BEES, BIOMES AND FOOD SECURITY

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A honeybee pollinates a flower (Creative Commons). Source: https://en.wikipedia.org/wiki/Honey_bee#/media/File:Pollination.jpg

World Bee Day

World Bee Day was an initiative launched in Slovenia on 2014 to increase global awareness about the need to protect bees due to the serious decline in bee populations worldwide. In December 2017, the UN, supported by all UN states, declared May 20th to be World Bee Day. As awareness increases opportunities to restore bee health and bee numbers also increases.

Bees, food and biomes

Much of the world's food production and food security depends on bees and insects which pollinate fruit, vegetable and pasture crops. While not all crops need honeybees for pollination, it is agreed that an increase in the size, quality and/or stability of crop harvests for approximately 70 per cent of the world's main crops requires honeybee pollination. In many biomes and ecosystems, plant species depend on pollinators for survival … the loss of these resulting in further losses in biodiversity and increased vulnerability.

Learn more about the essential role of bees in food production

Podcast: The power of pollinators Food and Agriculture Organization of the United Nations – http://www.fao.org/news/podcast/tzh-06-the-power-of-pollinators-why-more-bees-means-better-food/en

> *"In Australia, two-thirds of all horticultural and agricultural crops need honeybees for optimal pollination. Many fruits, such as apples, raspberries and peaches, are more productive, produce better, more attractive fruit and even store better and for longer when they are serviced by honeybees. Lucerne, which is an important crop for feeding livestock such as cattle, is also much more productive when sufficient numbers of honeybees are available to promote pollination. Almond blossoms rely completely on honeybees for pollination—so, no bees, no almonds. It has been estimated that the value of honeybee-reliant agriculture in Australia is AUD $4–6 billion per year and rising"*
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> From: AustralianAcademy of Science: Getting the buzz on the value of bees – https://www.science.org.au/curious/everything-else/bees

Threats and challenges

Pollinator species are in decline along with global biodiversity. Since the 90's, the worldwide bee population has declined rapidly. There are many possible reasons for this decline including the usage of pesticides, habitat destruction and climate change. The challenge to future food production is maintaining honeybee numbers along with other pollinator species and halting the decline in global biodiversity.

Opportunities

Australian universities and research organisations such as the CSIRO have researchers working on understanding be behaviours, the threats to honeybee populations and ways to combat their decline. Thousands of honey bees have been fitted with tiny sensors as part of a world-first research program to monitor the insects' movements. Understanding bee behaviour while they travel through farm crops will help scientists trouble shoot immediate threats to their survival.

Bee with a backpack… of the sensor variety

Source: Photo CSIRO – www.csiro.au/en/Research/BF/Areas/Protecting-Australias-agricultural-industries/Robot-technology/Swarm-sensing

> *"CSIRO is also involved in bee research initiatives, leading the Global Initiative for Honeybee Health. This includes a project where 5000 bees have been fitted out with tiny sensors, then let loose into the environment. When the bees pass certain checkpoints, the sensors are detected, allowing the researchers to create a map of the bees' movements and better understand how they move through the landscape"*
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> Australian Academy of Science – https://www.science.org.au/curious/everything-else/bees

Unit of Work: Love Food: Love Bees

Act for Bees / Cool Australia

See: Love Food? Love Bees – Powerful pollinators – Geography Years 9 & 10 – https://actforbees.org/resources/curriculum/

Delve into Food Security with the NEW Love Food? Love Bees!–Food Security and Sustainability– Year 9 & 10

Most students connect bees to a painful sting or the honey on their breakfast but have little idea about their crucial role in Australia's food security. Most fruit, nuts, vegetables, seeds and even livestock feed are dependent on bees.

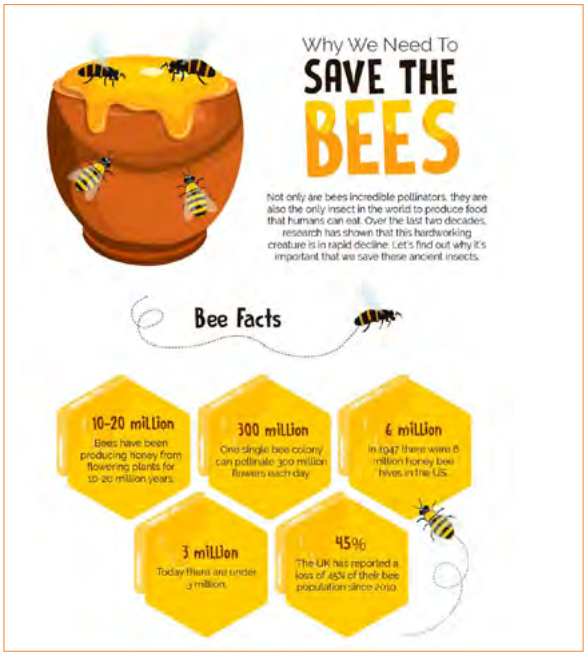
We've teamed up with Cool Australia to create a new package of Love Food? Love Bees!-Food Security and Sustainability- Year 9 & 10 looking at the powerful role of pollinators in food production, the barrage of threats leading to their demise and, importantly, the steps we can take to create change.

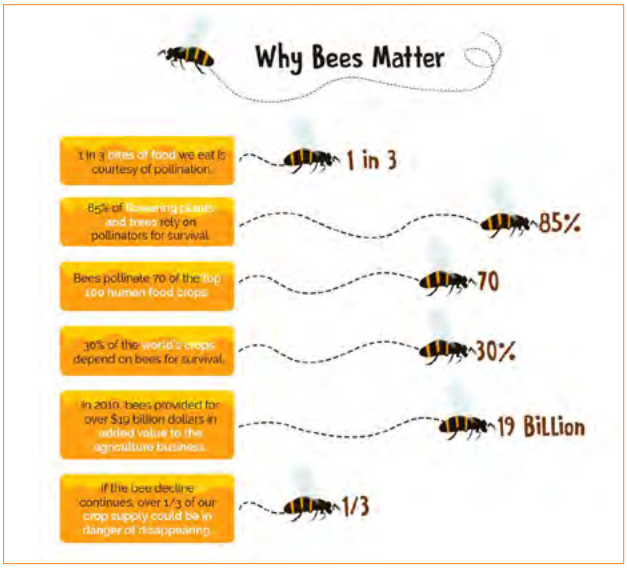
In the lesson Introduction to Food Security, students learn about the role of bees in food production and create a supermarket cheat sheet that their families can use to make more informed food choices.

"Dead bees cover the ground on King Island!" Immerse your students in a hypothetical scenario as part of the lesson Powerful Pollinators. Your students will create a flow diagram to illustrate how the decline in bees will impact the island's food security.

Examine the school canteen menu as part of the lesson Taking Action for Food Security. For this inquiry task, students assess the sustainability of ingredients and then create a proposal outlining more sustainable food options.

Teaching resource on Bees and Food Security (Screen Capture) https://actforbees.org/resources/curriculum/





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