



The extraordinary honey bee and its impact on the food we eat

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Honey Bee
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The humble honey bee is responsible for much more than the honey drizzled on our crumpets or porridge. From almonds to avocados to macadamias, honey bees are vital for the pollination and production of many of our favourite foods. Honey bees also contribute to the meat we eat with some livestock feed crops dependent on pollination. One third of Australian food that ends up on our plate is dependent on honey bee pollination.

Honey bees are vital to filling our bellies and to the Australian economy. With over 35 food industries' crop production dependent on pollination, the annual contribution of the humble honey bee is \$14.2 billion¹ to our economy. In addition, honey and hive products also contribute \$147 million in farm gate value (gross value of production) to the Australian economy.



Snapshot of beekeeping in Australia²



Commercial beekeepers



Commercial hives



Production from public forests



Production from private forests

1,800



Tonnes average honey production per year

530k



In honey crop and beeswax production

39%



Annual contribution of pollination to economy

39%

20k

\$147m

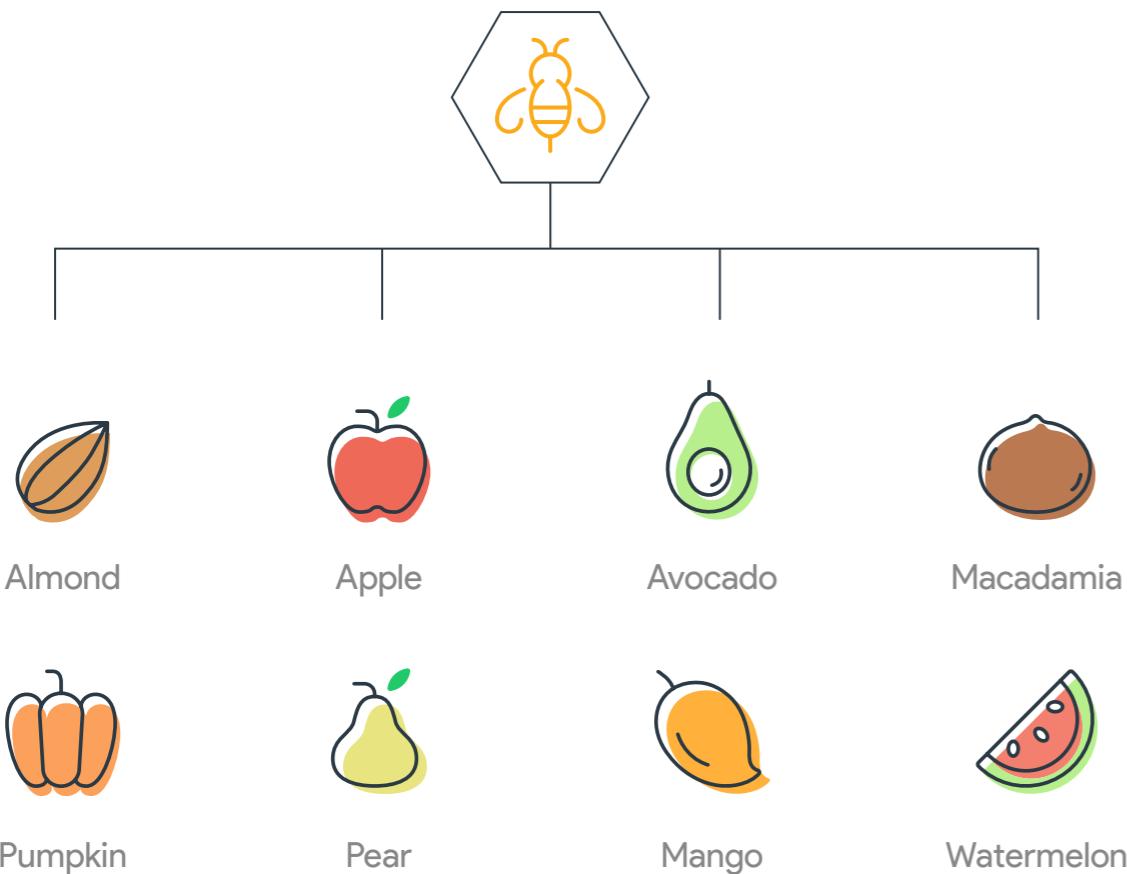
\$14.2b

¹Karasinski J M (2018) The economic valuation of Australian managed and wild honey bee pollinators in 2014-15, Curtin University.

²Data sourced from Michael Clarke and Danny Fe Feuvre, Size and Scope of the Australian Honey Bee and Pollination Industry – A Snapshot. Incomplete Working Draft: 27 May 2020 for AgriFutures.

65% of horticultural and agricultural crops require honey bees for pollination

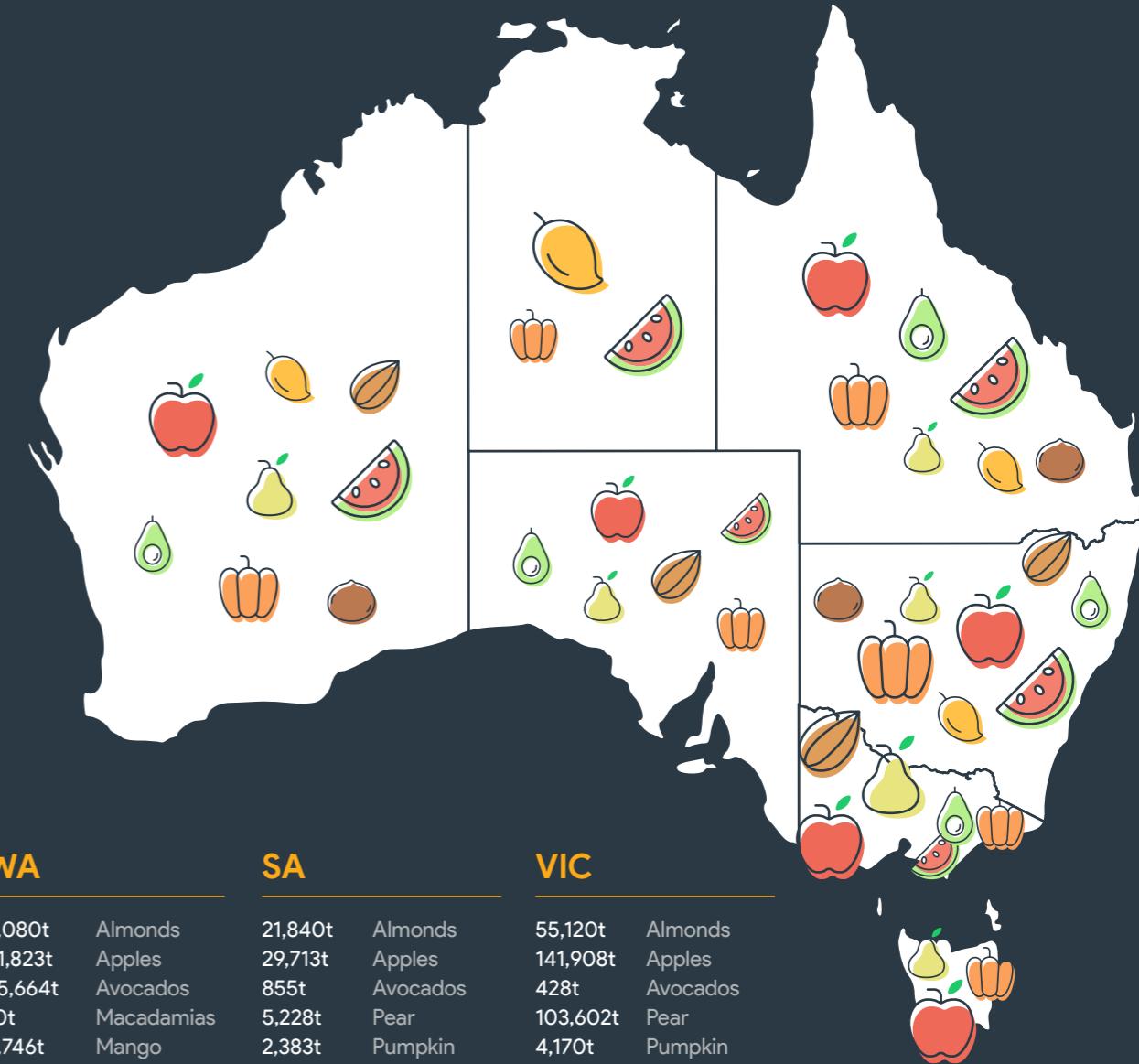
In Australia, 65% of horticultural and agricultural crops introduced since European settlement require honey bees for pollination. Various tree, vine, broadacre and seed crops are largely dependent on this process for their yield. Without bees these fruits, seeds, nuts and vegetables would not make it from the paddock to our plates. The eight industries examined here show the importance of honey bees and pollination services for Australian agriculture and the nation's food security.



These industries are 70%-100% dependent on honey bee pollination for the production of crops.

Crop production by state 2018/2019

States and territories across Australia are dependent on honey bees and pollination services to produce hundreds and thousands of tonnes (t) of crop.



WA

2,080t	Almonds
31,823t	Apples
25,664t	Avocados
10t	Macadamias
3,746t	Mango
4,048t	Pear
20,661t	Pumpkin
32,173t	Watermelon

SA

21,840t	Almonds
29,713t	Apples
855t	Avocados
5,228t	Pear
2,383t	Pumpkin
2,298t	Watermelon

VIC

55,120t	Almonds
141,908t	Apples
428t	Avocados
103,602t	Pear
4,170t	Pumpkin
4,596t	Watermelon

NT

35,212t	Mango
2,302t	Pumpkin
57,452t	Watermelon

QLD

32,785t	Apples
46,623t	Avocados
7,635t	Macadamias
35,212t	Mango
312t	Pear
56,316t	Pumpkin
73,539t	Watermelon

TAS

32,183t	Apples
1,078t	Pear
560t	Pumpkin

NSW

24,960t	Almonds
42,463t	Apples
11,976t	Avocados
6,512t	Macadamia
749t	Mango
228t	Pears
33,222t	Pumpkin
59,750t	Watermelon

Hives and honey bees required for Australian production

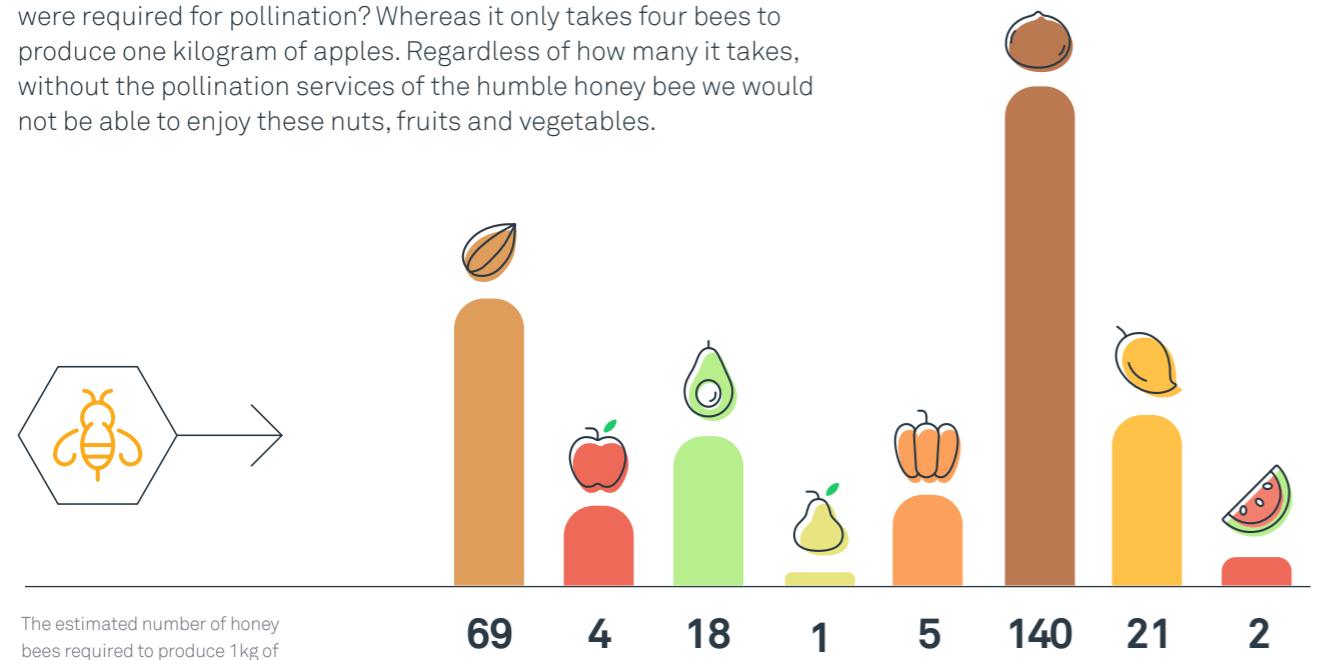
Commercial beekeepers provide pollination services to ensure production of our favourite food crops. For pollination each hive contains between 40,000 and 70,000 honey bees (depending on the crop being pollinated). The honey bees pollinate the fruit by taking pollen from one flower to the same or a different flower. This is an important process to produce nuts, fruits and vegetables of these industries, along with many others.

	Bee 7.6b		Bee 1.3b		Bee 1.6b		Bee 2b
Hive 180,356	Hive 26,400	Hive 22,500	Hive 49,375	Crop Production 104,000t	Crop Production 310,875t	Crop Production 85,5406t	Crop Production 14,157t
Crop Production 104,000t	Crop Production 310,875t	Crop Production 85,5406t	Crop Production 14,157t				
	Bee 14,500		Bee 120m		Bee 1.6b		Bee 560m
Hive 580m	Hive 2,500	Hive 40,000	Hive 14,000	Crop Production 119,614t	Crop Production 114,496t	Crop Production 74,919t	Crop Production 229,808t
Crop Production 119,614t	Crop Production 114,496t	Crop Production 74,919t	Crop Production 229,808t				

The conservative estimated number of hives and honey bees required to produce crops across Australia.

Honey bees required to produce 1kg of crop

Did you know for each kilogram of mangos you eat, 21 honey bees were required for pollination? Whereas it only takes four bees to produce one kilogram of apples. Regardless of how many it takes, without the pollination services of the humble honey bee we would not be able to enjoy these nuts, fruits and vegetables.



The estimated number of honey bees required to produce 1kg of crop from each industry.





Hives required per hectare

The number of hives per hectare (ha) required to produce crops is different for each industry. The exact number depends on many factors, including:

- Grower awareness of the importance of pollination
- Grower willingness to pay for pollination
- The attractiveness of the crop to honey bees
- The crop's ability to generate honey and pollen
- The crop variety used and the presence of unmanaged honey bee colonies.

	4/ha	
	4/ha	
	5/ha	
	2.5/ha	
	2.5/ha	
	2.5/ha	
	8/ha	
	3.5/ha	

The conservative (lower) estimated number of hives per hectare to produce crops.

Snapshot of each industry





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This document is a summary of content
taken from Clarke, M & Le Feuvre , D (2020)
Size and Scope of the Australian Honey Bee
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