1.1 **Native Bee Hive location**
Not all areas of Sydney are suitable for keeping Australian stingless bees mainly due to winter temperatures being too cold in some areas of Sydney. The more eastern or coastal suburbs, central and coastal parts of the Sydney Basin are generally suitable. Not suitable is the western parts of Sydney and elevated parts of Sydney or exposed/windy areas generally.

1.2 **Siting and installing your Native Stingless Bee Hive**
The first thing about installing your native bee hive is that the hive is to remain in a fixed position (and not be moved once installed). The reason for this is that the bees geo-locate their home very accurately and if the hive is moved, the bees won’t be able to find their home.

The bees need at least 3 hours of morning sun directly hitting the hive all year around (particularly in winter). The hive needs afternoon shade (from about midday) especially in summer.

The winter morning sun is important to warm up the bee hive after the cooler nights in Sydney.

Locate the hive in a protected spot from wind, rain, extra humidity, and radiant heat is another consideration.

Locate the hive in a position that is a bit elevated so that there is not too much moisture/humidity - and at a height that captures the morning sun and so you can watch them come and go.

Balconies or verandahs can also work (facing north or east). Consider that the sun is lower in the sky in winter and travels more overhead in summer and use this to the hives advantage when siting your hive.

Also consider if trees that may be shading the hive are evergreen or deciduous - and utilise the possible winter morning sun let in by a deciduous tree.

Typical installations include mounting the hive to a wall or fence (with brackets 300mm x 250mm) or fixing it on top of a stand or post (guide: 100mm x 100mm).

Their brood temperature can’t get below 15 °C for too long - so the winter morning sun is needed to warm up the hive after overnight cooling. Rain can exacerbate the cooling of the hive, so keeping the hive dry (by putting plastic over the roof and sides when raining can help).

1.3 **Can I use garden sprays?**
Please don’t spray insecticides or toxins anywhere near (within at least 20m of the hive). Sprays like mosquito spray or cockroach spray are insecticides (bees are insects) and insect sprays will kill bees. Equally, garden sprays for bugs can be just as effective at killing bees (and beneficial bugs), even homemade or natural products.

Sprays can be airborne many meters from where they were sprayed. The toxins in the air can rapidly get into hives and kill them.
1.4 **Can I move the hive?**
Once installed, between distances of 20cm and 1.5km, the hive should **not** be moved. It is **really** important that once the hive is installed, it is **not** moved (not even 30 cm) as the native stingless bees have a very accurate inbuilt ‘GPS system’ that they use to navigate and locate their hive. If the hive is moved, the bees will return to the original position.

There are however methods that you can adopt if it is absolutely necessary to move your hive. This can involve closing the hive once the sun goes down and the bees are all inside and moving the hive further than 1.5 km’s away for 4 weeks (a generation of bees) then back to the new position. Alternatively, you can move the hive incrementally 15-20cm a day. This is best done in spring than winter.

1.5 **What Maintenance do I need to perform with my Native Bees?**
*Tetragonula carbonaria* are stingless, native and they require very little maintenance.

Some things you can do to help your hive be happy and healthy is to make sure there aren’t any **cobwebs** at the entrance or on the hive.

Being aware of **temperature extremes** and assisting on cooling their environment down on a very hot day will help. e.g. hosing down hard surfaces and vegetation around the hive.

If heavy rain is predicted, covering the hive with plastic on the top and sides (leaving their entrance open) will help reduce moisture inside the hive.

If very **cool nights** are predicted in winter, covering the hive at night only with some extra warmth can also help (this could be with some bubble wrap or an old blanket). Note: uncover the hive in the morning to allow the morning sun’s rays to warm up the hive again.

**Unusual Activity:** Noticing what the bees are doing will tell you a lot about the health of the hive. Bees should be around the entrance and flying in and out of the hive during the day and when it is **18 degrees** and over. They’ll be tucked up in bed at night or when it is cold or rainy.

1.6 **Extremes:** What should I do on really hot days and really cold days/nights?
*Hives can melt down in hot temperatures or die in the cold weather in Sydney (especially if they also get a bit wet).*

**Summer:** If the temperature is extremely hot, you may wish to place a moist, light coloured towel or sheet over the hive (not over the entry) or move a pot plant so the foliage will shade the hive. In hot temperatures, watering down nearby hot surfaces may also help (like watering down nearby walls or pavers and foliage around the hive).

**Winter:** Cold: On those few cold/wet winter nights that Sydney sometimes has (when the temperatures are in single figures) or when it is wet, it may help to place extra insulation/protection over the hive just at night (like a space blanket, packing foam, or bubble wrap or a plastic garbage bag – but don’t leave wet material that may make the hive mouldy or cold).

Only if exceptionally necessary: on extreme cold nights you could also close the entrance of the hive up at night (with paper or tissue and tape (to allow the bees to breathe) and move the hive indoors (but **not** in front of the fire or radiator – and move the hive back outside in the morning into the exact same position).

If you think your hive is too wet/or too shaded in winter and wish to move its location, follow the moving instructions in this information sheet. The idea in the cold is to take any extra insulation off the hive in the morning to allow the hive to warm up again.

1.7 **How far do the bees fly?**
Your native stingless bees will fly normally around 150m but can fly and forage up to 500m from the hive to gather nectar, pollen and tree resin. Your bees will fly less if there is pollen, nectar and resin closer by (as it is more efficient).
1.8 **Do the native stingless bees need water?**
You don't need to specifically provide water for your native bees. They'll tend to get water from water droplets on leaves and nectar in the flowers and often moisture in soil. If you keep a live/lush flowering garden, there should be enough water around for them to gather.

1.9 **Dividing the hive (splitting) in the Sydney climate.**
Dividing (or splitting) a hive is less reliable in Sydney than further north. If you decide to divide your hive we recommend that the hive has had at least 2 full seasons with you (i.e. don't attempt it in the first 12-18 months of owning your hive). It is not necessary to divide a hive in Sydney, and in Sydney it is not always possible annually, given that Sydney is at the more southern extent of the natural distribution area for *Tetragonula carbonaria*. Certainly, if you are located in a more marginal zone (i.e. not coastal, more elevated, exposed, or if the hive is in a less than ideal location, then dividing may not ever be possible or recommended. Just leave them be as you would in nature and let your bees happily go about pollinating your flowers.

1.10 **What plants and flowers do they like?**
*Tetragonula* (native stingless bees) need pollen (their protein) and nectar (their carbohydrate) and tree resin (their antiseptic and building material).

We have seen *Tetragonula* on both exotic and native plants being: macadamias, strawberries, tomatoes, passion fruit, blueberries, mango, watermelon and most of the flowering Australian native plants like *Grevillea*, *Eucalyptus*, *Angophora*, *salvia*, *parsley*, *sage*, *kale*, *coriander*, *nasturtium*, *tarragon* and *basil*, *palm flowers*, *banana flowers*, *water lilies*, *passion fruit*, *Camellia sasanqua*, *crocus*.

Australian native flowering trees and plants have developed their flower shape to attract native bees and pollinators. Native bees and the resins they produce are likely to provide as yet untapped medical and health benefits.

Planting a range of flowering plants and trees will help ensure you have a healthy balanced ecosystem and hive success. We are working towards publishing a research paper on the plants the stingless bees favour based on matching species, hive samples and pollen analysis from a range of locations. There is some more information on my website with Sydney suitable flowers and plants the native bees prefer. [www.elkeh.com.au](http://www.elkeh.com.au)

1.11 **Fighting Swarms and Mating Swarms**
Sometimes native stingless bees can create or be part of a swarm. If the bees are holding onto each other and wrestling (and you see them dead on the ground below in pairs, then it is a **fighting swarm**.

If it is a **matting swarm**, you'll see a cloud of bees flying (males). They are looking out for a new virgin queen to come out of the hive.

Both phenomena are natural occurrences and whilst there can look like a lot of death to bees in the instance of the fighting swarm, the colony as a whole will almost always survive (possibly with a new queen from a nearby colony and stronger genetics).

1.12 **Predators**
- Keep an eye out for **Syrphid flies**. Sometimes native stingless bees can be targeted by syrphid flies (they look like wasps). Certain areas/locations have more syrphid flies than others. Syrphid flies can lay their eggs on the outside of the hive and the larva (eggs) can crawl into the hive and pupate inside the hive. This can be quite detrimental to the colony. If you notice syrphid flies lurking around the hive (flying in front of the hive and possibly landing on the hive), the best thing to do is to swat them. I use a battery powered (tennis racket shaped) fly swatter/zapper (available online such as on Ebay); but before I discovered it, I used to use a tea towel/pillow case or towel, keep still, let the syrphid fly come close to the material, wait till the syrphid fly lands, then slowly move towards and then very very quickly smother the fly with the material then squash through the material. A butterfly catcher can also work well (after catching the fly, twist the butterfly catcher material to trap the fly and squish the fly with your foot on the ground). It is tricky to catch them, but very worthwhile to the health of your hive to spend the time to do so.
- Obviously spraying fly spray (or any insect spray) on the flies will **not** help the native bees (as both are insects – and both will die).
• **Small hive beetle and native hive beetle** can also be problematic to a weakened colony particularly when the hive has been opened up.

- Another predator I have noticed in Sydney (first in 2016, then each year after) is the presence of the *Bembix wasp*. These wasps are common in Qld. This wasp will hover around the front of the hive and capture bees and feed them to their larvae. Apparently, the wasp needs 30-50 bees to feed one wasp larva.

- There seems to be a certain time in summer that this is more prevalent. It is worth reducing these wasps and one way that I am able to do this is with a battery powered (tennis racket shaped) fly swatter/zapper to reduce the wasp numbers and give the bees a better chance. We also need to recognise there is a complex biodiverse food chain relationship and wasps do have a role in our environment too, so the odd wasp is ok in my mind.

- In a strong native bee hive this shouldn’t be too detrimental, however it is worth keeping an eye out for them.

- **Ants** can sometimes try and set up home in the hive. If you notice ants going inside, you could create a barrier for the ants using a ring of grease (e.g. Vaseline) around the post that the hive is on, or around the wall the hive is installed upon.

### 1.13 More about Native Bees in Australia and Native Bee Research

There are over 1700 different species of native bees in Australia (most of these are solitary bees, only 10 species are social like *Tetragonula carbonaria* - Native Stingless Bees). To find out more about native bees, visit Dr Anne Dollin’s ‘Aussie Bee and Australian Native Bee Research’ website with a wealth of knowledge on the fascinating world of Australian Native Bees. [www.aussiebee.com.au](http://www.aussiebee.com.au)

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*I hope you get enjoyment out of your native stingless bee hive, enjoying watching the bees fly in and out and the increased yield of your vegetables and flowering plants.*

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*Elke Haege, Native Stingless Bees Sydney
m: 0410 456 404
e: elke@elkeh.com.au*