



# Final Report

for the Ontario Wildlife Foundation

*Growing citizen scientist capacity for  
native pollinator conservation in Ontario*

Submitted January 31, 2020



## The critical need

There are about 25 species of bumble bees known to range in Ontario, and scientific evidence suggests that up to one third of them may be in decline. Too often a species will disappear before we even realize there is a problem. To better understand the state of Ontario's pollinators, field surveys are necessary to collect data on population distributions throughout the province. However, tracking populations of so many bee species is a time-consuming task. Surveys are often conducted by professional research staff, but this is costly and limited by the number of experts available to contribute to the field work.

Wildlife Preservation Canada's Native Pollinator Outreach Program offers citizen science training available free of charge to any interested Ontarians. We engage concerned citizens by teaching them the same scientific survey techniques used by professionals and giving them access to a portfolio of educational material. The program encourages citizen scientists to locate and record sightings of declining pollinator species, all while getting outdoors and experiencing Ontario's natural areas.

## The project

Wildlife Preservation Canada (WPC) received a grant for the project entitled 'Growing citizen scientist capacity for native pollinator conservation in Ontario'.

The objective of the project was to engage and train citizen science volunteers to survey for native bumble bees, increase data records about at-risk pollinators, and inform future conservation recovery strategies.

The funding was intended to fulfill the following deliverables:

- WPC outreach will increase the number of data submissions to BumbleBeeWatch.org
- WPC outreach will expand the current bumble bee surveyed area in Ontario to include new cities and parks outside of high density population centres, which have been the traditional survey area for the program
- WPC pollinator outreach will increase the diversity of habitat types that are surveyed in Ontario to include grasslands, woodlands, parks, and urban lots.
- WPC will deliver three (3) citizen science workshops
- WPC will deliver two (2) 'train-the-trainer' workshops



*A group of citizen science volunteers surveying for bumble bees.*





## Citizen science training workshops

Wildlife Preservation Canada delivered three public training workshops in 2019. The objective of the training workshop is to provide a baseline of knowledge about the natural history of bumble bees, and the unique physical characteristics that are used in species identification. In some of the extended hands-on workshops we also train participants how to safely catch, photograph from the correct angle, and release the bumble bees in order to eliminate any negative impacts that the surveys may have on bumble bee populations. The workshop locations, dates, and attendance records are below.

- Pinery Provincial Park. June 22, 2019. 18 attendees
- Plover Lovers Beach Talk Series (Sauble Beach). July 3, 2019. Attendees unknown
- Grundy Lake Provincial Park. August 10, 2019. 60 attendees

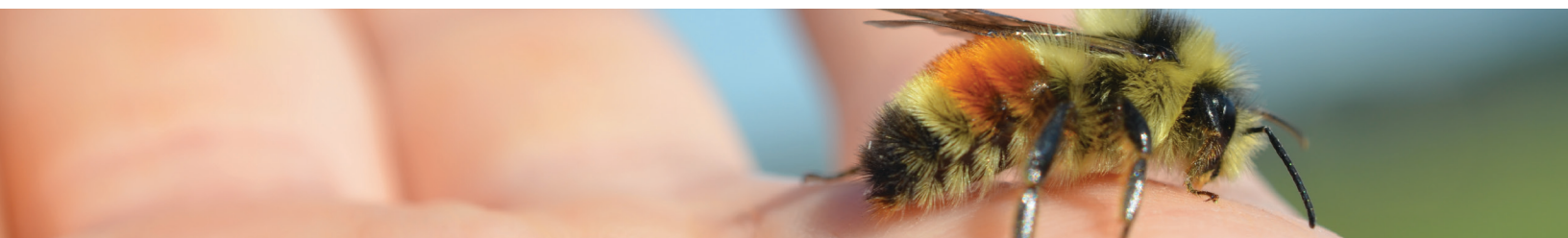


*Wildlife Preservation Canada's Lead Biologist (right) and Credit Valley Conservation staff who participated in the Train-the-Trainer workshop at Terra Cotta Conservation Area, July 23, 2019.*

## Train-the-trainer training workshops

Wildlife Preservation Canada delivered two train-the-trainer workshops in 2019. A four-hour extended workshop with both an in-class education component and an outdoor hands-on survey component was delivered to eight staff from various departments within the Credit Valley Conservation Authority on July 23, 2019. A two-hour workshop that covered only the hands-on survey component was delivered to staff from the Toronto and Region Conservation Authority on June 25, 2019. In total, 12 "Trainers" were trained to deliver subsequent training to their staff, extending the reach of the program.

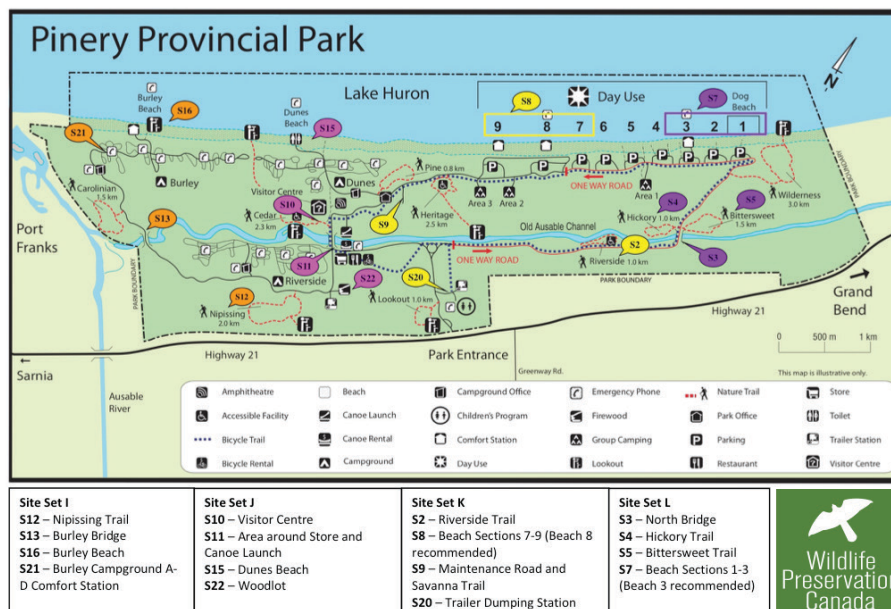
These workshops are designed and delivered to help attendees develop the know-how, the skillset, and the techniques required to manager their own Bumble Bee Watch community science program within their organization. By delivering Train-the-Trainer workshops annually, we continue to work toward increasing the number of conservation-minded organizations and property owners, enabling us to better harness the power of volunteers across the province to contribute to important bumble bee research and conservation initiatives.



## Data submissions to BumbleBeeWatch.org

Wildlife Preservation Canada supports Bumble Bee Watch in many ways, primarily by engaging community scientists and promoting the platform across the country, but also by contributing to the verification of user submissions. Since the launch of Bumble Bee Watch in 2014, over 53,000 observations have been submitted from across North America. Of these submissions, nearly 20,000 are Canadian, with total submission numbers highest in Ontario (10,729). The Pinery Provincial Park program, managed by WPC, has submitted a total of 1,561 records to Bumble Bee Watch. This is 15% of all submissions across Ontario.

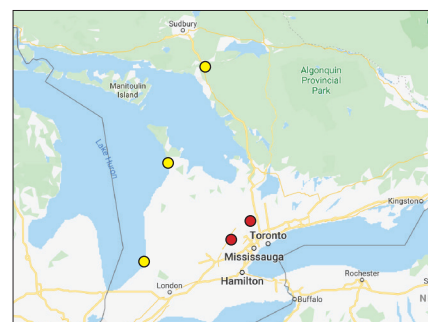
Without the survey effort from citizen scientists trained through our programs, we would have difficulty identifying new regions to monitor bumble bees, especially rare and at-risk species. Bumble Bee Watch will continue to be a valuable data repository, contributing essential information for bumble bee conservation.



*A map of the site sets and individual survey sites in the Bumble Bee Watch community science program at Pinery Provincial Park.*

## Reach of training workshops

One of the objectives of the project was to expand the current bumble bee surveyed area to include new cities and parks outside of high-density population centers. The map shows the geographic range of the training workshops in southern Ontario. Yellow dots are locations of the public citizen science training workshops. Red dots are locations of the train-the-trainer workshops.



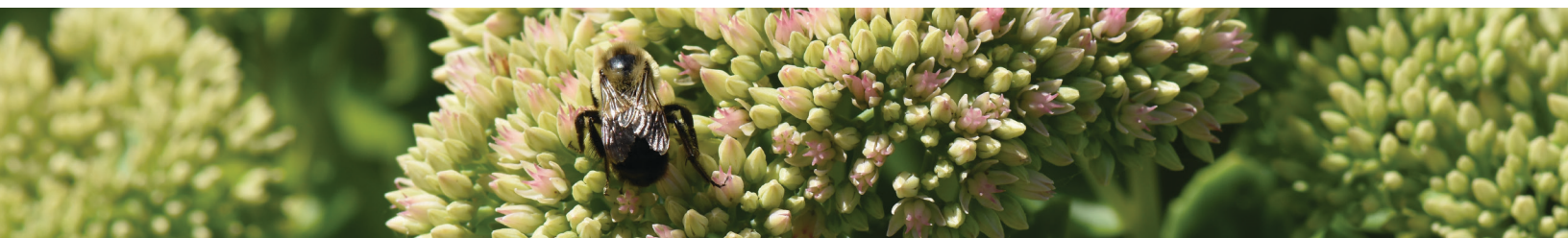


## Educational materials

WPC has developed a series of educational material that will be included in the workshop kits that are distributed to each participant, and available by print to support individual survey programs. Some of this material is also made available to the general public through Wildlife Preservation Canada's outreach website.

- 1. Preserving the Buzz** – This brochure provides general information about declining bumble bees in Canada. It mentions all five species of bumble bees that have been formally assessed as at risk, and summarizes what WPC is doing to help, and how the general public can help.
- 2. Yellow-banded Bumble Bee Brochure** – This brochure provides the natural history and current status of the yellow-banded bumble bee plus our proposed recovery actions. WPC selected this species to highlight with its own brochure because it has been identified as a species that needs public attention in order to prevent further decline.
- 3. Bumble Bees of Ontario ID** – Most bumble bees can be identified using the unique colour patterns found on their abdomens. Each species has a unique pattern. This ID card is meant to be used during field surveys for a quick reference guide, and also highlights the species at risk that can be found in that area, or have historically ranged there before their populations declined.

In addition to these standard materials, all volunteers are provided with a take-home training package that includes survey instructions, site maps and data sheets specific to their survey locations. and other informative and engaging outreach material.



# Project Budget 6

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Wildlife Preservation Canada received a grant for this project. The following is a high-level breakdown of how the grant was used.

**Logistical support for training workshops.** This includes curriculum development, presentation materials (in addition to the educational materials given to participants), venue, and mileage.

This expense was to the following five workshops:

1. Pinery Provincial Park on June 22, 2019
2. Toronto and Region Conservation Authority (TRCA) on June 25, 2019
3. Credit Valley Conservation Authority (CVCA) on July 23, 2019
4. Plover Lovers Beach Talk Series (Sauble Beach). July 3, 2019.
5. Grundy Lake Provincial Park on August 10, 2019

**Educational materials to be given to workshop participants.** The material is also made available to the general public through Wildlife Preservation Canada's outreach website.

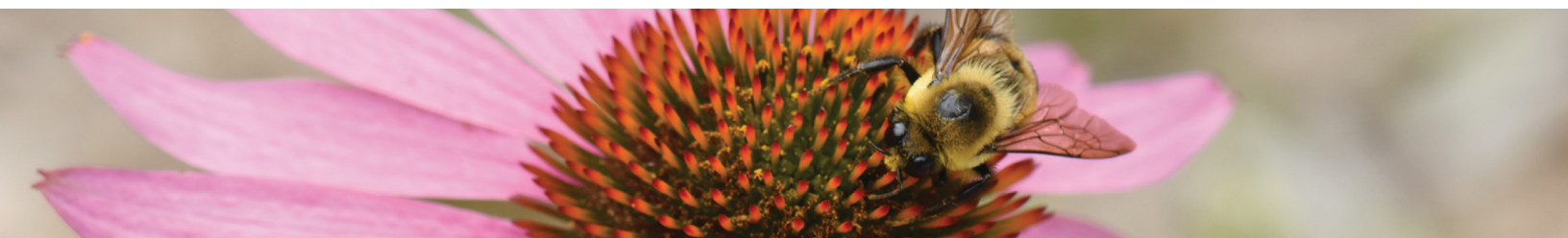
The material includes and is not limited to:

1. Preserving the Buzz Brochure
2. Yellow-banded Bumble Brochure
3. Bumble Bees of Ontario ID Card
4. Take home kits

**BumbleBeeWatch.org app development and support.** The mobile and desktop application requires constant improvements to ensure the quality of the database is maintained, and its capacity as a conservation tool is improved. In addition, large training groups will be given a unique project ID in the database which will allow WPC to measure the success of the programs by tracking the number of submissions by project.



*Training workshops are fun and interactive ways to engage people in community science. They require basic equipment and can often be carried out on publicly accessible land.*





**Thank you for your support.  
If you have any questions, please contact:**

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