Build a Bee Hotel

Bee hotels aim to provide a place for native bees to nest, overwinter and shelter.

The main advantage of a bee hotel is that it provides us humans with an easy place to observe the behaviour of nesting native bees. Many species of insects make their homes in our gardens, but we're not necessarily good at spotting them! Bee hotels also go by many other names (trap nest, insectary, nestbox, bee condo) and they can provide habitat for other insects and animals, too.

PROS

- Observation focus
- Easy to make
- Movable, removable, any size
- Education tool
- Can be ornamental / decorative

CONS

- Concentrates bees
- Limited value alone
- Parasites or pest risk?
- Favours certain species
- Pointless if not functional?

Most of the 1,600+ species of Australian native bees are solitary. That is, each female creates her own brood cells (nest) in which to lay eggs and leave some food (pollen typically) for her young to eat. She seals each cell and has nothing further to do with raising the young. Often female bees will nest in close proximity to each other, but they are each focussed on creating their own cells. This is very different to the shared, communal (or 'social') habits of European honey bees, which function together, and are referred to as a 'super organism'.

In nature, Australian solitary native bees typically create their nests in:

- **timber** - in holes created by other insects, like borers; or natural holes and splits, and sometimes further excavated by the bee;
- **pithy stems** - such as those of grasses, grass trees and other plants; or
- **the ground** - this is actually the most common nesting place, used by about 70% of native bees!

Construction and materials

Taking cues from nature, we can create bee hotels by drilling holes in hard wood; offering lengths of pithy stems such as bamboo, flax lily, kangaroo paw or reeds; or creating mud blocks by mixing clay and sand. As different species of bee have different preferences, you might like to start with a range of materials and sizes, and then build more when you've noticed which ones are most popular.

It is a good idea to contain all the parts of your bee hotel, for example within a pipe or pot for small hotels, or concrete block, wooden box or other container you have to hand. Ideally your container will keep all the parts of the hotel in place, and may help to protect the holes from the weather.

For timber/plant stem holes:

- Use untreated wood.
- Diversity of hole sizes – between 3mm and 10mm in diameter and preferably 70mm to 150mm deep (or as deep as your drill bit allows).
- At my place the most used holes are the 6.5mm and 8mm diameter ones.
- Try to fill your space or container with material, rather than leave a lot of empty spaces, if possible.
- Pithy stems can either be open or closed (some bees will excavate the material).
- The bees prefer holes that are blocked at one end.

Bee hotel notes, compiled by Karen Retra

For mud holes:

- I like to use 3 or 4 parts sand to 1 part clay with a little water to create the mud and put it into a container.
- Plant pots, pipes, tins or concrete blocks are among the many options to hold this mix.
- As it dries, add some holes if you wish (or wait for the bees to excavate their own).

Positioning your bee hotel

Ideally, protect the hotel from the weather by choosing a north-easterly aspect (morning sun, but protection from the baking western afternoon rays!) and not too much wind. Under an eave or roof is fine. The recommended height is above knee level and up to eye level – to make for easy viewing. Be sure to firmly secure the hotel so it doesn't move (swinging in the breeze is not ideal). Try to make the holes sit horizontal or slightly sloping downwards at the front – if rain runs in and pools inside, it causes problems.

FAQ

When will the bees move in?

When they feel like it. ☺ Sometimes the holes seem to need to be a bit weathered before the bees are interested. Other times, the first bee might arrive almost as soon as you install it!

How long until the young emerge?

Many species of native bee spend up to 12 months in the brood cell (nest) before they emerge. It can be fun to note when you saw the nest sealed, and when the bee (or other insect) emerged. Even if you don't see the bee, the seal tells you what is happening. Sometimes bees don't fill the cells to the end of the hole, so you might want to look with a torch to check for any progress.

What about other insects or visitors?

You might also see solitary wasps (not the nasty paper wasps or European wasps; they live in colonies), spiders, ants, lizards or flies at your bee hotel. That's generally ok; they will work out the balance between themselves. If you think your hotel is getting overrun with ants or spiders, you might want to try another spot or combination of materials as well, and see if that alters the residents you attract. Biodiversity is great!

Provide for bees' other needs:

- Grow a **diversity of flowering plants** (flower size, colour, shape, flowering season and length) to provide nectar and pollen
- **Avoid insecticides** and toxins (they usually kill the 'good guys' as well as the pests)
- **Offer non-floral resources** too, eg: water (with access via stones or stems or shallow edges, these insects are not swimmers!) and plant stems for male bees to roost on overnight; some bees also use plant resin and leaves.
- **Leave them to it.** Although stings are rare from native bees, many females are capable of stinging. Watch them, don't bother them, and you'll be fine!
- **Share your observations** and tell your friends – it's amazing what you can see when you're looking!

More info:

- Our bee hotels in this ABC video: abc.net.au/local/videos/2013/03/01/3701533.htm and posts at karenretra.com/home/category/bee-hotel
- Valley Bees 'bee wall and habitat' factsheet via mrccc.org.au/valley-bees/

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