Powerful pollinators

Encouraging insect pollinators in farm landscapes



Pollinators are an essential component of agricultural production and of healthy, biodiverse landscapes. Protecting and enhancing pollinator resources on farms will help support a diverse range of pollinators. This brochure provides an introduction to encouraging insect pollinators on farms, including a guide to choosing plants that will support diverse pollinators throughout the year.



The power of pollinators

Pollinators – mostly insects, but also birds and mammals – assist the production of seeds and fruit in many plant species by visiting flowers in search of food (nectar and/or pollen). Whilst foraging they transfer pollen from one flower to another, facilitating fertilisation, which results in fruits and seeds.

Honey bees, native bees and other native insects like hoverflies, wasps and butterflies provide essential pollination services for native plants, garden flowers, fruits and vegetables.

Pollinators and food security

Without insect pollinators, the quantity and diversity of food and plants grown in backyard gardens would be severely restricted. Many of the foods we eat, from gardens and farms, benefit from pollination.

Pollinator-dependent foods include citrus, apples, stone-fruits, zucchini, pumpkins, strawberries and tomatoes, as well as plants grown for seed such as sunflowers, coriander and parsley.

The quantity and diversity of insect pollinators are key drivers of production as they influence both food yields and quality. Under-pollination results in smaller and misshapen fruit or seed that isn't viable.

A diverse and healthy community of pollinators generally provides more effective and consistent pollination than relying on any single species.

Pollinators are essential to, and dependent upon, healthy ecosystems. A growing human population and increasing demand for food puts pressure on ecosystems, with potential negative impacts on biodiversity, the environment and food production.



Native vegetation supports pollinators by providing food and nesting sites. Nearby crops and pastures will benefit from the increased abundance and diversity of pollinators in the landscape.

Insect populations are in decline worldwide due to land clearing, intensive or monocultural agriculture, pesticide use, pollution, colony disease, increased urbanisation and climate change. Low pollinator numbers mean not all flowers are pollinated, leading to low fruit or seed set. This in turn reduces fruit and vegetable harvest yields, and decreases food supply.



Under-pollination results in smaller, misshapen fruit such as this strawberry.

Backyard biodiversity

Insect pollinators are a prime example of the importance of healthy ecosystems in urban gardens, parks and reserves. Insects are the 'canaries in the coal mine' of our urban and rural environments. Without our 'littlest creatures', we lack pollinators, natural beneficial pest control services, and critical food source for other insects, birds, amphibians, reptiles and mammals.

The presence of connected and widespread pollinator habitat is critical to support insect populations if we are to maintain sustainable cities and productive, healthy gardens and urban farms for food security and biodiversity.

Pollinators require habitat that contains year-round food sources, breeding resources and nesting sites. The presence of pollinator habitat adjacent to food crops has been shown to improve food production by enabling a greater variety and number of pollinators to persist year-round, providing pollination services when required.

Turn to the centre of this brochure for a guide to planting for pollinators.

Diapause or diet? Where are the insects?

Many insect pollinators undergo a diapause during colder winter months. Diapause is a period of suspended development during unfavourable environmental conditions, and during this period insect pollinators do not need flowers. Birds and other small mammals will continue to benefit from available pollen and nectar during this time.

If there are low numbers of insect pollinators in your local area, it is important to determine whether this is because of diapause, or because of an inadequate availability of nectar and pollen creating a 'food desert' where insect pollinators cannot survive.

There are still many unknowns about insect pollinators in Australia. Take part in Australian Pollinator Week or in the annual Australian Pollinator Count to learn more about pollinators in your area – visit: **AustralianPollinatorWeek.org.au** and **AustralianPollinatorCount.au**

Encouraging pollinators in your garden

Create pollination reservoirs

Pollination reservoirs are areas that provide floral resources for pollinators. They can be gardens, new plantings or existing habitat such as established trees, or even local bushland, parks or reserves. A high diversity of plant species is essential to provide nectar, pollen and nesting sites throughout the year. Pollination reservoirs need to be close enough to where pollinators live to ensure that they can fly easily to them.

Improve on what you have

Enhance and improve your existing pollinator habitat where possible. Gardens that already contain established trees, rockeries, ponds, bare soil and organic matter, and a variety of flowering plants, are a valuable resource for beneficial insects and pollinators.

Nature-strips, verges, laneways, vegetable gardens, orchards, nature reserves, and riverbanks and creeks can all be important pollinator-attracting areas. Protect and enhance native pollinator plants in your garden and surrounds for the future.

Plant trees, shrubs and groundcovers

Planting a variety of species of groundcovers, shrubs and trees in your garden will further attract pollinators to your patch. Initial watering and protection will improve the success rate of young plants. Some plants such as wildflowers or native pea species are excellent at attracting pollinators, rewarding keen gardeners with a diversity of native pollinators.

Be a citizen scientist and do some detective work to discover local pollinators in your patch. Visit **inaturalist.ala.org.au** to be involved.

Construct insect real estate

Insect hotels, which are both functional and attractive, are a great way to add to habitat and nesting places for pollinators and insects in your backyard or garden. The hotels are easily moved to be close to flowering plants and those needing pollination, especially if you have a new garden that is still growing. Include lots of different sized holes, cracks and crevices to provide homes for various solitary insect pollinators.

Plant for the future

When establishing pollinator habitat, consider including species that are indigenous to your area but can tolerate increasingly drier and warmer conditions, to create resilient habitat for climate change. Rehabilitate weedy areas into managed pollination reservoirs by introducing lots of flowering plant diversity. Be careful not to plant invasive or listed weeds, and look for suitable replacements.

Amplify the flower signal

Plants have evolved large flowers or clusters of smaller flowers because they attract more pollinator visits. Large, colourful and diverse plantings attract more pollinators. Ideally, plant in groups that contain different vegetation layers – combine a species-rich mixture of wildflowers, ground-covers, herbs, lilies, rushes, climbers, shrubs and trees.

Connectivity counts

Insect pollinators benefit from greater connectivity of habitat in a landscape, which allows them to forage over a wider radius and increase in numbers in a local area. Encourage friends and neighbours to plant for pollinators and create connections in your community.

Get to know your local flora

Your local government area has distinct populations of insects, depending on the local flora and environment. Knowing your local insect species will help you develop better plantings.

The plants growing in nearby nature reserves or bushland will be suited to your climate and soils. Local environment groups and specialist native nurseries can provide information about local plants.

Grow a bumper crop

Pollinator-attracting plants include many fruits and vegetables grown in backyards, community and market gardens, and orchards. Pollinators ensure good yields of crops such as apples, beans, avocado, and almonds, and bush foods such as Lilly-Pilly and Finger Limes.

Reduce chemical use

Insecticides, fungicides and herbicides all affect bee, colony and wild pollinator health. Herbicides can impact pollinators by reducing the availability and diversity of flora and removing vegetation that helps support insect life. Some herbicides can also harm the beneficial microbes in the insect gut. Insecticides are an obvious threat to pollinators, yet many beneficial insects will, in healthy numbers, help control pest insects, ultimately reducing the need for insecticide use.

Many crops are dependent on pollination by bees. When chemical pest control is unavoidable, select products that are least harmful for pollinators and apply insecticides in the evening or at night when pollinators are not active. Always use according to directions, especially for withholding periods, and notify beekeepers a few days before spraying chemicals so beehives can be safely relocated away from harm.

Safeguard the bees? The best way to 'save the bees' and protect our pollinators is to create an abundance of diverse habitat — from the ground up! There is much interest in keeping a bee hive to promote pollinators, but there are serious legal and biosecurity responsibilities that must be considered, and that the introduction of a bee hive does not displace existing native pollinators and insects. Be a friend of pollinators and say it with flowers!

A guide to planting for pollinators for the Tasmanian Northern slopes



Healthy populations of insect pollinators are important for sustainable and resilient farms, orchards, gardens, and native flora.

This Guide will help you select plant species to attract and sustain pollinators in agricultural areas and gardens throughout the year.

The Tasmanian Northern Slopes bioregion borders Bass Strait and extends southwards into the foothills of the Central Highlands. Summers are warm and dry, while winters are cold and wet, with a more moderate range in temperature along the coast. Exposed, poorer, dry, coastal soils support coastal heaths, grasslands and dune ecosystems. The region's iconic deep, red, basalt soils dominate the lowlands where it supports a wide range of forestry, pasture and cropping systems in a matrix of remnant wet and dry sclerophyll forests with diverse understory species that offer numerous floral rewards for pollinators.

The plants listed in this Guide will help supply rewards to pollinators, with an emphasis on species that are indigenous and suited to local climates.

Garden centres sell many common pollinator-attracting ornamental flowers and herbs labelled as 'bee-friendly'.

The eucalypt species in this Guide are mostly large trees, and not suitable for all centre, or indigenous nursery, ask them gardens, but have been included for their to contact the local wholesale nursery value as good nectar producing species. suppliers and plant growers listed online. Most eucalypts do not flower every year, See the reverse of the Guide for details. so choosing diverse species will help create continuously flowering habitat.

The pollinator plant list

To create pollinator-attracting plantings, use the Guide to choose a selection of plants with a variety of flower colours, different growth habits and a range of flowering seasons.

For each species, the planting Guide lists:

- life-form/'habit' (climber, herb, shrub or tree) and height (m).
- the vegetation type in which they naturally occur
- flower colour and flowering season
- growth requirements (sun/shade, moist/dry)
- insect groups that may visit each plant and the floral reward (pollen and/or nectar).

The coloured bars indicate the flowering months for each species. Darker shading denotes the peak flowering period, with a lighter shading for non-peak flowering months. Flowering dates may differ between regions and seasons, particularly for non-peak times, if your local climate is consistently warmer or cooler than average, with earlier or later flowering.

Sourcing plants

Most of the plant species listed are available from retail or wholesale nurseries or native plant growers, and local environment groups. If you can't source these plants at your local garden



	Common name	Scientific name	Family	Vegetation type	Height	Flower colour	Flowering Jan Feb Mar Apr May Jun Jul Aug Sep C	Oct Nov Dec	Aspect	Soil moisture	Pollinator reward Pollen Nectar	Native bees Hor	ney bees Ho		on by polli Wasps		Moths Bee
Crop plants	Apple	Malus domestica	Roseaceae	Horticulture	1.5–10 m	White-Pink			Sun	Moist							
Free Free											• •	•	•	•			
ree Shrub	Cherry		Roseaceae	Horticulture Horticulture	1.5–10 m 1.5–2 m	White White			Sun Sun	Moist Moist			-	-			
Shrub	Raspberry	Rubus idaeus Vaccinium spp.	Roseaceae Ericaceae	Horticulture	1.5–2 m 1–2 m	White				Moist							
Forb	Blueberry				0.1–0.3 m				Sun Sun	Moist	• •	•	•	•	•	•	
orb	Strawberry Clover	Fragaria ananassa Trifolium repens	Roseaceae Fabaceae	Pasture/Fodder	0.1–0.3 m 0.3 m	White			Sun	Moist			•	•	•	•	•
Herb	Lucerne	Medicago sativa	Fabaceae	Broadacre Cropping	0.3 m 0.75 m	Purple			Sun	Moist							
ree	Radiata Pine	Pinus radiata	Pinaceae	Plantation/Forestry	0.75 m 15–30 m	Purple Pale Yellow			Sun to semi-shade	Moist	•	•	•			•	
Herb	Pyrethrum Daisy	Tanacetum cinerariifolium	Asteraceae	,							• •		•				
Herb Herb	/ /	Papaver somniferum		Horticulture		White & Yellow			Sun to semi-shade	Moist to dry		•					
Indigenous plants	Poppy	,	Papaveraceae		0.3-0.6 m				Sun	Moist to dry	•		•				
orb	Showy Everlasting	Xerochrysum subundulatum	Asteraceae	Grassland, Herbfield, Woodland		Yellow-Orange			Sun	Moist	•	•	•	•	•	•	
Groundcover	Spreading Guinea-Flower	Hibbertia procumbens	Dilleniaceae	Forest, Woodland, Heath	< 0.1 m	Yellow			Sun to semi-shade	Moist to dry	•	•	•	•		•	•
Groundcover	Matted Pratia	Lobelia pedunculata	Campanulaceae	Boggy, Riparian	< 0.4 m	Pale Blue			Sun to semi-shade	Wet	•	•	•	•		•	•
Groundcover	Ivy-Leaf Violet	Viola hederacea	Violaceae	Forest	< 0.3 m	White & Mauve			Shade to semi-shade		•	•	•				
Groundcover Herb	Native Pigface	Carpobrotus rossii	Aizoaceae	Coastal	<1m	Mauve-Purple			Sun to semi-shade	Dry	• •	•	•	•			
lerb	Southern Storksbill	Pelargonium australe	Gerinaceae	Coastal	<1m	Pinkish-White with red 🔵			Sun to semi-shade	Moist to dry	• •	•	•	•		•	
lerb	Forest Candles	Stackhousia monogyna	Celastraceae	Forest, Heathland, Coastal	0.05–0.6 m	White			Shade	Moist to dry	•	•		•	•	•	•
lerb	Common Trigger-Plant	Stylidium graminifolium	Stylidiaceae	Forest, Heathland, Coastal, Sedgeland	0.1–0.15 m	Pink, Lilac 📃 🛑			Sun to shade	Moist to dry	• •	•				•	
lerb	Slender Speedwell	Veronica gracilis	Plantaginaceae	, , , , ,		Pale Blue			Sun	Moist	• •	•	•		•	•	
Herb	Golden Everlasting	Xerochrysum bracteatum	Asteraceae	Grassland, Herbfield, Woodland	0.1–0.6 m				Sun	Moist	•	•	•	•	•	•	
Herb	Tasmanian Yelloweye	Xyris tasmanica	Xyridaceae	Boggy Heath		Pale Yellow			Sun	Boggy	•	•					
Herb/Wildflower	Clustered Everlasting	,	Asteraceae	Woodland, Heathand, Coastal	0.1–0.2 m				Sun	Dry	•	-	•	•			• •
Herb/Wildflower	Curling Everlasting	Coronidium scorpioides	Asteraceae	Grassland, Heath, Forest, Woodland	0.1-0.2 m	Yellow			Shade	Moist to dry	• •		•				
lerb/Wildflower	Common Billy Buttons	Craspedia glauca	Asteraceae	Grasslands, Woodland, Coastal	0.3 m	Yellow			Semi-shade	Moist to dry			-				
	/								-	/							
Herb/Wildflower	Australian Bluebell	Wahlenbergia gracilis	Campanulaceae	,	< 0.5 m	Pale Blue			Sun	Moist to dry			•	•		•	•
ilies and Irises	Vanilla Lily	Arthropodium milleflorum	Asparagaceae	Grassland, Forest, Woodland	< 0.7 m	Blue-Violet			Sun Sansi aharaha ta aharaha	Dry	•*					•	
ilies and Irises	Tasman Stripe	Dianella tasmanica		Forest, Woodland	< 3.5 m	Blue			Semi-shade to shade	Moist to dry	•*	•		•		•	
ilies and Irises	Butterfly White Flag Iris	Diplarrena latifolia moraea	Iridacae	Coastal, Forest, Woodland, Heath	0.3–1 m	White with Yellow			Sun	Moist to dry	•		•	•	•	•	•
Sedge	Chaffy Saw-Sedge	Gahnia filum	Cyperaceae	Boggy, Wetlands	0.4–1.5 m				Sun	Wet	•					•	•
Shrub	Western Scrub Sheoak	Allocasuarina zephyrea	Casuarinaceae	Coastal, Heathland	1–2 m	Red			Sun	Moist	•	•	•	•			
hrub	Sticky Boronia	Boronia anemonifolia	Rutaceae	Coastal, Heath, Woodland	0.4–1 m	Pink			Shade	Dry	•	•	•	•		•	•
Shrub	Dolly Bush	Cassinia aculeata	Asteraceae	Woodland, Forest, Heathland	< 3 m	White-Pink			Sun to semi-shade	Moist to dry	• •	•	•		•	•	
ihrub	Common Correa	Correa reflexa	Rutaceae	Woodland, Heathland	< 2 m	Cream-Pale Green 🦲			Sun to semi-shade	Moist to dry	•	•	•	•	•	•	
Shrub	Hop Bitterpea	Daviesia latifolia	Fabaceae	Forest	0.2–3 m	Yellow & Brown			Semi-shade	Moist	• •		•	•		•	
Shrub	Smoth Parrot Pea	Dillwynia glaberrima	Fabaceae	Coastal, Heathland	1–2 m	Yellow & Red			Semi-shade	Moist	• •	•	•	•		•	
Shrub	Common Heath	Epacris impressa	Ericaceae	Woodland, Heathland, Shrubland	3–4 m	White-Pink-Red			Sun to semi-shade	Moist to dry	•	•				•	
Shrub	Hop Goodenia	Goodenia ovata	Goodeniaceae	Woodland, Forest	< 2 m	Yellow			Shade	Moist to dry	• •	•	•	•			
Shrub	Native Indigo	Indigofera australis	Fabaceae	Forest, Woodland, Heath	<1m	Lilac-Pink			Shade	Moist to dry	•	•	•				
Shrub	Cushion Bush	Leucophyta brownii	Asteraceae	Coastal	0.2–2.5 m				Sun to semi-shade	Drv	•	•	•	•	•	•	
Shrub	Spike Beard-Heath	Leucopogon australis	Ericaceae	Coastal Heath	1–1.2 m	White			Sun	Dry		•	-	-	-	•	
Shrub	Daisy Bush	Olearia stellulata	Asteraceae	Forest	1–1.2 m	White			Shade	Moist	• •		•	•	•		
Shrub	Golden Rosemary	Oxylobium ellipticum	Fabaceae	Woodland, Forest	1–3 m	Yellow			Sun	Moist			-	-		-	
Shrub	Rosemary Everlasting	Ozothamnus rosmarinifolius	Asteraceae	Heath	< 0.5 m	White-Pale Pink			Sun	Moist			-	•			•
Shrub	Native Daphne	Pultenaea daphnoides	Fabaceae	Coastal, Forest, Woodland, Heath	< 0.5 m 1–3 m	Yellow with Red-Brown			Sun Shade	Moist				-		•	-
		1									•		•				
Shrub	Kangaroo Apple	Solanum laciniatum	Solanaceae	Coastal, Scrubland, Woodland	2 m	Purple			Semi-shade	Moist	•*		•		•		
hrub	Golden Heath Dials De suid Lle ath	Styphelia adscendens	Ericaceae		< 30 m	Greenish-Yellow			Sun	Moist to dry	• •					•	
hrub	Pink Beard-Heath	Styphelia ericoides	Ericaceae	,	2–10 m	White			Sun	Moist	• •	•	•				
hrub	Native Cranberry	Styphelia humifusa	Ericaceae	Forest, Woodland	2 -3 m	Red			Sun to semi-shade	Dry	•				•		•
hrub	Common Lilac-Bells	Tetratheca pilosa	Elaeocarpaceae		< 9m	Lilac			Shade	Dry	•*	•	•				
Shrub	Grass Tree	Xanthorrhoea australis	Asphodelaceae	Grassland, Woodland	3–10 m	Cream			Sun to semi-shade	Dry	•	•	•				
	Calalana Dalar											-					
ihrub	Golden Pea	Aotus ericoides	Fabaceae		0.2–2.5 m				Sun	Dry to moist	•	•	•	•		•	
hrub / Med Tree	Leatherwood		Fabaceae Cunoniaceae	Rainforest, Forest	< 7 m	White			Sun Semi-shade to shade	Moist	• •		•	•		•	
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia	Aotus ericoides		Rainforest, Forest Coastal, Forest, Heathland, Woodland	< 7 m < 1.2 m	White Pale Yellow-Yellow			Sun	/	-	•	•	•		•	•
hrub / Med Tree hrub / Small Tree	Leatherwood	Aotus ericoides Eucryphia lucida	Cunoniaceae	Rainforest, Forest	< 7 m	White			Sun Semi-shade to shade	Moist	• •		• • • • • • • • • • • • • • • • • • •			•	•
hrub / Med Tree hrub / Small Tree hrub / Small Tree	Leatherwood Silver Banksia	Aotus ericoides Eucryphia lucida Banksia marginata	Cunoniaceae Proteaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland	< 7 m < 1.2 m	White Pale Yellow-Yellow			Sun Semi-shade to shade Sun to semi-shade	Moist Moist to dry	• •		•	•	•	•	-
hrub / Med Tree hrub / Small Tree hrub / Small Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata	Cunoniaceae Proteaceae Proteaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland	< 7 m < 1.2 m 1–5 m	White Pale Yellow-Yellow Pale Yellow			Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade	Moist Moist to dry Dry	• • • • • •	•	•	•		•	-
hrub / Med Tree hrub / Small Tree hrub / Small Tree hrub / Small Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis	Cunoniaceae Proteaceae Proteaceae Pittosporaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland	< 7 m < 1.2 m 1–5 m 2–5 m	White Image: Constraint of the second seco			Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade	Moist Moist to dry Dry Dry	• • • • • • • •	•	• • • • • • • • • • • • • • • • • • •	•	•	• • • • •	-
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia	Cunoniaceae Proteaceae Proteaceae Pittosporaceae Proteaceae Proteaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland	< 7 m < 1.2 m 1–5 m 2–5 m 1.5–4 m	White Image: Constraint of the second seco			Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade	Moist odry Dry Dry Moist to dry Moist to dry	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •	•	•	• • • • • •	-
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland Coastal, Woodland, Forest, Heathland	< 7 m < 1.2 m 1–5 m 2–5 m 1.5–4 m < 2 m 0.5–10 m	White Image: Constraint of the second seco			Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade	Moist Moist to dry Dry Dry Moist to dry Moist to dry Wet to moist	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •	•	•		-
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae Myrtaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland Coastal, Woodland, Forest, Heathland Woodland, Forest, Heathland	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m	White Image: White Pale Yellow-Yellow Image: Pale Yellow White-Cream Image: Pale Yellow White Image: Pale Yellow			Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistWet to moist	• • • • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •	•	•		
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland Coastal, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1.5-3 m	White Image: Constraint of the second se			Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistWet to moistMoist to wet	• • • • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	•		
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark Scented Paperbark	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia Melaleuca squarrosa	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae Myrtaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest Heathland, Forest, Moorland	<7 m <1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1.5-3 m 1-5 m	White Image: Constraint of the second se	Image: state stat		Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistWet to moistMoist to wetWet to moist	• • • • • • • • • • • • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • •	• • • • •		
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark Scented Paperbark Common Boobialla	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia Melaleuca squarrosa Myoporum insulare	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae Scrophulariaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest Heathland, Forest, Moorland Coastal	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1.5-3 m 1-5 m To 8 m	White Image: Constraint of the second se			Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Semi-shade Sun	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistWet to moistMoist to wetWet to moistMoist to dry	• • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	•		
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark Scented Paperbark Common Boobialla Lancewood/Satinwood	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia Melaleuca squarrosa Myoporum insulare Nematolepis squamea	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae Myrtaceae Scrophulariaceae Rutaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland Coastal, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest Heathland, Forest, Moorland Coastal Damp Forest	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1.5-3 m 1-5 m To 8 m 3-10 m	White Pale Yellow-Yellow Pale Yellow White-Cream White Pale Yellow White	Image: state stat		Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Semi-shade Sun	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistWet to moistMoist to wetWet to moistMoist to dryWet to moistMoist to dryWet to moistMoist to dryWet to moist			• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • •	• • • • •		
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark Scented Paperbark Scented Paperbark Common Boobialla Lancewood/Satinwood Musk Daisybush	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia Melaleuca squarrosa Myoporum insulare Nematolepis squamea Olearia argophylla	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae Myrtaceae Scrophulariaceae Rutaceae Asteraceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest Heathland, Forest, Moorland Coastal Damp Forest Forest	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1.5-3 m 1-5 m To 8 m 3-10 m 1-3 m	White Image: Constraint of the second se	Image: state stat		Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Semi-shade Sun Semi-shade Sun	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistMoist to wetWet to moistMoist to dryWet to moistMoist to dryWet to moistMoist to dryWet to moistMoist to dryWet to moistMoist to dry			• • • • • • • • • • • • • • • • • • •				
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hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark Scented Paperbark Common Boobialla Lancewood/Satinwood Musk Daisybush Tree Everlasting Yellow Dogwood	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia Melaleuca squarrosa Myoporum insulare Nematolepis squamea Olearia argophylla Ozothamnus ferrugineus Pomaderris elliptica	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae Scrophulariaceae Rutaceae Asteraceae Rhamnaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest Heathland, Forest, Moorland Coastal Damp Forest Forest Forest Forest, Scrubland Forest	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1.5-3 m 1-5 m To 8 m 3-10 m 1-3 m 5-12 m < 10 m	White Image: Constraint of the second se	Image: state stat		Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Semi-shade Semi-shade Semi-shade Semi-shade Semi-shade to shade	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistMoist to wetWet to moistMoist to dryWet to moistMoist to dryWet to moistMoistMoistMoistMoistMoistMoist	• • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • •				
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark Scented Paperbark Common Boobialla Lancewood/Satinwood Musk Daisybush Tree Everlasting Yellow Dogwood Christmas Mintbush	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia Melaleuca squarrosa Myoporum insulare Nematolepis squamea Olearia argophylla Ozothamnus ferrugineus Pomaderris elliptica Prostanthera lasianthos	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae Scrophulariaceae Rutaceae Asteraceae Rhamnaceae Lamiaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest Heathland, Forest, Moorland Coastal Damp Forest Forest Forest Forest Forest Forest	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1-5 m To 8 m 3-10 m 1-3 m 5-12 m < 10 m 5-30 m	White Pale Yellow-Yellow Pale Yellow White-Cream White Pale Yellow White White White White White White White White White White-Cream White White-Cream White-Crea	Image: state stat		Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Semi-shade Semi-shade Semi-shade Semi-shade to shade Semi-shade to shade	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistWet to moistMoist to wetWet to moistMoist to dryWet to moistMoist to dryWet to moistMoistMoistMoistMoistMoistMoist	• • • •		• • • • • • • • • • • • • • • • • • •				
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hrub / Med Tree hrub / Small Tree mall shrub	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark Scented Paperbark Common Boobialla Lancewood/Satinwood Musk Daisybush Tree Everlasting Yellow Dogwood Christmas Mintbush	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia Melaleuca squarrosa Myoporum insulare Nematolepis squamea Olearia argophylla Ozothamnus ferrugineus Pomaderris elliptica Prostanthera lasianthos	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae Scrophulariaceae Rutaceae Asteraceae Rhamnaceae Lamiaceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland, Forest, Heathland Coastal, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest Heathland, Forest, Moorland Coastal Damp Forest Forest Forest Forest Forest Forest Forest	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1-5 m To 8 m 3-10 m 1-3 m 5-12 m < 10 m 5-30 m	White Pale Yellow-Yellow Pale Yellow White-Cream White Pale Yellow White			Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Semi-shade Semi-shade Semi-shade Semi-shade to shade Semi-shade to shade	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistWet to moistMoist to wetWet to moistMoist to dryWet to moistMoist to dryWet to moistMoistMoistMoistMoistMoistMoist	• • • •						
hrub / Med Tree hrub / Small Tree	Leatherwood Silver Banksia Saw Banksia Prickly Box Southern Grevillea Lesser-Beaked Hakea Woolly Teatree Manuka Coastal Paperbark Scented Paperbark Common Boobialla Lancewood/Satinwood Musk Daisybush Tree Everlasting Yellow Dogwood Christmas Mintbush Mountain Pepper	Aotus ericoides Eucryphia lucida Banksia marginata Banksia serrata Bursaria spinosa Grevillea australis Hakea megadenia Leptospermum lanigerum Leptospermum scoparium Melaleuca ericifolia Melaleuca squarrosa Myoporum insulare Nematolepis squamea Olearia argophylla Ozothamnus ferrugineus Pomaderris elliptica Prostanthera lasianthos Tasmannia lanceolata	Cunoniaceae Proteaceae Pittosporaceae Proteaceae Proteaceae Myrtaceae Myrtaceae Myrtaceae Scrophulariaceae Rutaceae Asteraceae Rhamnaceae Lamiaceae Winteraceae	Rainforest, Forest Coastal, Forest, Heathland, Woodland Coastal, Woodland Woodland, Shrubland Alpine Heathland & Woodland Forest, Woodland, Forest, Heathland Coastal, Woodland, Forest, Heathland Woodland, Forest, Heathland Coastal, Wet Forest Heathland, Forest, Moorland Coastal Damp Forest Forest Forest Forest Forest Forest Forest	< 7 m < 1.2 m 1-5 m 2-5 m 1.5-4 m < 2 m 0.5-10 m 3-15 m 1.5-3 m 1.5-3 m 1-5 m 3-10 m 3-10 m 1-3 m 5-12 m < 10 m < 10 m	White Pale Yellow-Yellow Pale Yellow White-Cream White Pale Yellow White White White White White White White White White-Cream White-Cream White White-Pale Yellow White	Image: set in the set in		Sun Semi-shade to shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Sun to semi-shade Semi-shade Semi-shade Semi-shade Semi-shade to shade Semi-shade to shade Semi-shade to shade	MoistMoist to dryDryDryMoist to dryMoist to dryWet to moistWet to moistMoist to dryWet to moistMoist to dryWet to moistMoistMoistMoistMoistMoistMoistMoistMoistMoistMoistMoistMoistMoistMoistMoist	• • • •						
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Know your pollinators



European honey bees have two pairs of wings and long, segmented antennae. They are daytime-flying and feed on nectar and pollen. They are generalist pollinators and provide the bulk of pollination services for horticulture and crop plants. Honey bees and native bees are both essential to functioning ecosystems and food security in Australia. Honey bees have become an

important part of the Australian landscape. Honey bees live as colonies, and have a long history of coexistence with humans. including in domestic gardens.



Australian native bees

comprise more than 2000 species, which provide essential pollination services. Native bees are generally solitary and live in nests in the ground or in hollow stems, old borer holes and other cracks and crevices, and some have evolved to pollinate particular native flowers through 'buzz pollination'. Although many Australian native bees are generalist foragers, some species have co-evolved with native plants and adapted to be the most effective pollinators of their flowers. Many native plant species, such as Dianella and *Grevillea* require specially adapted insects to access their nectar and enable the transfer of pollen to the stigma. Most native bees are solitary, but some species found in northern Australia (Tetragonula sp. and Austroplebeia sp.) are social bees and are used for commercial pollination of crops like macadamia nuts.



Fly species number up to 30,000 in Australia, and can be identified by having only one pair of flight wings. A second set of wings are modified into club-shaped paddles that allow flies to hover and stabilise their flight. Unlike bees and wasps, many flies (Brachycera) have very small, clubbed antennae at the front of their head. Flies, including blowflies, are often attracted to flowers that smell like carrion. Some flower-flies, have hairy bodies that easily collect pollen while they are feeding. Flies provide a range of services in the garden, including pollination, decomposition and predation.



Beetles have hard outer wings that form their distinctive beetle shape. Their outer wings form a T-shape where they join at the top, unlike bugs where the outer wings make an X- or Y-shape. Some beetles feed on nectar and pollen, usually by crawling over flower surfaces. There are around 30,000 species of beetles in Australia, with many yet to be formally described.



Moths also have wings covered in tiny scales and tend to be subtle in colour. They have antennae without clubs and hold their wings flat when at rest. They are generally dusk- and night-flying but there are some exceptions: the grapevine moth is a commonly seen day-flying moth. Moths feed on nectar. Australia has a high diversity of moth species, with up to 22,000 species thought to exist across the continent.



Hoverflies are a type of fly, distinguishable by their large eyes, short antennae, bright black and yellow abdomen and their hovering flight behaviour. Adult hoverflies are nectar and pollen feeders. Hoverfly larvae feed on pests such as aphids, thrips and leafhoppers and are excellent biocontrol agents.



Butterflies have wings covered in tiny scales. They have clubbed antennae and hold their wings upright when at rest. They are day-flying and have long tongues nectar in flowers with deep tubes.



Bumblebee – Bombus terrestris or the buff-tailed bumblebee is an invasive species that was first found in Tasmania in 1992. It is currently unclear what impact the introduction of bumblebees has had on the Tasmanian environment. As a listed invasive species, the active promotion of the species in Tasmania is currently illegal, and its importation to the mainland is prohibited.

Flower forms



Generalist flowers can be pollinated by many different insects and animals. They are typically saucer shaped with many stamens and have a surface that insects can walk on. Eucalyptus flowers and daisy flowers are generalist flowers they can be pollinated by bees, flies, beetles and butterflies.



Specialist flowers have modifications to their shape and size that only let certain pollinators access the nectar and pollen. These flowers might have deep flower tubes or narrow entry points so that only a select group of pollinators can access them. The advantage of specialisation is that pollination is very targeted and efficient, with accurate pollen placement made possible by co-evolution between flowers and insects. The disadvantage is that if the correct pollinator isn't there, the flowers aren't pollinated. Often, nectar is produced at the base of the flower, forcing pollinators to enter the flower fully and in the process, become covered in pollen.

Pollinator rewards

Nectar is a sugary solution, rich in carbohydrates, vitamins and minerals, produced by flowers and sometimes by glands on leaves or stems (called extra-floral nectaries). Nectar is attractive to insects. and provides an immediate energy source needed for tasks such as hunting pest insects, laying eggs in decomposing organic matter, collecting pollen, or parasitising other insects.

Carbohydrates alone don't support everything needed for health and growth, so insects also need pollen.

Pollen is rich in protein, fats and nutrients. Bees are vegetarian, and need to collect pollen to feed their offspring.

that they can use to feed on Butterflies are usually brightly coloured, with approximately 600 species found in Australia.

Buzz pollination

Some flowers do not produce any nectar; they specifically target pollencollecting bees, and only offer pollen rewards. To limit pollen loss and ensure effective pollination, some plants produce flowers with specialised, tubular anthers, that only open at the tip. To extract pollen, bees use vibrations to 'buzz' the pollen grains out of the pores of these anthers. Many crops are buzz pollinated, including tomatoes, potatoes, eggplants, capsicum, chillies, tomatillo and cranberries.

European honey bees are unable to buzz pollinate flowers, but several native bees, such as the blue-banded bee, and teddy bear bee (*Amegilla* sp.) and carpenter bee (*Xylocopa* sp.) are exceptionally good large buzz pollinators, and have evolved to pollinate native plants such as flax lilies (*Dianella* sp.). Many of our smaller, ground nesting bees utilise vibration to help them excavate their burrows, and they also use that skill to buzz pollen from the anthers of native plants.

Planting buzz-pollinated species will encourage populations of buzz pollinators for successful pollination of food crops and ensure seed set in native plants. Many small ground nesting bees also buzz pollinate native flowers.

Nectar feeding

Grevillea flowers and other tubular flowers are often adapted to be successfully pollinated by birds. Pollen is 'presented' on a floral stigma that extends outside the flower. When birds feed on the nectar, pollen is deposited on their beaks or heads. Bees, also attracted to the sugary nectar, crawl into the side of the flower and feed on the nectar without encountering the pollen-laden stigma. The plant doesn't receive the pollination benefit from the insect, but flowers such Grevillea species can be a very useful source of nectar for insects in the cooler months.



Nurseries

Most of the plants shown in the planting guide will be available at nurseries that have a good stock of native plants. But if your local nursery doesn't stock the plant you're after, ask them to order it in. For a list of wholesale nurseries

that stock all the plants shown in the planting guide, plus other useful resources, visit the Wheen Bee Foundation website or scan the QR code.



WheenBeeFoundation.org.au/our-work/powerful-pollinators

Wheen Bee Foundation

Powerful Pollinators Planting Guides are produced by Wheen Bee Foundation. We fund vital strategic research and education initiatives that strengthen bees, improve pollination efficiency, and protect our food security and ecosystem health. Visit the website for more information.

WheenBeeFoundation.org.au

Far left: The spreading flax lily, *Dianella revoluta,* is buzz pollinated.

Left: This European honey bee is 'side-working': feeding on the nectar-rich flowers without coming into contact with the plant's pollen.

Front cover:

 Lasioglossum sp. burrowing bee (Halictidae) on Clustered Everlasting, *Chrysocephalum semipapposum*. (Photo: Lynne Forster)
 Gunns Plains, Tasmania. (Photo: Stephen Quarrell)
 European honey bees, *Apis mellifera*. (Photo: Kirrily Hughes)

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