

Green Scene: The buzz of the bee

by Elaine Golds

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On recent walks around my neighborhood, it has been delightful to finally see a few spring blossoms with bright colours to contrast with the well-watered greenery. However on sunny days, when I listen for the drone of bees buzzing around the flowers, I worry that I hear so very few. This time of year bumble bees should be awakening from their winter hibernation and hovering over flowers with ravenous appetites. While there have been some newspaper stories about the plight and plummeting populations of honeybees, the equally disturbing disappearance of our native bees seems not to merit as much attention.

Worldwide, there are estimated to be up to 40,000 species of bees which for the most part, are all important pollinators of flower-producing plants. Pollination is the process of fertilization by which these plants produce their seeds and fruits. While bees are the most important pollinators, other insects such as some species of flies, beetles, ants, wasps, butterflies and moths have also evolved as pollinators of certain types of flowers. In addition to insects, tropical bats, several bird species including all the hummingbirds and even a mouse or two also assist in plant pollination. However, bees are the true work horses when it comes to providing pollination services.

Pollination is an extremely important ecosystem function because much of the food we and most other animals eat comes from flowering plants. Without the critical pollination services of these insects, we would have no fruit and very few vegetables. In fact, we would be left with little more to eat than the wind-pollinated grains and fish from the ocean. Even the meat in our diets ultimately depends on bees because pollination is required to produce the clover and alfalfa fed to farm animals. Because the production of cotton also requires pollination by bees, our closets as well as our stomachs would be quite empty without their efforts. Clearly, we should be paying far more attention to these proverbial busy – but disappearing - bees.

Honeybees are not native to the Americas but were brought here by early European settlers who loved the sweet honey these bees produce in such copious quantities. Before the arrival of honeybees (some of which then escaped domestication and became feral), the American continents were already replete with more than 4000 species of bees, wasps and ants which play vital roles in the pollination of native flowering plants. Much of the wildlife in this hemisphere ultimately depends on these insects to provide their food. These bee species included colonial nesting bees such as bumble bees and solitary nesting bees such as the mason, sweat and underground (mining) bees. It's the bumble bees that I am missing amongst my garden flowers right now.

Because some other insects can mimic bumble bees in appearance, it takes an expert to identify them by the pattern of veins on their wings. With its hairy body, this insect looks like – and could be – a bumblebee.

H. Maguire photo.

Bumble bees, with their hairy bodies and ability to regulate their temperature, have evolved for cold weather in temperate climates around most parts of the world. There are even two species of bumble bees found north of the Arctic Circle. This time of year, it is the larger bumble bee queens that are emerging from winter



hibernation sites in the ground. They are the sole survivors of their species because all the other bumble bees, i.e., the workers, drones and old queens, died last fall. Fueled by nectar from early blooming flowers, these surviving queens must quickly find an appropriate nest site and lay an initial set of eggs to begin their cycle of life anew. They also need to gather pollen, a highly nutritious food consisting of up to 30% protein and 10% fat, as food for their first cluster of 8-10 eggs.

Queen bumble bees seek out nest sites on the ground in grassy meadows, ideally in the abandoned nest of a meadow mouse. Thus, while most suburban yards have little to offer bumble bees in terms of nesting habitat, other places such as the fields of Colony Farm Regional Park provide ideal sites for them. The queen creates a honeypot at the front end of her nest on which she will feed during rainy weather. Beneath her, in a clump of pollen, she will lay her eggs and incubate them with her body heat. Within a month these eggs will hatch into larvae which will eat the pollen, pupate and emerge as adult worker bees. These workers will then assume feeding and foraging duties to allow the queen to focus on laying more eggs. Thus, as bumble bee colonies grow in size over the summer, bumble bees should become a more common sight in our yards as the season progresses.

The reasons that might explain why bees are in dramatic population declines will have to be the topic of another column. In the meantime, watch for occasional glimpses of bumble bees and the soon-to-appear mason bees. Truly, they are some of our most significant harbingers of spring.