

Sage Handler 3MT Transcript | University of Guelph Campus Final 2020

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Title: Un-bee-leaf-able pollinator homes

Transcript: I want you to imagine that you are a bee. BUT you're not just any bee. You're not a honey bee and you're not a bumble bee. You are a cavity-nesting bee. As a cavity-nesting bee, you live a solitary life and make your nest in hollow plant stems using leaves, soil, or tree sap. Each of your eggs is laid in its own apartment and given food from nearby flowers. And this is how you spend your days. You fly from flower to flower, collecting nectar and pollen for your eggs, and of course, pollinating the flowers as you go. But lately, you've noticed that the types of flowers nearby have changed, and it's getting harder to find a place to nest. This is because you live in a city, where flowers are being replaced by roads.

Now, we know that bees are super important. With 1 in 3 mouthfuls of food dependent on the pollinating services of bees, their declining populations mean we might be(e) in trouble. Unfortunately, it's hard to help their populations, because we don't know enough about them. We don't know where exactly they live in Canada, or what foods they depend on in these urban environments.

To answer these questions, I'm getting the help of future scientists across Canada by installing bee hotels on school properties. Bee hotels are human-made homes for cavity-nesting bees in particular, because they mimic hollow plant stems and other natural nesting sites. The hotels are installed from May to September, then brought back here to the University of Guelph for DNA barcoding. DNA barcoding is a super cool way of identifying each bee and pollen grain by looking at its unique genetic fingerprint.

With this information, I can make plant-pollinator networks. Think of it like if I followed you and your friends around a buffet to study which foods you chose. In this case, because cavity-nesting bees are solitary, I will be able to connect each bee to their specific food sources to form these plant-pollinator networks. This will show us where cavity-nesting bees are living in Canada and which flowers they like eating from best in these urban school ecosystems.

This will help with conservation strategies by informing management decisions because we'll have a much better idea of where our bees are and what they're eating. In the future, this will serve as a baseline of these essential plant-pollinator relationships to see if they are moving or changing with climate change. My project is encouraging curiosity in engaged youth scientists across Canada while increasing our knowledge of these vitally important pollinators. So

remember, next time you're flying through the urban jungle, eating from the flower buffet, keep an eye out for my bee hotels!

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