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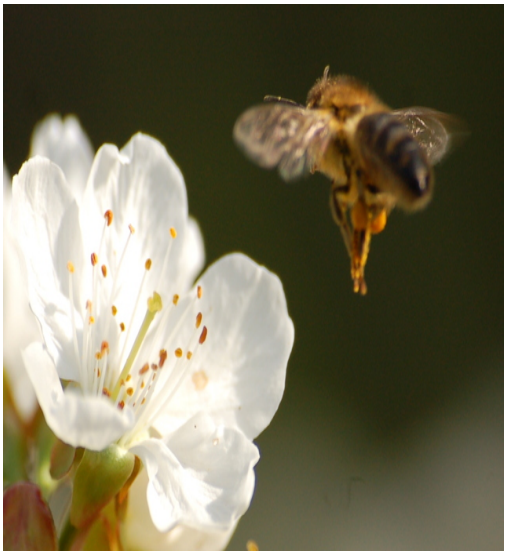
Pollinators: No, Lancet editors, we are not going to lose all of them

By Nicholas Staropoli — July 17, 2015



The *Lancet*, the same journal that brought the world Andrew Wakefield's vaccine-autism link, may have done the same thing for the people who think bees are dying. They have published a paper that makes some bold statements on the relationship between pollinators and human health, and the conclusions are based on a numerical model that is, basically, impossible to make accurate.

Titled Effects of decreases of animal pollinators on human nutrition and global health: modeling analysis [1], it describes a simulation the authors created to try and tell us what would happen to human health if we lost all animal pollinators. It's somewhat like if Joni Mitchell wrote a song about bees in 2015, and had a computer to help. Their model found, unsurprisingly, that it would have far reaching, devastating effects - at least 1 million worldwide deaths annually from this scenario. However, when you really dissect this paper, it s more science fiction than science fact.

Putting pollinators in perspective

If we were to play the word association game, and I gave you the word pollinators one of your first response words would almost certainly be bees; for most people pollinator and bee are interchangeable and it is most certainly what the authors had in mind for this model, even though that isn't what they actually did. In their opening paragraph they discuss (albeit not by specifically by name) colony collapse disorder (CCD), so make no mistake this paper is about bees - and they must mean one bee species out of about 28,000, if CCD is their fear. However, they don t just eliminate bees in their model, they eliminate all animals. That s where their model starts to go awry.

In nature, hundreds of thousands of species [2], if not more, of animals participate in pollination of

plants that are involved in agriculture. Bats, primates, lizards, birds, butterflies, ants, rats, wasps [3] ...I could go on, all are important pollinators. In their model, all of these have been eliminated from nature. Certainly, bees are very prolific pollinators, however, they aren t the only ones that matter. It is a tremendous stretch for them to say all of these are in decline. Furthermore, it s factually incorrect to say that at some point we in danger of *losing them all*. This scenario is just science fiction.

And animals are really just part of the pollination system. Wind is another significant player in agriculture pollination. Corn, rice, wheat, rye, barley and oats [4] are all wind pollinated and their continued growth would certainly not be hindered by the loss of all animal pollinators. Many plants can also self pollinate [5], where a plant, in the absence of other opportunities for pollination, will fertilize itself. Also, we can pollinate the plants, something humans have done for thousands of years.

A solution to the lack of nutrition

Let s take the authors at their word, because although very implausible, their general concern, no matter how far-fetched, is correct: losing *all the animals* would have dire consequences for human health. The authors say that without animal pollinators we would have a significant decrease in fruit and vegetable availability, and the resulting micronutrient deficiency would lead to a number of negative health consequences. They focus on the loss of vitamin A and folate for the purposes of their model.

The authors estimate that a complete loss of animal pollinators from the planet would result in an additional 71 million people at risk for vitamin A deficiency and an additional 173 million people at risk of having a folate deficiency.

If only there was a way to get micronutrients into crops...

O but there is: GMOs. Golden rice [6] and super bananas [7] to name just two that fit the bill. One currently doesn t exist for folate, but a genetically engineered crop that produces high amounts of folate could also made. GMOs like golden rice and super banana already hold the key for how to prevent micronutrient deficiency. So their assessment that a loss in these nutrients would lead to an additional 1.4 million annual world wide death from losing these micronutrients is short sighted because we already have ways to deal with this; they just aren t currently being utilized.

What *can* be done for pollinators?

This is all not to downplay the importance of pollinators. They are a vital cog in the agriculture machine, and bee health in particular is something that deserves our attention. However, the authors of this study appear to only exacerbate confusion about bees and pollinators. They also senselessly vilify neonicotinoids and describe them as a pollinator-harming pesticides, which is a claim that has zero scientific backing [8].

What is really hurting the bees and other similar pollinators? According to a USDA report [9]from 2013 it is infectious agents and habitat loss. In fact, habitat loss is a major problem for many

animal pollinators. From fruit bats in the Pacific [10] to lemurs in Madagascar [11] habitat loss is threatening a wide variety of animal pollinators. One way to deal with this is to switch more land over to higher yield conventional farming with GMO crops [12]. If more farms stay with or transition to organic farming, we may need to convert more of these pollinator s natural habitat to organic farmland to meet the ever increasing food demand created by the world's expanding population.

Links

[1] http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(15)61085-6.pdf
[2] http://pollinator.org/Resources/facts.Primer.pdf
[3] http://www.fs.fed.us/wildflowers/pollinators/animals/index.shtml
[4] http://www.pollinator.ca/bestpractices/wind_pollination.html
[5] http://espacepourlavie.ca/en/self-pollinating-plants
[6] http://www.goldenrice.org/?source=acsh.org
[7] http://www.theguardian.com/lifeandstyle/shortcuts/2014/jun/17/super-banana-vitamin-enriched-upgrade/?source=acsh.org
[8] http://www.science20.com/jon_entine/neonicotinoids_and_the_beepocalypse_that_never_was-156551/?source=acsh.org
[9] http://www.usda.gov/documents/ReportHoneyBeeHealth.pdf
[10] http://www.fws.gov/pacificislands/fauna/marianabat.html/?source=acsh.org
[11] http://blogs.scientificamerican.com/extinction-countdown/crisis-in-madagascar-90-percent-of-lemur-species-are-threatened-with-extinction/?source=acsh.org
[12] http://acsh.org/2015/06/pope-gmo/