

What is Biosecurity for native Australian bees?



Source: Dr Jenny Shanks, Plant Health Australia

NATIVE AUSTRALIAN BEES

What are native Australian bees?

Australia has over 1,600 species of native bees which are divided into three main categories: stingless, solitary and semi-social. Native stingless bees are Australia's only truly social bees as they live in colonies comprised of a queen, male bees and worker bees. Native stingless bees produce native bee honey and can be found in tree hollows of matured trees and can also be kept in hive boxes (meliponary).

The females of native solitary bees live alone in nests or small holes in the ground, and semi-social bees live in small groups of adults. Some species of solitary and semi-social bees will use nest material provided by people (sometimes called bee hotels).

Examples of species that occur in Australia:

- **Stingless species:** *Tetragonula* and *Austroplebia* sp.
- **Solitary bees:** Blue banded bees, leaf cutter bees and masked bees.
- **Semi-social:** Reed bees, great carpenter bees and green carpenter bees.



Homalictus sp.

Source: Jeremy Jones, University of New England NSW

What is Biosecurity?

Biosecurity refers to a range of day-to-day activities and practices which reduce the impact of pests and diseases on the native bee populations and their environment. Biosecurity measures can:

- **Prevent pests entering:** stop pests from entering your site, meliponary (stingless bee yard), bee hotel or nests means their harmful effects don't have to be managed now and into the future.
- **Pick up pests early:** if they do enter, finding the pest soon after it arrives provides the best chance of eradicating or managing it.
- **Prevent pests establishing and spreading:** if a pest can't be eradicated, putting measures in place to stop it establishing and spreading to new sites, boxes, bee hotels or nests will help protect other regions and ecosystems.

Who has a role in improving native bee biosecurity?

Whether you are a commercial or hobbyist beekeeper or are concerned about protection of the environment, everyone can play a role in improving our biosecurity measures. Native bee hives, boxes or bee hotels are now in many areas including museums, exhibition sites, gardens, early-learning/childcare centres, schools and businesses, and while they bring many benefits to their local areas, there are simple steps to consider to keep Australia's native bee populations healthy.

- **Beekeepers:** As a beekeeper you are in close contact with the hives, allowing you to see signs of unusual symptoms early. Despite the rapid increase in the numbers of people keeping native bees, little is still known about the pests and diseases that affect them. Reporting unusual symptoms or unexplained colony deaths will assist build knowledge and may be the vital clue needed to identify a new pest and stop it spreading. You can also help limit the risk of introducing or spreading pests and diseases by making sure you clean equipment used when working with bees.



Source: Dr Jenny Shanks, Plant Health Australia

- **Industry bodies:** The peak industry body for the Australian native bee industry (Australian Native Bee Association (ANBA)), associated branches and pollination-reliant industries promote the conservation and sustainable use of Australian native bees.
- **Government:** Government departments provide significant expertise for management and health of European honey bees, and may be able to assist with diagnostic advice or tests for bee pests and diseases. This can provide a basis for information for issues with native bees.
- **Research funders and researchers:** Valuable investment and support may be possible through engagement with research funders and researchers focused on native bees. Such as conservation, health and pest and disease management, and supporting industry development. Researchers are encouraged to be aware of the biosecurity risks when working with native bees.
- **General public:** Everyone in the general public has a role to play, whether that be reporting something that looks unusual in stingless bee hives or unusual looking bees in the environment, or following the appropriate directions.

Identifying Australian Bees

There are some great resources available to help identify Australian native bees. Images can be submitted through apps such as MyPestGuide Reporter or to the Atlas of Living Australia. ANBA and their branches provide information and news on native bees.

The benefits of biosecurity

Some of the benefits of implementing good biosecurity practices to keep Australia's native bees healthy are:

- **No new pests:** good biosecurity will reduce the risk of new pests and diseases becoming established in Australia and impacting our native bees.



Tetragonula carbonaria

Source: Jeremy Jones, University of New England NSW

- **Healthy native bees:** good biosecurity helps reduce the impacts from pests and diseases we already have in Australia as they will be detected if they enter new areas, or we'll be able to be slow their spread or manage them.
- **High production:** managing the health of honey bees means that the quality and yield of native bee honey is maintained.
- **Pollination:** good biosecurity also ensures healthy native bee populations that can pollinate our crops and native plants.
- **Lower costs:** good biosecurity practices reduce the pest and diseases that impact our native bees. This results in lower stingless bee hive management costs, for example reducing the costs of infestation by small hive beetles and impacts from bacterial brood diseases, resulting in less need to replace dead colonies. For solitary bees, good biosecurity helps maintain the natural ecosystem balance, reduces losses associated with fungal brood diseases, reduces likelihood of the spread of diseases between solitary nests. the spread of diseases between solitary nests (natural or man-made).



Source: Dr Jenny Shanks, Plant Health Australia

- **Less time managing pests:** if there are less pests and diseases in your stingless bee hives and solitary/semi-social bee nests, less time will need to be spent on controlling them.
- **Reduces risks when relocating:** good biosecurity reduces possible pest/disease spread which could impact local populations when relocating species.
- **Conservation:** protecting native bees helps ensure native species and the environment are protected.

Movement of native bees as a biosecurity risk

Interstate movement of stingless bee colonies or solitary and semi-social nests needs to be carefully considered to manage biosecurity risks. Moving native bees to a new area could potentially introduce diseases or disrupt the local ecosystem. This could lead to disease outbreaks that local species are not adapted to cope with, competition for resources, or even displacement of local species. Moving native bees out of their natural environment may also result in interbreeding with other species already present in the new area.



Braunsapis sp.

Source: Jeremy Jones, University of New England NSW



Metallic green carpenter bee (*Xylocopa aerata*)

Source: David Britton, Department of Agriculture, Water and the Environment

If you see anything unusual, call the Exotic Plant Pest Hotline

EXOTIC PLANT PEST HOTLINE
1800 084 881

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