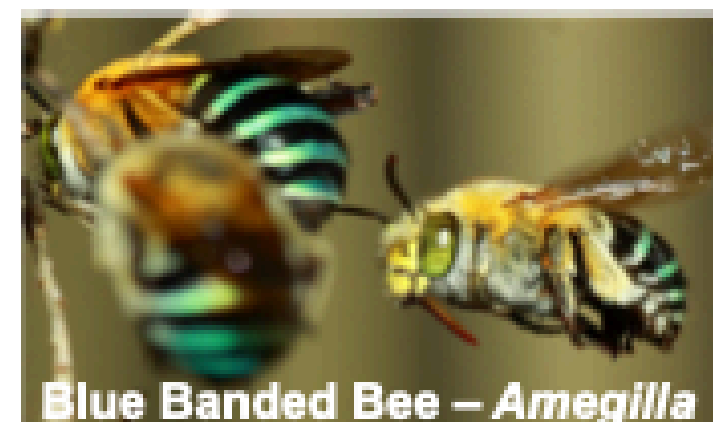
**Cuckoo Bee –
*Thyreus***



Resin Bees – *Megachile*



Masked Bees – *Hylaeus*



Blue Banded Bee – *Amegilla*

DO

Use 3-10mm Drill Bits

Many native bees are much smaller than invasive European honeybees. Masked bees (*Hylaeus*) prefer 3-5mm holes, while ~7mm get used by leaf-cutter bees (*Megachile*). Using drill bits bigger than 10mm may attract spiders, cockroaches and even lizards. Drill blind holes at least 100mm-150mm deep, and angle upwards so water doesn't collect at the bottom of the shaft.

Use Reeds, Bamboo & Pithy Stems

Locally sourced pithy stems, reeds and bamboo are great for cavity nesting bees. Make sure the diameter of the hollows isn't larger than 10mm, one end is closed, and they aren't treated with chemicals.

Use Native Hardwood

Bee hotels work best when simulating the natural environment such as Australia's gumtrees, banksias and wattles. Hardwood lasts longer and produces smoother shafts when drilled, which native bees prefer.

Shelter the Hotel

Give your bee hotel a roof. Place bee hotels at about eye level (1-2m high) and in an open area where there are flowering plants offering loads of nectar/pollen. Position the hotel to receive morning sun to stimulate foraging. Avoid shady areas.

Surround your Hotel with Flowers

A good hotel has restaurants close by. Plant native wildflowers from the families – Myrtaceae, Fabaceae, Asteraceae, Proteaceae. Some exotics like Salvia and Lavender are also good. Refer to the Wheen Bee foundation – "Powerful Pollinator guides" which are specific to where you live, such as South-East Melbourne. Also limit pesticide/herbicide use on open flowers.

Make A Bee Hotel

It's Easy, Get Crafting!

Did you know bee hotels are actually more like **nurseries**, where female bees lay their eggs? The eggs hatch and babies (larvae) grow, consuming stored pollen, and will emerge as adult bees to repeat the process until summer comes to an end. Follow the Do and Don'ts of building native bee hotels and get started, it's as simple as that.



Me – Clancy Lester
Native Bee Researcher



Baby bees/larva in
a bee hotel cavity (left)
Cavity nesting bee
hotels (top and bottom)



Lisa Warman - Air bee'n'bee

DON'T

Don't Buy Imported Bee Hotels

Commercially-made bee hotels are often inferior to homemade hotels because they are usually imported. They get fumigated at border biosecurity, are often built with the wrong cavity dimensions (too wide and/or too shallow), and use treated woods. Opt for Australian made hotels by knowledgeable distributors or have a go at making your own.

Don't Use Treated Wood

Treated woods have toxic chemicals like copper, chromium and arsenic solution forced into the wood to protect it from insects and microbes. Store bought bamboo also is often treated, so be careful when buying wooden stems too. Also avoid chemicals such as varnish or some paints.

Don't Use Plastic or Metal

Using plastic tubes for the hollows isn't ideal because they collect too much condensation. Metal casing also isn't optimal because the hotel can get too hot in the sun. Better alternatives include bamboo, pithy stems and paper straws.

Don't Face the Hotel South

Native bees need sunlight to warm up in the morning. In Australia, the southern side of objects is always shaded. So, avoid placing hotels on the south side buildings, or habitats and make sure to direct the bee hotel towards the north-east, NOT south.

Don't Set and Forget

Native bee hotels need to be cleaned at the end of winter before the warmer weather. With a pipe cleaner remove debris, dead cells, and spider webs. Using paper straws inside the holes can make refurbishing your hotels easier. It's possible to replace the straws as each become 'capped' and place these nests in an emergence box, this requires great care. After a few years your native bee hotel will most likely need to be replaced if mould, microbes or fungi is building up.

Make Your Own Bee Hotel For Native Bees

Other Designs

Ground Nesting Dwellings

Did you know that around 70% of Australia's native bees nest in the ground. Solitary bees, like blue-banded bees (*Amegilla*) love nesting in crumbly, sedimentary soils. Thus, you should consider making alternative bee hotels to suit the ground nesters too, and make multiple.

- ✓ Leave patches of un-mulched, bare ground in your garden.
- ✓ Have sheltered, excellent draining soils, and don't flood all of your garden when watering.

Build a Dwelling for Ground Nesters

- ✓ Recipe of part clay, part sand. Needs to be able to clump together but also crumble, so bees can dig into it.
- ✓ Make a few shallow indentations about the depth of your fingernail to encourage nest building from bees.
- ✓ Apply similar placement to wooden bee hotels, eg., in open areas facing N-E, near flowers, and sheltered but not shaded if possible.



Brenda Louise



Megan Halcroft

Help Preserve Our Native Bees

Australia has 1,650+ Native Bee species!



Our Native Bees Face a Range of Threats

Climate Change	Climate change is affecting the flowering of key food resources, reducing overlap in plant/pollinator. Heat waves and natural disasters also effect bees
Land Clearing	Agriculture and urban development has cleared a lot of native bees nesting habitat and foraging resources across Australia.
Exotic Species	European honeybees are not native and may compete with natives and encourage pest plants.
Pesticides	Bees get caught in the crossfire of insecticides in agriculture. Avoid using it in your garden.
Urbanisation	Cities are concrete jungles, the little available greenspaces are mostly grass monocultures with non-native trees

Help Out by Building a "Bee Hotel"

Improve urban biodiversity, boost native bee habitat, and support populations of our pollinators. Read brochure for more!

Resources

Know Your Guests (Native Bees)

- ✦ 'Bee Aware of your Native Bees (Australia)' – Facebook page
- ✦ 'The Buzz on Wild Bees' – Facebook page
- ✦ 'Guide to Native Bees of Australia' – Book by Terry Houston
- ✦ 'Bees of Australia' – Book by James Dorey
- ✦ 'Introduction to Australian Native Bees' – Book by Anne Dollin

Build Pollinator Gardens

- ✦ Best plants based on your postcode – 'When Bee Powerful Pollinators' planting guide whenbeefoundation.org.au/our-work/projects/powerful-pollinators/
- ✦ 'Creating a Haven for Native Bees' – Book by Kit Prendergast
- ✦ Nature Blocks – build back nature with free Conservation Volunteers Aus (app) - <https://mynatureblock.org.au/>

Extra Bee Hotel Information

- ✦ Aussie Bee – aussiebee.com.au/bee-hotel-aussie-bee-guide.html
- ✦ Wiki How – wikihow.life/Make-a-Bee-Hotel
- ✦ ABC Gardening – abc.net.au/gardening/how-to/bee-hotel/9440586

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Got Questions for a Bee Expert?

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Make Your Own Bee Hotel For Native Bees