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You're Worrying About the Wrong Bees

Native bee (Andrena sp) on coneflower. ALEX WILD

bumblebee species declined 96 percent in the last 20 years, and three species are believed to already be extinct. A little part of me despairs when I read in a scientific paper: "This species probably should be listed under the Endangered Species Act if it still exists."

The Bee News You Are Missing

Last week, the big bee news was a suggestion nicotine-derived pesticides can cause honey bee addiction. But you might have missed another important paper that looked at the same group of pesticides on both honey bees and native bees. This massive study paired multiple plantings of seeds coated with a neonicotinoid pesticide with seed treated only with a fungicide. This was one of the largest tests to date of how pesticides and bees interact in a real-world situation, outside a laboratory.

Seeds of all sorts are commonly treated with neonicotinoid pesticides as a preventative treatment. Neonicotinoid pesticides circulate in plant tissues, so any insect munching on the seedlings will be stopped. Unfortunately, the pesticide remains in the plants as they flower, and bees of all types may pick up the chemicals in pollen and nectar. The experimenters used a crop that is attractive to bees – oilseed rape, used to make canola oil – as their test plant.

A sea of yellow canola flowers. MICHAEL PALMER

Honey bees weren't affected by the seed treatments. But wild bees were affected, and in a

honey bees certainly have bad years, they have a whole crew of beekeepers and researchers providing support to them. But native bees are on their own; they fly solo.

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This research used one of the lowest active doses of pesticide that a bee might encounter in

The evidence is clear that many native wild pollinators are declining. That wouldn't be a big deal, if commercial honeybees could pick up the slack. They can't.

Managed honey bee colonies supplement the work of natural wild pollinators, not the other way around. In a study of 41 different crop systems worldwide, honeybees only increased yield in 14 percent of the crops. Who did all the pollination? Native bees and other insects.

A whole host of little blueberry bees, squash bees, and orchard bees co-evolved with many of our fruits and vegetables. It makes sense they would be good at pollination.

Squash bees (Peponapis pruinosa) hiding in a squash flower. HADEL GO

In watermelons, native bees do 90 percent of the pollination.
Native bees improve fruit production in apples. Native bee pollination creates twice as much fruit as honey bees in blueberries. In tomatoes, native bee species increase fruit production significantly.

Honey bees aren't physically big enough to successfully pollinate tomatoes; it takes a burly bumble bee to do the job. In a lot of crops, specialist pollinators do a better job than generalist honey bees.

Ecological Homogenization

trampled or paved yet. That's not enough. We can't "save the bees" by conserving little bits of habitat here and there in national parks. We have to include space for them in our agricultural lands, city parks, and yards.

I asked Aimee Code, Pesticide Program Coordinator of the Xerces Society, a group focusing on conservation of native bees and insects, for her recommendations. "Our native bees, so vitally important in our ecosystems, are more sensitive to pesticides. Any person who has even a postage stamp yard can stop using pesticides, put in more native plants, ...and leave some wild areas for bees to to nest in the ground. It is that easy to help make a difference."

Tickle bee coming in for a landing in a lawn. MACE VAUGHN, XERCES SOCIETY

Humans and Bees Can Live Together

For a great example of how native bees and humans can live together in an urban setting, check out this Portland, Oregon school. They have adopted solitary mining bees as their mascots, the Tickle Bees. It didn't take massive landscaping to make this change; it just took a willingness to share and let things be slightly untidy.

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Burkle, et al. 2013. Plant-pollinator interactions over 120 years: loss of species, co-occurrence, and function. Science 339(6127):1611-5. doi: 10.1126/science.1232728.

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Brittain et al. 2013.Synergistic effects of non-Apis bees and honey bees for pollination services. Proceedings of the Royal Society B 280(1754) doi: 10.1098/rspb.2012.2767

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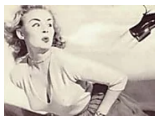

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