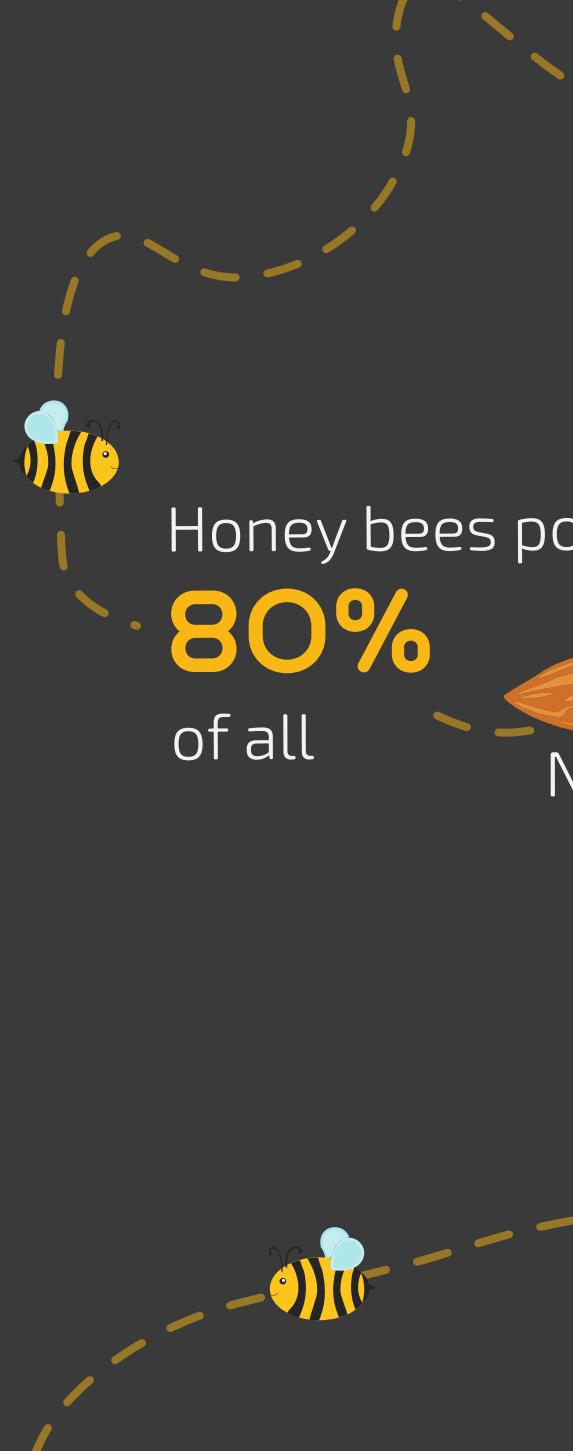


BEE AWARE

The buzz on U.S. honey bee decline

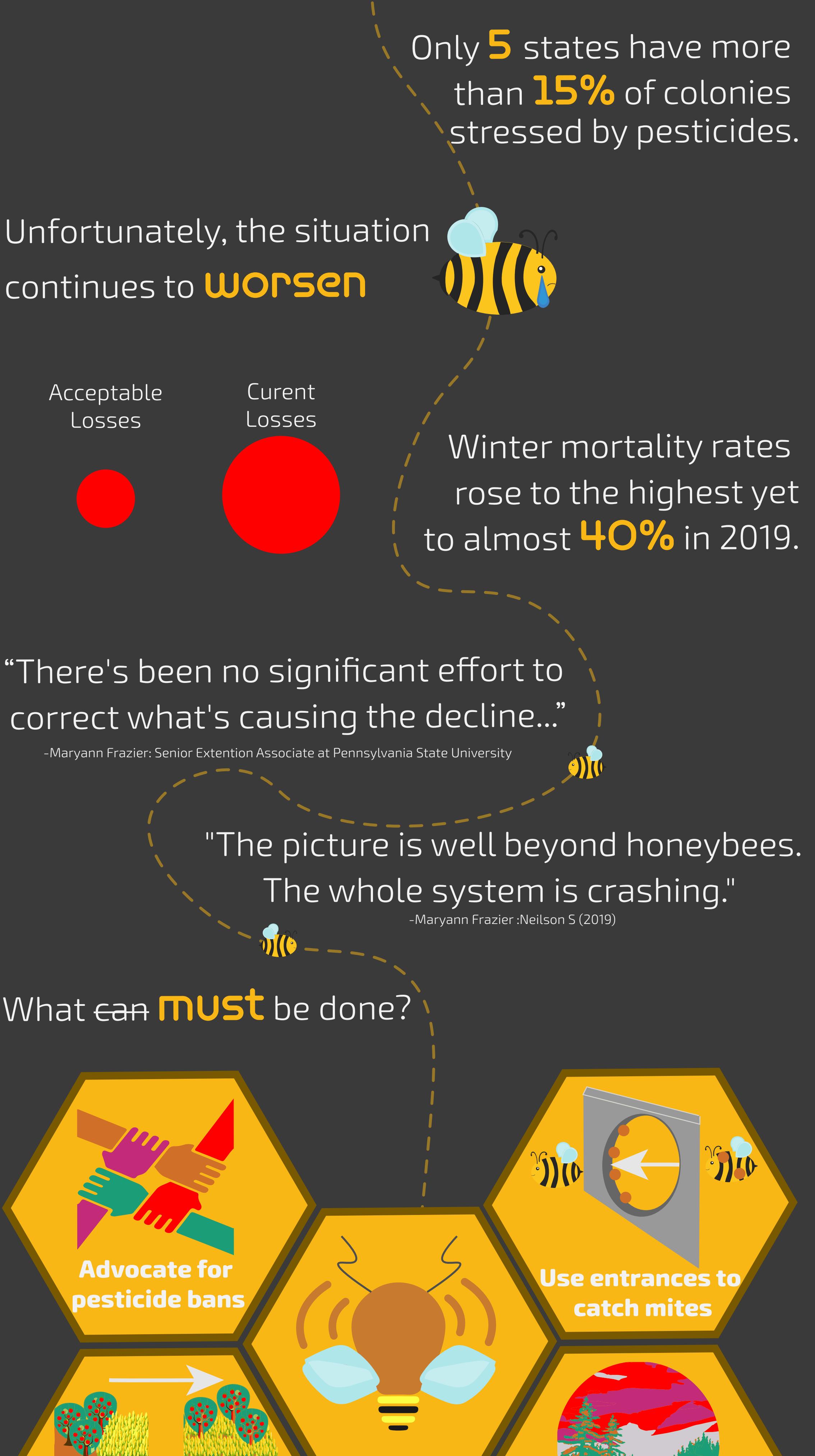
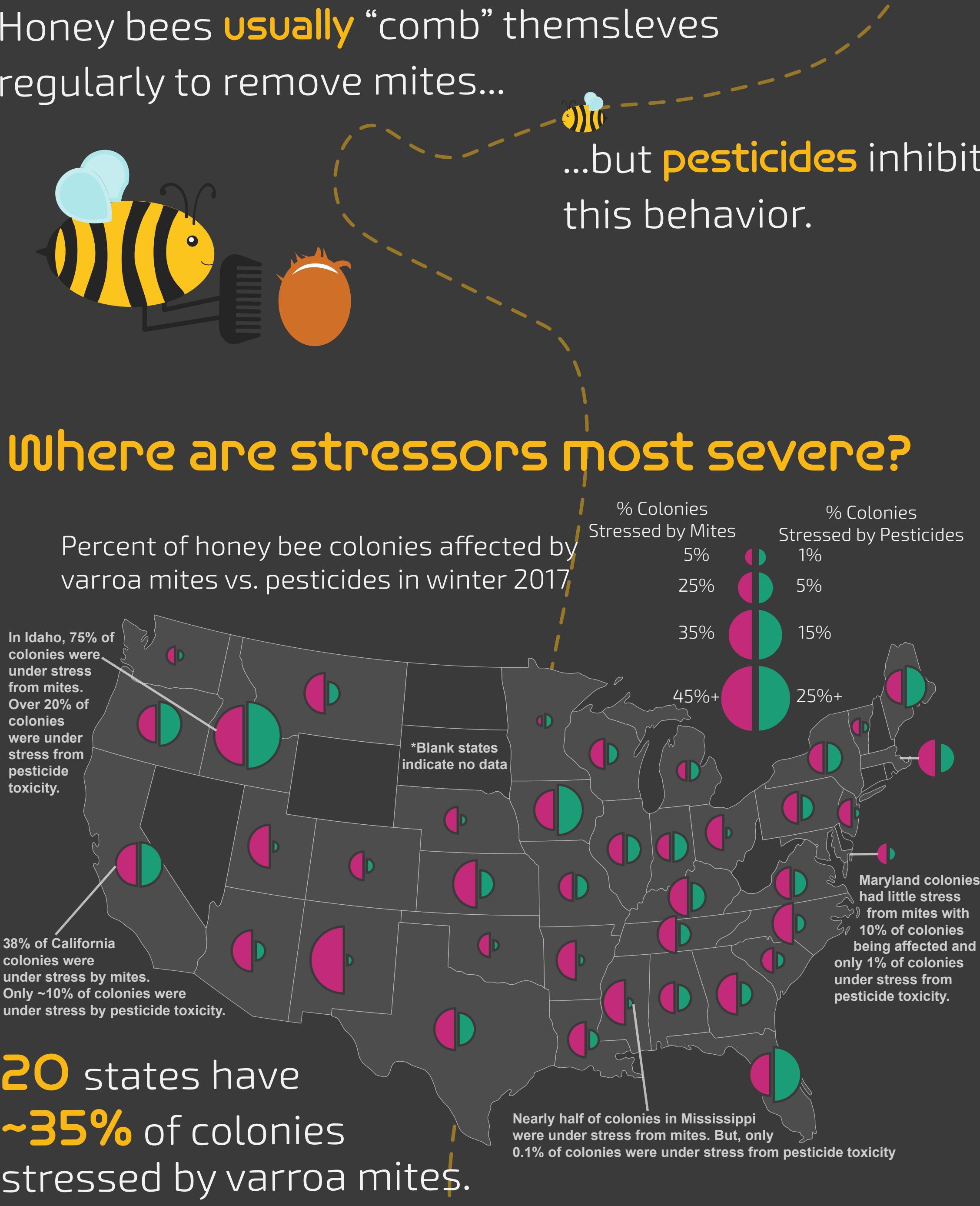
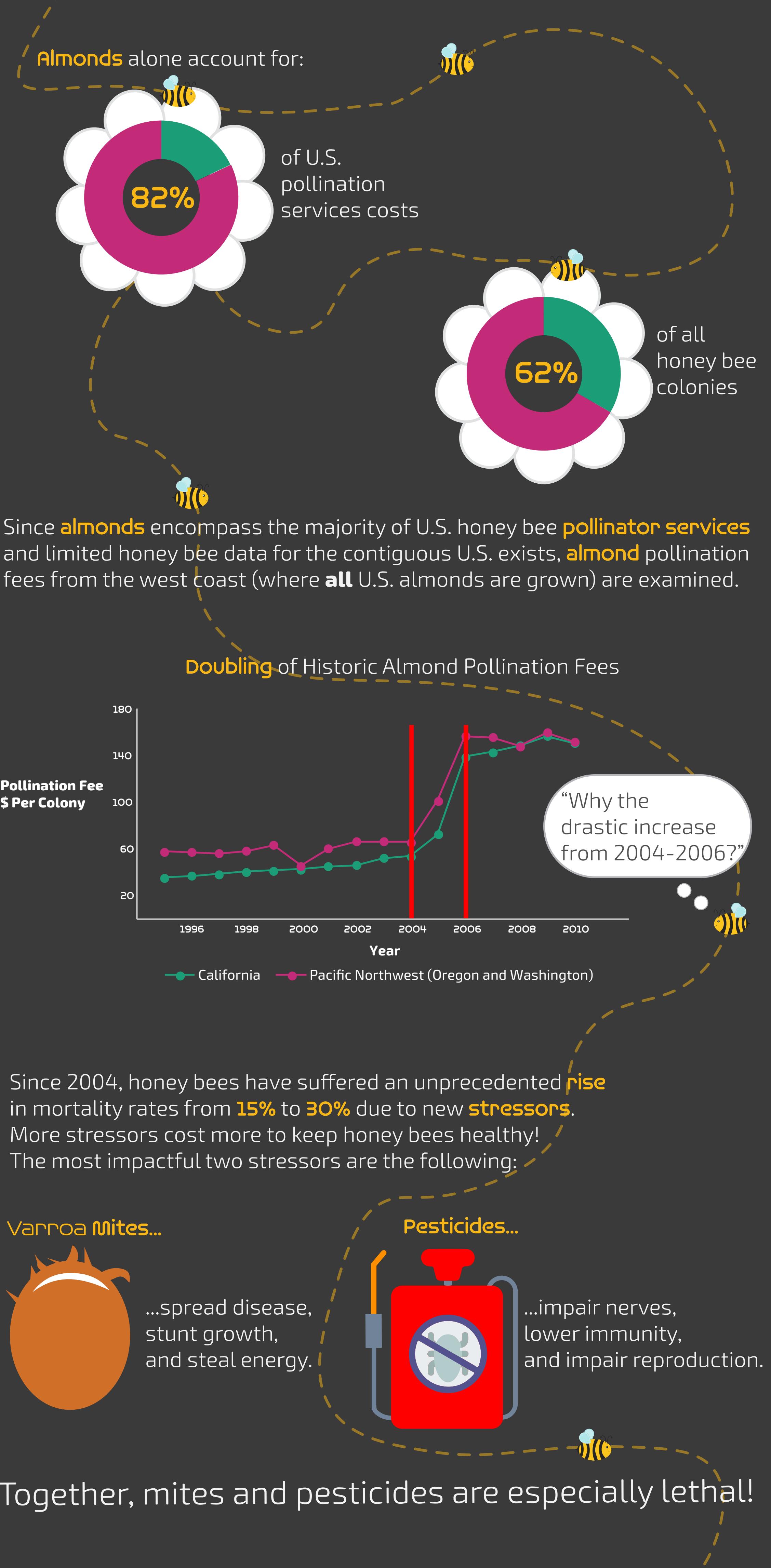


Who is our honey bee?

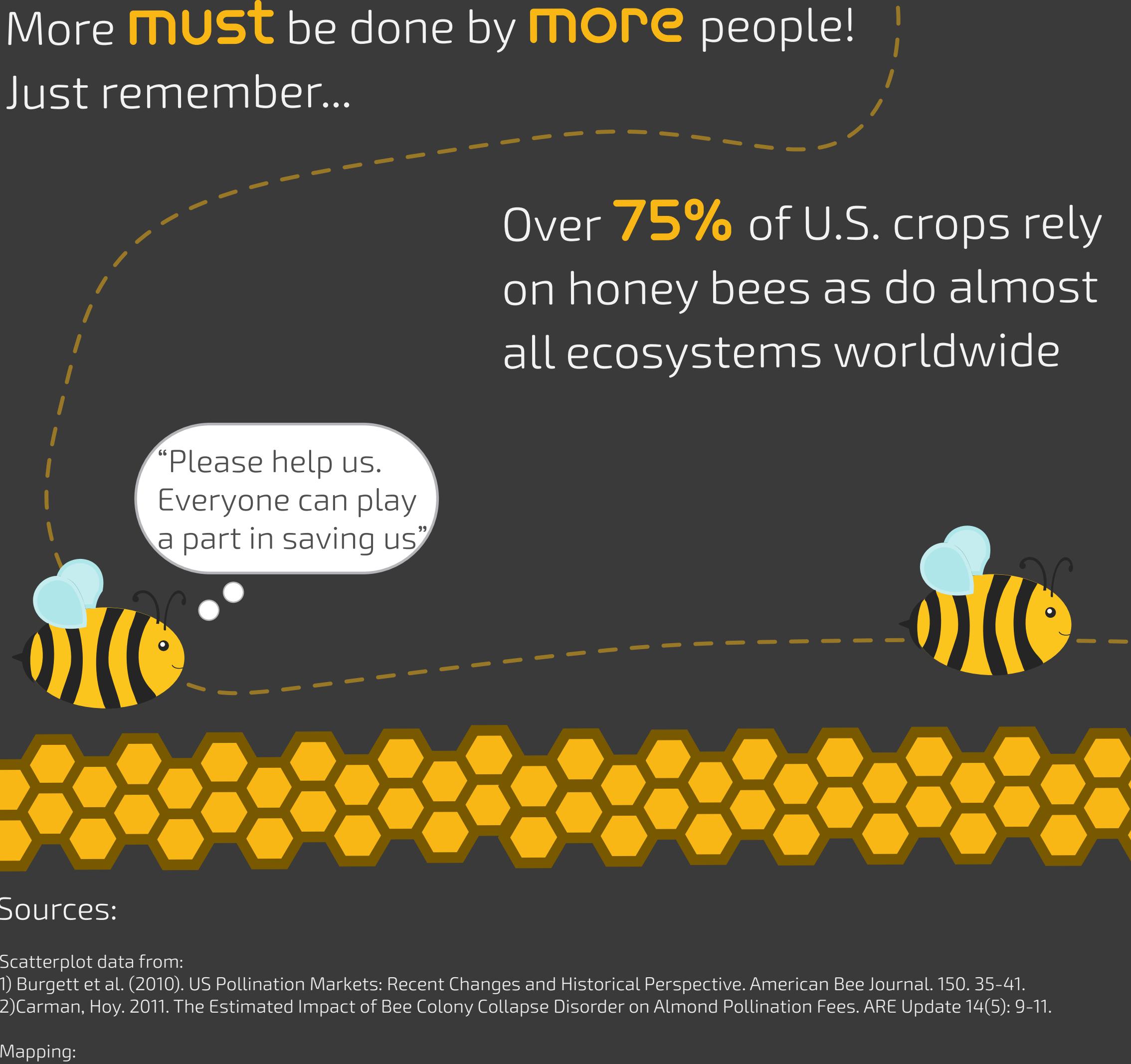


"Hi, I come from Europe! My name is Apis Mellifera, but most call me the western/European honey bee."

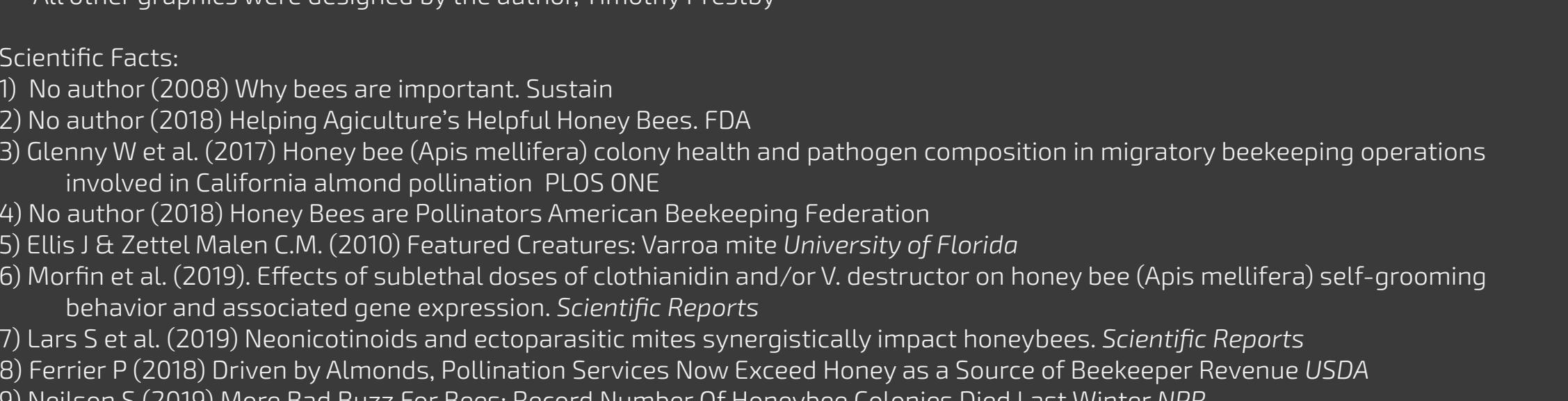
"I live in a **bee colony** managed by **beekeepers**. Farmers rent bee colonies from beekeepers to provide **pollination services** to farmers by carrying **pollen** on our bodies from one flower of a crop to different flowers of the same crop. This helps the crop grow!"



Together, mites and pesticides are especially lethal! Honey bees **usually** "comb" themselves regularly to remove mites... but **pesticides** inhibit this behavior.



What can **MUST** be done?



The entire agriculture system is at risk. More **MUST** be done by **more** people! Just remember...

Over **75%** of U.S. crops rely on honey bees as do almost all ecosystems worldwide

"Please help us. Everyone can play a part in saving us"

Sources:

Scatterplot data from:
1) Burgett et al. (2010). US Pollination Markets: Recent Changes and Historical Perspective. American Bee Journal 150, 35-41.
2) Carman, Hoy. 2011. The Estimated Impact of Bee Colony Collapse Disorder on Almond Pollination Fees. ARE Update 14(5): 9-11.

Mapping:
1) Stressor data is from: National Agricultural Statistics Service (NASS) Quarterly Honey Bee Survey in 2017
2) U.S. Cartographic Boundaries from Project Linework by Daniel P. Huffman
3) Map produced using Indiemapper
4) Color choices inspired by colorbrewer

Graphics:
1) Land equivalent ratio by Tobi Kellner
2) Mountain, Advocacy, and Money Clip art were modified from non-copyright online graphics with free usage rights
**All other graphics were designed by the author, Timothy Prestby

Scientific Facts:
1) No author (2008) Why bees are important. Sustain
2) No author (2018) Helping Agriculture's Helpful Honey Bees. FDA
3) Glenney W et al. (2017) Honey bee (Apis mellifera) colony health and pathogen composition in migratory beekeeping operations involved in California almond pollination PLoS ONE
4) No author (2018) Honey Bees are Pollinators American Beekeeping Federation
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6) Morfin et al. (2019). Effects of sublethal doses of clothianidin and/or V. destructor on honey bee (Apis mellifera) self-grooming behavior and associated gene expression. Scientific Reports
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8) Ferrier P (2018) Driven by Almonds, Pollination Services Now Exceed Honey as a Source of Beekeeper Revenue USDA
9) Neilson S (2019) More Bad Buzz For Bees: Record Number Of Honeybee Colonies Died Last Winter NPR