

Planting Bee friendly native gardens

Presentation to the
**Mornington Peninsula
Beekeepers Association**

by

Daavid Turnbull – May 2019

Who am I?

- With my wife, Judy, as amateur BeeKeepers we run 3 hives – 2 at home in McCrae and one at my office in Arthurs Seat.
- I am a qualified horticulturist with specialist knowledge in native plants for which I have a passion.
- I work at Austplant Nursery and Gardens on Purves Road, Arthurs Seat:
www.austplant.com.au

We call our little apiary “Bayside Bees”



BaysideBees.mp4

Plants need pollination!

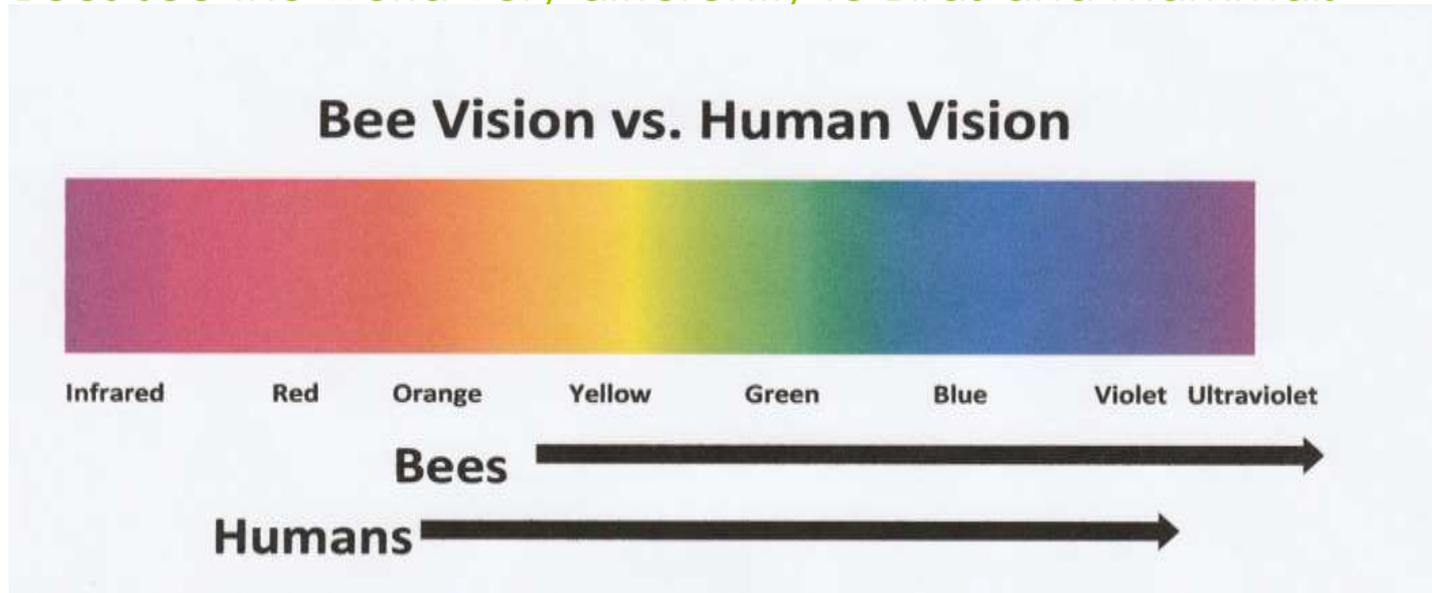
- Different plants use different pollination strategies
- Wind. This needs **lots of pollen** because it is bit hit and miss. Eg: Grasses, Gymnosperms, Wattles
- Insects, including bees. Less pollen needed because insects effectively deliver pollen between plants of the same species.
- Other animals, including birds.

Different pollination strategies evolved over an evolutionally time frame

- Plants evolved before insects so wind pollination came first
- Insects came next and nectar became part of the pollination strategy to attract/reward the insect for pollination
- Australia is an ancient land (part of Gondwana) and plants evolved strategies for birds and other animals to also do pollination for them, again based on a nectar reward.
- There are (almost) no bird/animal pollinated in Europe – where the European Honey Bee evolved.

How plants attract insects to their flowers.

Bees see the world very differently to Birds and mammals



Bees see a very different world to what we see.

What we see as a simple yellow flower has a whole lot going on above our visible spectrum.



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Notice how with the pattern on the flower that cues are available to the insect to know where to go for the reward.



Dandelion



Nectar / Pheromones/Scent

- The smell of a flower probably plays as strong or stronger a role as how it looks to the potential pollinator. Alas it does not seem to be as well researched and it is an area where I lack the knowledge.
- Plants in less windy and sheltered areas will have a scent trail that is easier for insects to navigate.
- Bees have larger olfactory organs than some other insects like butterflies.
- There can be an issue with beekeepers wearing certain perfumes

Native plants evolved with native pollinators.

This is a native bee, *Tetragonula carbonaria*, on a native Pig Face (*Carpobrotus rossii*). Native bees are much smaller than their European counterparts and native plants have evolved to attract them as pollinators.



Matters of size

native paper daisy, Xerochrysum bracteatum with a native bee on the left and a European Honey Bee on the right. (These two flowers are about the same size.)



Flower shape



The form the flower takes is also important. Flowers that want bees/insects to visit for pollination services will provide a suitable landing pad and require the insect, in this instance a honey bee to brush past the pollen to get to the nectar reward.

Philotheca myropoides or native wax flower will be humming with 10's of thousands of bees during its long flowering period.

Grevilleas



Grevilleas and other members of the Proteaceae family have a lot of nectar and have evolved to be pollinated by nectar feeding birds. The plant does not have to produce much pollen because this approach is very efficient in distributing the pollen between flowers.

Honey bees can collect nectar from Grevilleas but this does not help much with pollination.



Note how in this photo the bees are collecting nectar only and bypassing the pollen dobber.

Some grevilleas intend to attract insect pollinators and are excellent to have around the apiary *Grevillea sericea*

- Flower shape allows easy access by bees to the nectar.
- High frequency “Mauve” colouration helps the bees find the flowers.
- This species flowers prolifically providing a nectar source all year.

Grevillea sericea

An Australian Plant that ticks a lot of boxes when it comes to keeping European bees happy locally.

- High in nectar
- Flowers prolifically all year
- Tolerant of a range of conditions and soil types
- Particularly hardy once established



GrevilleaSereceaEBee.mp4

Eucalyptus

- Includes *Corymbias*, *Eucalyptus* and *Angophera*
- Good source of nectar and pollen
- Large quantities
- There are Eucalyptus that flower in each month of the year.
- *Corymbia ficafolia* (From WA) is widespread locally. Tends to flower in Jan/Feb but can flower any time
- *Eucalyptus caesia* ssp. *Magna* or “Silver Princess” flowers late winter/early Spring.
- The very very dry last year saw poor flowering of eucalyptus in local bushland.

Other bee friendly natives

- Grass Trees, *Xanthorrhoea* sp.
XanthorrhoeaEBee.mp4
- Wax Flower, *Philotheca Myropoides* is an absolute Bee magnet
PhilothecaMyropoidesEBee.mp4
- *Hakea* “Burrendong Beauty”
HakeaBurrendongBeauty.mp4

Bioactive Honey – “Manuka”

- New Zealand “Manuka” honey is made by bees from *Leptospermum scoparium* of which many cultivars are available locally, eg: *L. scoparium nanum rubrum* and L. “Pink Cascade”
- Australian *Leptospermum* (Tea Tree) species vary in their bio active component. The local Coastal Tea Tree (*L. laevigatum*) have minimal amounts but some have lots!
- *Leptospermum polygalifolium* has the highest bioactive components of any Tea Tree. Many cultivars have been available in the nursery trade for decades sold for their ornamental qualities.
- A limited number of these cultivars are available to be purchased this evening.

Rhodanthe chlorocephala

(Pink and White Everlasting, Rosy Sunray, Pink Paper-daisy)

and

Xerochrysum bracteatum

(Paper Daisy)

For sale \$2 per tube



But wait there is more...



Leptospermum polygalifolium
"Cardwell" 1.5m x 1.5m
"Little Bun" 0.4m x 0.5m
\$10 each



Grevillea sericea
1-2 m x 1-2m
\$13 each