

BENEFICIAL BLOOMS GUIDE

Using flowering
plants to support
beneficial insects
on your property





Flowering resources are integral to sustainable and resilient agricultural production. They support a diversity of beneficial insects, including those that provide critical ecosystem services such as crop pollination and natural pest control.

CROP POLLINATORS

Bees and flies are our most important crop pollinators. Research from Tasmania and mainland Australia shows that honeybees play a critical role in pollinating crops in our cooler temperate regions. However, to support crop pollinators both during and outside of crop flowering periods, it is important to provide adequate food and habitat resources.

NATURAL PEST ENEMIES

Native and introduced insects that support natural pest control include wasps (excluding European wasps - a pest species), hoverflies and ladybeetles. Many wasps, beetles and flies require nectar for energy while others also need pollen to complete their lifecycle (e.g. hoverflies). The performance, fitness and population dynamics of natural pest enemies can be enhanced when suitable flowering resources are available.



Bees have evolved to feed exclusively on flowers, alongside a high proportion of wasp species. Many other insects also feed on flowers including 23% of beetles and 51% of fly families.



HONEYBEE & BUMBLEBEE

These introduced species visit many different crops including fruit trees, berries, cucurbits, seed and legumes.



NATIVE REED BEE

Can be frequent visitors of apple, blueberry and caneberrys, while *Lasioglossum* species likely contribute to seed crop pollination.



NATIVE HOVERFLIES

Tasmanian trials are using reared drone hoverflies (L) to support crop pollination. Predatory hoverflies (R) control different soft bodied pests and support pollination.



LADYBEETLE

Most introduced and native ladybeetles offer control of aphids.



INCREASING FLOWERING RESOURCES IN AGRICULTURAL LANDSCAPES

There are many ways to boost the diversity and abundance of flowering resources in agricultural production areas.

Groundcover and inter-rows:

1

Clovers and other legumes are beneficial for bees and also increase nitrogen in the soil. Daisy-like flowers (e.g. dandelion, daisies) are also a great resource for bees. Avoid over-mowing to allow their establishment.

2

Flowering strips, flowering green manure or forage crops:

These can be integrated within your production areas via crop rotation or preparation of new growing areas, or added as more permanent strips along edges or between rows.

3

Herb and ornamentals:

Herb gardens provide flowering resources for bees over a long period. Make sure to include open nectary flowers (see following page for more details).

4

Sequential flowering crops:

To prolong flowering period around monoculture crops (e.g. apple) a secondary crop that flowers once the main crop finishes (e.g. raspberry) can be integrated, offering additional resources to pollinators along with a marketable product. Pithy stem raspberry canes also provide ideal nesting material for native reed bees.

5

Leave crops to go to flower:

Leaving a few vegetable crops to go to flower (e.g. carrot, brassicas, onion) is an easy way to support beneficial insects, including natural pest enemies.

6

Moveable flowering resources:

Making portable 'flower-boxes' that can be moved into different areas can be an effective way to increase flowering resources when working with crops grown across multiple polytunnels/greenhouses.

7

Weed management:

Weeds can be important food resources where they are one of the only flowering plants in highly disturbed agricultural landscapes. As part of weed control efforts, consider what plants and flowers can be added instead. This can include flower-strips or adding perennial native plantings.

8

Native plantings:

Native plants can be integrated by incorporating them into shelterbelts, using a mix of native shrubs, trees and grasses to stop prevailing winds while also providing critical resources to beneficial insects. Integrate small shrubs and ground-creeping plants within the end of production rows or as smaller interrow plantings.

9

Remnant vegetation:

Managing weeds to support the growth of native plants is an important part of supporting healthy bushland. Don't allow stock to access native bush as this significantly limits the establishment of important understory. If your remnant vegetation mainly consists of taller trees, you can add shrubs and smaller trees to increase flower availability.

CHOOSING YOUR PLANTS

Adding a variety of flowers helps improve the availability of flowering resources and creates diversity, but it is also important to include certain plants based on their traits. For example, open-faced flowers with easily accessible blooms to attract natural pest enemies, and native plants for more specialised native bees and other insects.



To learn which plants insects prefer, go outside on a warm spring or summer day and observe your flowers. You will be surprised how many types of insects that you will find feeding on different flowers!

INTRODUCED	NATIVE
Umbel shape^{PE} – <u>Food plants</u> including carrot, coriander, lovage, dill, fennel, parsley <u>Ornamental plants</u> including Queen Anne's lace, angelica Daisy flowers^{PE} – Dandelion, calendula, chamomile Fragrant herbs – Rosemary, lavender^Y, thyme, oregano, sage Legumes – Clover, bird's-foot trefoil, beans, peas, lupins Caneberries^N – Raspberry, blackberry Brassicas^{PE} – <u>Food plants</u> including mustard, mizuna, kale <u>Ornamental plants</u> including alyssum Other – Fiddleneck (Phacelia), borage, buckwheat^{PE}	Trees – Eucalyptus^S, banksia^S, leatherwood Shrubs – Teatree, bottlebrush^S, kunzea^{PE}, needle bush, heath, prickly box (Bursaria)^{PE}, grevillea^S, native peas, native hop (Goodenia) Herbs and ground cover Native daisies, pigface, matted bush pea, native mint^{PE} <i>TIP: Talk to your local Landcare group or native plant nursery to find out what plants are available and will do well in your location.</i>

^{PE} Open flowers for natural pest enemies

^Y Year-round flower resource

^S Ideal for more specialised native bees

^N Useful as flower resources and nesting resources for reed bees

NATIVE BEES

Australia's diverse native bees come in many different sizes, forms, colours and nesting behaviours. Tasmania is home to more than 120 native bee species, which are all solitary species – meaning they don't make hives but instead live alone.

Some native bees are generalists, feeding on a variety of native and introduced flowers, while other are highly specialised and only visit specific native plants. Plants in the Myrtaceae and Proteaceae family are particularly useful for specialist bee species.

Many native bee species nest in tunnels in the ground, while others make nests in existing small holes in dead wood or pithy stems.



Native leafcutter bee on bird's-foot trefoil

CREATING HABITAT FOR NATIVE CROP POLLINATORS

Reed bees help pollinate fruit and berry crops in Tasmania, and nest in pithy stems and branches of native vegetation (such as tree ferns, sedges, or daisy bush) and introduced plants (such as bamboo, raspberry, blackberry, roses, elder or sycamore). You can also create habitat for them by;

- Trimming caneberries or roses to leave longer old canes as nesting material. When controlling blackberries, keep some of the dead stems
- Creating bundles of pithy stems and placing them around your garden or orchard.

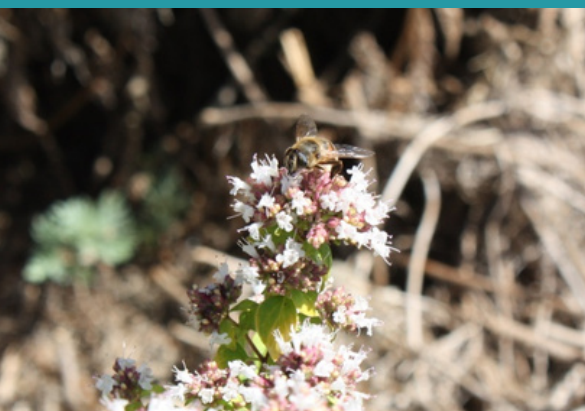
You can also encourage wood boring native bees by keeping old weather resistant wood (such as eucalyptus or wattle) around your property. These often already have holes from different boring insects, if not then you can drill a selection of small holes between 3-10 mm and 100-150mm deep.



Twig bundle for reed bees
Source: Tasmanian Bee Hotels



Common soil nesting bee – Lasioglossum



RESOURCES AND FURTHER READING

WEBSITES AND LINKS

- Tasmanian Bee Hotels: <https://sites.google.com/view/tasmanianbeehotels/home>
- Wheen Bee Foundation, Powerful Pollinator guides: www.wheenbeefoundation.org.au
- Understorey Network – regional plant species lists: www.understorey-network.org.au
- NRM South Flower feeding insects webinar: www.youtube.com/@nrmsouth
- Field Guide to the Insects of Tasmania: <https://tasmanianinsectfieldguide.com/>
- The Beatsheet: <https://thebeatsheet.com.au/resources/>
- Aussie Bee 'How to make nest blocks': <https://www.aussiebee.com.au/aussiebeeonline026.pdf>

BOOKS AND GUIDES

- Garden Pests, Diseases & Good Bugs by Denis Crawford
- GRDC Beneficial Insects Guide: <https://www.abc.net.au/news/rural/2023-01-19/hairy-hover-flies-help-honey-bees-pollinate-food-crops/101858910>

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- Brown, J. and Cunningham, S.A., 2022. Biogeographic history predicts bee community structure across floral resource gradients in south-east Australia. *Diversity and Distributions*, 28(7)
- Hanusch, Y., Gloag, R. and Latty, T., 2025. Both Native and Introduced Non-Crop Flowering Plants Around Orchards Support Potential Crop Pollinators and Other Beneficial Insects. *Austral Entomology*, 64(2)



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