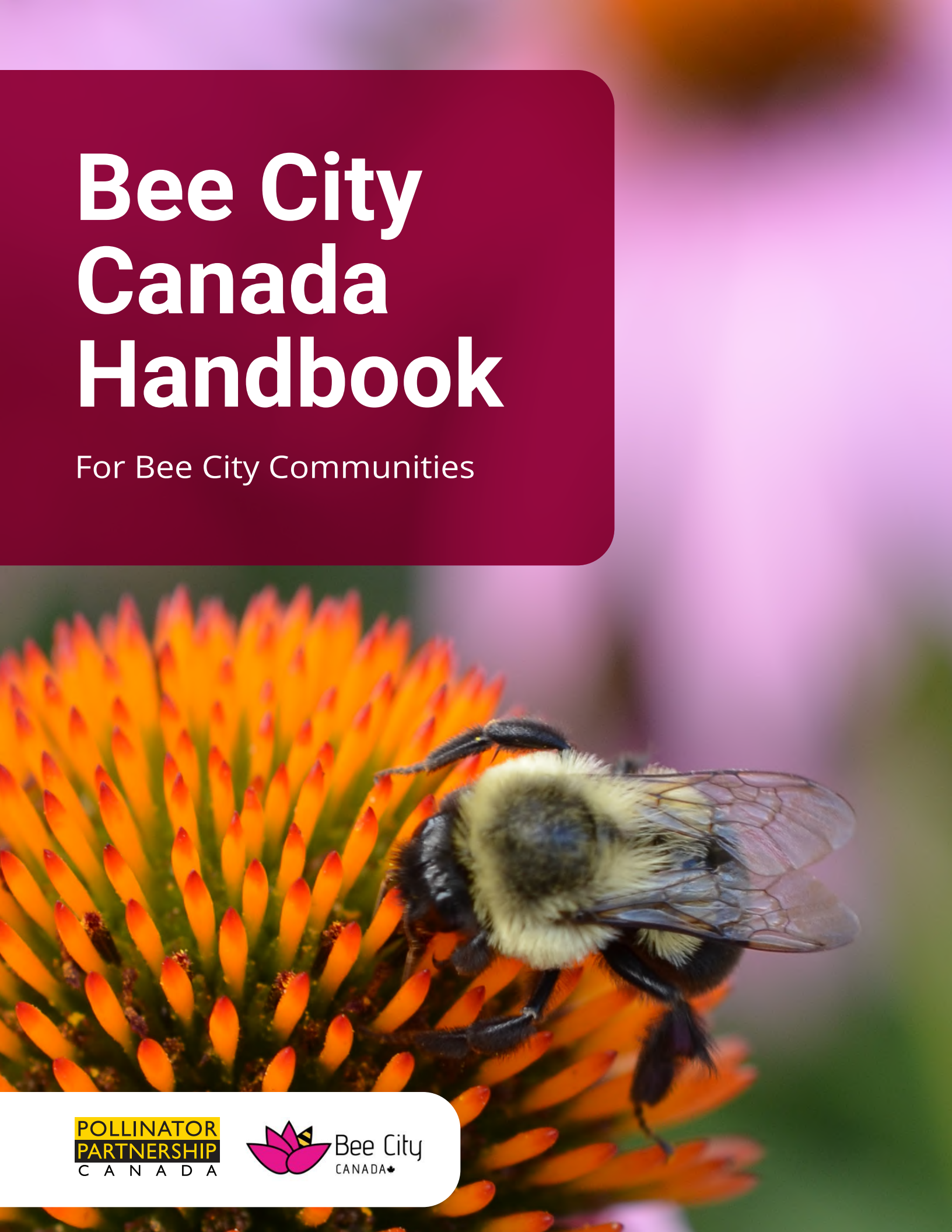
Bee City Canada Handbook

For Bee City Communities



POLLINATOR PARTNERSHIP CANADA

Bee City CANADA

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This work was made possible by the Canadian communities that saw value in Bee City Canada as a mechanism for pollinator protection across the country and joined in our mission. Many ideas in this book came from the important work that these communities were doing to protect and promote pollinators long before Bee City Canada, and part of our goal with this handbook is to promote these initiatives for the purposes of recognition and inspiration. Many thanks to the people and organizations that worked with us to ensure case studies included in this handbook accurately reflect the work happening to protect and promote pollinators across Canada.

We would also like to thank the many sponsors and supporters of Bee City Canada and Pollinator Partnership Canada that made this work possible.

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Bee City Canada: A national movement to protect pollinators

Bee City Canada began in 2016, inspired by the belief that municipalities can become champions for pollinators across Canada and modelled after the successful Bee City USA initiative. The program's promise was immediately recognized when in March of that year, Toronto City Council voted unanimously to become the first Bee City in Canada. Bee City Canada grew rapidly from an inspired belief into a large and passionate community, soon welcoming not only municipalities, but also Indigenous Communities, campuses, schools, and other organizations.

Members of the Bee City Canada program commit to protecting and promoting pollinators through habitat creation and management, community education and engagement, and celebrating pollinators during Pollinator Week (the third week of June).

As of 2023, Bee City Canada has more than 190 members from coast to coast, making clear that our message has resonated with Canadians and that communities across the country are prepared to take action to protect and promote pollinators.

Our mission is to recognize and support municipalities, Indigenous Communities, campuses, schools, and other organizations that are taking action to protect and promote pollinators.

Our vision is for Canada to be a world leader in pollinator conservation – a place where people and pollinators can thrive together.

What is pollination and why does it matter?

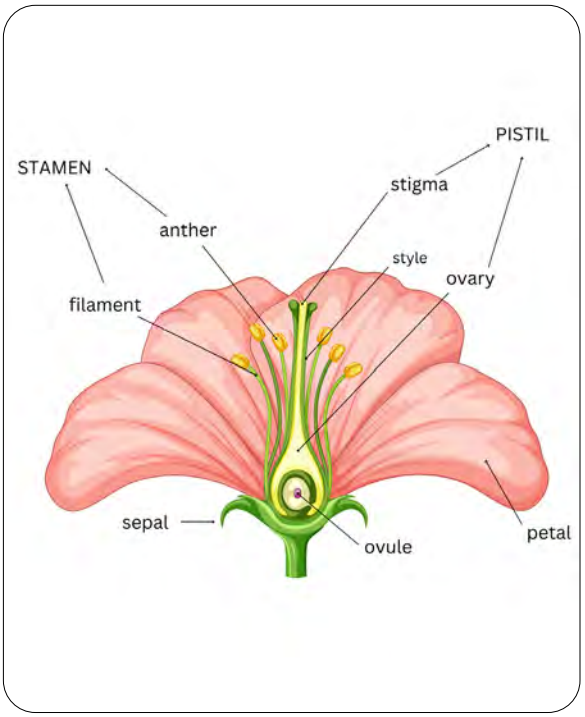
Pollination is the movement of pollen from the male parts of flowers (the anther) to the female parts of flowers (the pistil), allowing for fertilization and seed and fruit production.

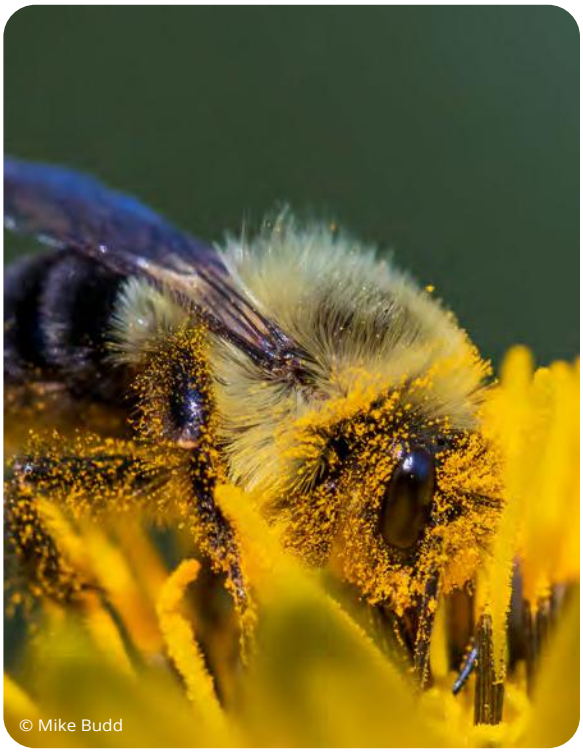
Pollination can occur in a few ways. Some flowering plants can self-pollinate, meaning that pollen from the same flower or pollen from the same plant can result in fertilization and seed production. Some plants don't need any help moving their pollen, but most plants are reliant on wind or animals to move pollen. Many wind-pollinated plants produce massive quantities of pollen grains that get distributed in a non-targeted way to nearby flowers. The vast majority of flowering plants, however, rely on animal pollinators to move pollen between flowers.

Animal pollination is one of the great mutualisms of the natural world. In other words, both the animals that do the pollination and the flowering plants that receive it, benefit. Many animals, including bees, rely on flowering plants for much of the food they eat. Pollen is an important source of protein, while nectar provides carbohydrates. As these animals move from flower to flower, taking the pollen and nectar that they need to survive and provide for their offspring, pollen often sticks to their bodies. When the animals incidentally move this pollen to a new flower of the same type, animal pollination has occurred.

It is difficult to overstate the ecological and economic importance of animal pollinators. Scientists estimate that over 87% of flowering plants are animal-pollinated – meaning that the vast majority of flowering plants on earth rely on animal pollinators to reproduce[1]. Scientists also have determined that approximately 75% of the major crops that we grow for human consumption depend on, or benefit from, animal pollinators, accounting for 35% of food production by volume[2]. Animal-pollinated crops include blueberries, watermelon, apples, almonds, avocados, coffee, cacao, and many others that make our diets diverse, healthy, and enjoyable.

The next time you see a pollinator moving from flower to flower, take a moment to reflect on the importance of that small action. While it may seem insignificant, pollinators are supporting life as we know it, one flower visit at a time.




© Mike Budd

Who are the pollinators?

When asked to think about pollinators, most people think first of the European honey bee (*Apis mellifera*). This is no coincidence. Humans have managed honey bees for honey, beeswax, and other hive products since the Neolithic period, at least 8,500 years ago, and the European honey bee is the single greatest contributor to crop pollination today[3,4]. While the European honey bee is undoubtedly important, people are often surprised to learn that it is only one member of the diverse community of pollinating animals on earth. It is only one of over 20,000 bee species found across the world, over 800 of which occur in Canada[5]. People are also often surprised to learn that the vast majority of the world's bees live a solitary life, nesting underground or in small cavities rather than in a bustling social hive like honey bees. Perhaps what most surprises people is that bees are only a single group among many important pollinator groups, including butterflies, moths, flies, beetles, wasps, birds, bats, and others[6,7]. Overall, there are an estimated 350,000 species of pollinating animals in the world, many of which co-evolved over time with plant species that now depend on them for reproduction[8]. So when we talk about conserving pollinators, it is important that we do so with this incredible species diversity in mind.

Bees


© Anthony Colangelo


© Amber Barnes

Bees are the most important pollinating group for most crops and for wild flowering plants in most terrestrial ecosystems[7]. One reason that bees are such effective pollinators is that the pollen and nectar produced by flowers is their primary source of food for all of their life stages, and therefore they need to bring pollen and nectar back to their nest for their offspring. They are the only animals that feed their young this way! Because of this, they have evolved specialized hairs and body parts that facilitate pollen collection and carrying. These specialized hairs and body parts allow bees to effectively carry pollen home to the nest, but they also make bees excellent pollinators since, in the process of collecting pollen and drinking nectar, and moving in a systematic way among flowers, they effectively move pollen between flowers.

In Canada, only a minority of bees are social and form colonies like honey bees. Bumblebees, of which over 40 species occur in Canada, form small colonies of about 50-500 individuals and usually nest underground in old rodent burrows, at ground level often in dense thatch or under vegetation, and in tree hollows. The bumblebee annual lifecycle begins when queens emerge from diapause (similar to hibernation) in spring, start new colonies, and produce workers. Later in summer, the queens produce new males and new queens, and the entire colony dies off except for the new queens which enter diapause in fall to emerge and start a new colony the next spring[9]. Sweat bees (such as the bicoloured agapostemon, Toronto's official bee) are medium to small-sized bees that tend to nest underground; many sweat bee species are solitary, while others form nests close to each other, and some even have small colonies. Other common bees include carpenter bees, mining bees, mason bees, digger bees, cellophane bees, and leaf-cutter bees, all of which are important pollinators of plants in our natural spaces, and many of which are important pollinators of crops.

Butterflies


© Jim Hudgins

Butterflies are appreciated by many people and cultures, likely because of their delicate beauty and stunning patterns. Gardeners are often interested in ways to help support them and attract them to their gardens. As pollinators, butterflies move between flowers, probing for nectar to fuel their flight. In this process, they occasionally transfer pollen between flowers. Butterflies prefer open and sunny areas, like meadows and woodland edges, that provide bright flowers with large landing platforms. Butterflies also need mineral sources and 'host' plants to lay eggs on. The host plants provide food for the caterpillars that hatch from the eggs (think of the Very Hungry Caterpillar book!). Some butterflies only lay eggs on one or a few types of plants, while other butterflies can use many types of plants. An example of a butterfly that only uses one type of plant is the monarch butterfly (*Dannus plexippus*), which lays eggs exclusively on milkweed plants. Butterflies also need open areas such as bare earth or large stones where they can bask in the sun to warm up, and moist soil from which they can consume important minerals. There are over 300 species of butterflies in Canada, including groups such as the swallowtails, the skippers, the gossamer wings, and the brushfoots.

Moths


© Sonia Fiset

When people think of moths, an image of a night-flying insect circling light often comes to mind. Most moths are indeed nocturnal, and the question of why they are attracted to light remains a fascinating mystery; there may be a mix of reasons, such as attraction to light reflected by the nighttime flowers they rely on as food sources, and use of moonlight for navigation[10]. What less often comes to mind is the incredible diversity of moths; there are about 5,000 species in Canada alone, including many day-flying moths such as the hummingbird clearwing. In Canada, moths can be distinguished from butterflies by their antennae. The antennae of moths look feather-like and have no swelling at the tip. Also, their bodies tend to be more stout and hairy than butterflies. Moths tend to be attracted to flowers that are white or pale-coloured, strong-smelling, and open in the late afternoon or night.

Flies


© Anthony Colangelo

Flies are perhaps the most underestimated pollinators. While most people wouldn't think about attracting flies to their garden, flies are among the most diverse pollinators and can actually be quite beautiful[8,11]. There are several important pollinating groups, including flower flies, bee flies, and midges that visit a wide variety of plant species. Like bees, many flies are hairy and can easily transport pollen from flower to flower as they feed on pollen and nectar. Many flies, such as hoverflies, even have a bee-like appearance, with yellow and black striped abdomens which mimic the pattern of stinging bees to ward off predators. Thank flies each time you enjoy chocolate, because flies known as chocolate midges are the most important pollinators of cacao trees[12]!

Beetles


© Richard Hurd (CC BY 2.0)

Though beetles aren't often given much credit as pollinators, they were one of the first pollinator groups to arise. Over 200 million years ago, in the Mesozoic Era, there was a great abundance of beetles that visited flowers to eat pollen and flower parts. This abundance of beetles visiting flowers to feed resulted in pollen movement between flowers, shaping the early evolution of flowering plants[13]. Of the more than 8,150 known beetle species in Canada, many are important pollinators in our natural systems, attracted primarily to large, strong-scented flowers with exposed anthers and stigma, such as magnolias and pond lilies.

Wasps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Wasps are often confused with bees, which is perhaps unsurprising as the two groups are closely related. In fact, bees evolved from wasps in the mid-Cretaceous, changing from a predatory wasp to a bee that lived on pollen and nectar exclusively, and collected it for its young[14]. However, there are a number of differences between wasps and bees; for example, some wasps are predatory, while most bees are vegetarian, and wasps typically have hairless bodies while bees typically have more robust and hairy bodies. Bees also have expanded back legs and 'plumose', feather-like hairs, while wasps do not. While bees are considered the most important pollinators due to their pollen and nectar collecting lifestyle, wasps are also important pollinators. Small wasps of the family Agaonidae are the primary pollinators of fig trees[15]. Beyond pollination, wasps are important for pest control in crops and natural systems[16].

Birds


© Bill Buchanan

While a number of different types of birds are considered pollinators, hummingbirds are the most important bird pollinators across the Americas at over 350 species, five of which occur regularly in Canada. They use their long beaks and tongues to draw nectar from long, tubular flowers, fueling their flight. In the process of drinking nectar, they often carry pollen from flower to flower on their beaks and feathers. With wings that beat 70 times per second to keep them aloft, hummingbirds must eat more than their own weight in nectar each day, making them frequent visitors of flowers. The majority of hummingbird species occur outside of Canada, closer to the tropics. In Hawaii, honeycreepers are important nectar-eating bird pollinators. In the tropics of the Eastern Hemisphere, so are honeyeaters, brush-tongued parrots, and sunbirds.

Bats


© Steve Buchmann

While there are no pollinating bats in Canada, bats are important pollinators in deserts and the tropics. The head shape and long tongues of pollinating bat species allow them to delve deep into flowers to extract both pollen and nectar. Pollen covers their hairy bodies and transfers as they move from flower to flower. Bats are the major pollinators of over 500 plant types, including many agave and cactus species[17]. Because they are nocturnal pollinators, they specialize on flowers that bloom at night and are fragrant and pale in colour.

And that's not all! A wide range of other animals serve as pollinators across the world, including ants, lizards, geckos, skinks, honey possums, bush babies, sugar gliders, and many more.

Declines in native pollinator populations


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Many people are hearing about, and concerned with, European honey bee declines. This is in large part due to widespread press about mysterious increases in honey bee colony death that was first recognized in 2006[18]. Since then, honey bees have faced a host of pressures and health problems, making them hard to keep healthy and resulting in high colony loss. However, there is no overall loss or decline in the number of honey bee colonies as of yet (hard working beekeepers split colonies and import small colonies to make up for loss)[19,20]. Honey bees are an agricultural organism in North America, managed by humans for crop pollination, honey, and other hive products. While they are essential to modern agriculture, they are not of conservation concern because they are neither wild, endangered, or native to North America.

Critically, however, many wild, native pollinator populations that we and our ecosystems depend on are in decline. Several bumble bee species, for example, have declined across North America[21]. Monarch butterfly populations – which scientists have carefully tracked for many years – are believed to have declined over 80% since the 1990s[22,23]. Declines have also been documented in several species of other native bees, butterflies, and other important pollinator groups[24,25].

A number of factors likely are causing these declines and these factors can work independently or in concert, negatively impacting pollinator populations[24].

Habitat loss is considered to be one of the leading causes of pollinator declines[26]. Habitat is food and shelter for pollinators, and therefore crucial to their lives. Humans have eliminated habitat at a large scale through agricultural intensification, urban development, resource extraction, and other activities. Other factors contributing to pollinator declines include climate change[27,28,29], pesticide exposure[30,31], invasive species[32], and parasites and pathogens[33,34].

Because habitat loss is one of the leading factors in pollinator declines, we can all do something to make a meaningful difference. Read on to see how your community can make the world a better place for pollinators and people.

The role of Bee City Communities in protecting and promoting pollinators

Bee City Communities include municipalities, regions, Indigenous Communities and other communities that commit to protecting and promoting pollinators through Bee City Canada.

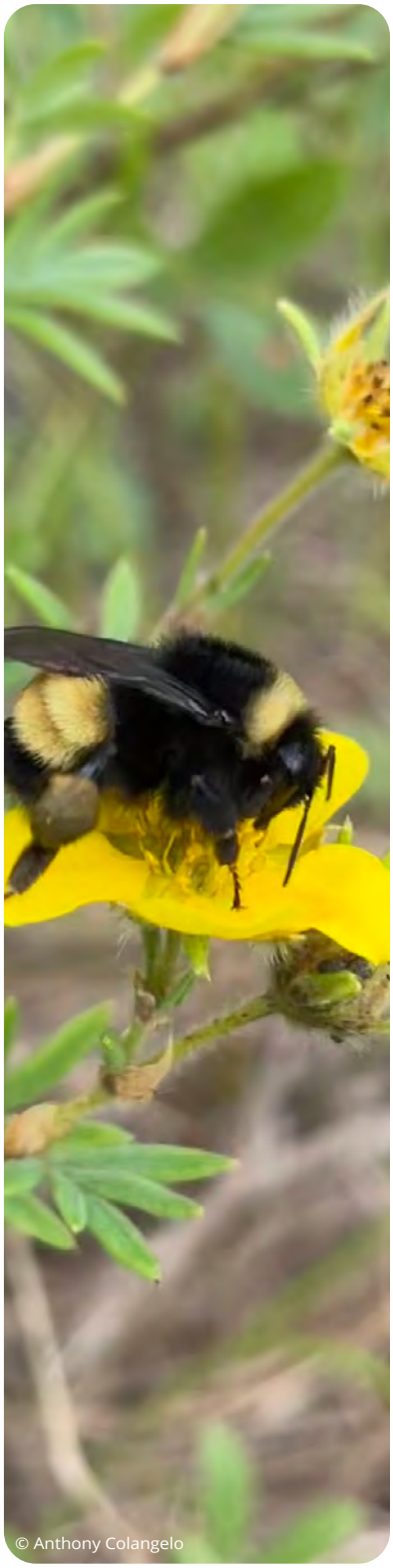
When most people think about nature, populated areas rarely come to mind, especially not big cities; rather, people often talk about leaving populated areas to immerse themselves in nature. What we're beginning to understand, however, is that populated areas can host and support an amazing diversity and abundance of pollinators. In fact, urban areas tend to support more diverse pollinator populations than agricultural landscapes do[35,36]. In some cases, populated areas with parks and gardens that contain lots of flowering plants support more diverse pollinator populations than natural areas! While many of these areas have concrete, turfgrass, and skyscrapers, they also often have parks, meadows, and gardens which, if done right, can have a wide range of pollinator-friendly plants. By minimizing purely ornamental plantings and turfgrass, using urban space creatively, and allowing, encouraging, and even incentivising organizations and residents to do the same, these areas can be critical for pollinator conservation[37].

Beyond creating habitat, communities have enormous potential to educate about pollinators and encourage conservation efforts – and many are doing just that. Across the country, communities are hosting pollinator talks, workshops, museum exhibits, habitat tours, and habitat creation events. They are eliminating barriers to habitat creation, such as restrictive lawn bylaws, and supporting people through pollinator habitat grants and rebates, and free habitat creation consultations. They are also inspiring people by creating vibrant murals that showcase the beauty of pollinators in areas with high foot traffic.

Many communities have reach beyond urban areas and can act to help make agricultural landscapes more pollinator-friendly. By providing Canadian farmers with the support that they need to integrate pollinator-friendly plants into hedgerows and cover crop plantings, and minimize pesticide use through Integrated Pest Management, communities can improve conditions for pollinators across Canada.

Perhaps most important of all, creating pollinator-friendly habitats isn't just a win for pollinators; it also contributes to broader biodiversity and ecosystem service goals by supporting the many species that depend on plants and pollinators. Creating pollinator habitat helps to filter water, stabilize soil, provide beauty for communities, increase pest control organisms, and contribute to climate mitigation goals by increasing the abundance of plants that sequester carbon[38,39]. To support pollinators is to support ecosystems, our climate, and ultimately ourselves.

This handbook provides a roadmap for communities that want to join the Bee City Canada movement to protect and promote pollinators.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Becoming a Bee City Community

Is your community ready to join the Bee City Canada movement to protect and promote pollinators? Start your journey with Bee City Canada by taking these simple steps:

1. Commit to protecting and promoting pollinators – As a member of Bee City Canada, your community must commit to taking yearly action on habitat creation and management, education and engagement, and celebrating pollinators during Pollinator Week in June.

2. Gather a pollinator team – Your Bee City Community pollinator team will be responsible for organizing pollinator initiatives and overseeing your community's involvement in Bee City Canada. Select one primary Bee City liaison and team members that will support efforts. We encourage broad representation on pollinator teams, including staff, members of local groups, and any other community members with expertise or the drive to make a difference.

3. Complete an application – Complete an application here to tell us what you are currently doing to protect and promote pollinators, and what your future plans are. We recommend that this is completed by the appointed primary Bee City liaison for your community.

4. Pass and sign the resolution – Download the Bee City Canada Resolution here, have it passed by council, and have it signed by the Mayor, Chief, or another appropriate official.

5. Submit the application and resolution – Email the completed application and resolution to us at applications@beecitycanada.org, along with a 100 word write-up about what it means to your community to become a Bee City Community. We will notify you once your application has been approved, or if we require additional information.

6. Submit an annual update and fee – Each year, we ask that you submit a renewal document to keep us updated on your progress, and an annual fee to support continued programming. The fee is determined using a sliding scale based on your community's population, as shown in the table to the right. A fee will apply at the beginning of your first year but a renewal document will not be due until the beginning of your second year.

Population size	Annual fee
Less than 10,000	$150
10,000-25,000	$200
25,001 – 50,000	$300
50,001 - 100,000	$400
100,001 – 250,000	$500
250,001 – 500,000	$750
500,001 – 1,000,000	$1,000
More than 1,000,000	$1,500

Action Framework for Bee City Communities

The action framework that we present here provides a roadmap to pollinator protection and promotion, both to Bee City Communities that are just beginning their pollinator conservation journey, and to those that are building on established practices. We have identified three action areas in our framework that, when acted on together, can transform Bee City Communities into thriving regions that promote both an ecology and a culture that is supportive of pollinators. The action areas in our framework are:

Habitat Creation and Management

Education and Engagement

Celebration During Pollinator Week

Within each action area, we provide specific actions that we encourage Bee City Communities to pursue. For each unique action, we include brief case studies to showcase where these actions are already happening in Canada, and to provide inspiration for communities planning to act.

We encourage Bee City Communities to use this framework to put together a pollinator action plan and to evaluate themselves, celebrate successes, and set even more ambitious goals year after year. We also encourage Bee City Communities to use the framework to develop a long-term pollinator protection strategy that can stand alongside biodiversity and climate change strategies, guiding action for years to come. Certain actions may be more or less appropriate depending on the size and structure of each unique Bee City Community, and we encourage communities to reach out to us at Bee City Canada to discuss initiatives that may work best for their particular situation. However you decide to use this framework, we hope that it will provide you with the tools and inspiration to help transform Canada into a country where people and pollinators can thrive together.

1 Habitat Creation and Management

Like us, pollinators need food and shelter to survive and thrive. Creating and maintaining habitat is the best thing that most of us can do for pollinators. Flowering plants provide nutrition through nectar and pollen, and bare soil patches, stems, dead stalks, plant debris left on the ground, and wildlife trees provide valuable nesting and overwintering space for many native pollinators. As a Bee City Community, you can influence habitat creation in your region in many ways. You can create habitat directly by planning and planting habitat, and creating habitat networks; you can establish best practices to manage habitat for pollinators; and you can empower and incentivize residents to create habitat. In this section, we recommend actions that focus on creating and managing habitat for pollinators.

1.1 HABITAT PLANNING AND CREATION

- 1.1.1 Create native plant pollinator gardens
- 1.1.2 Create edible gardens, orchards, and food forests
- 1.1.3 Create habitat networks
- 1.1.4 Naturalize large habitat areas
- 1.1.5 Dedicate resources to native plant propagation
- 1.1.6 Develop habitat guides and tools to streamline projects

1.2 HABITAT MANAGEMENT PRACTICES

- 1.2.1 Use Integrated Vegetation Management (IVM)
- 1.2.2 Restrict chemical applications that can negatively impact pollinators
- 1.2.3 Set habitat standards and recommendations for urban development
- 1.2.4 Promote pollinator-friendly practices in community gardens
- 1.2.5 Restrict urban honey beekeeping
- 1.2.6 Minimize impacts of artificial nighttime light
- 1.2.7 Delay yard waste collection
- 1.2.8 Complete a natural asset inventory
- 1.2.9 Create a pollinator habitat map

1.3 EMPOWERING AND INCENTIVIZING RESIDENTS TO CREATE HABITAT

- 1.3.1 Modify lawn bylaws to empower residents to create habitat
- 1.3.2 Enable and encourage residents to plant on boulevards
- 1.3.3 Provide pollinator habitat grants and rebates
- 1.3.4 Offer native plant giveaways and subsidized sales
- 1.3.5 Provide pollinator-friendly garden consultations
- 1.3.6 Promote pollinator-friendly garden certification programs
- 1.3.7 Initiate seed libraries and encourage seed exchange
- 1.3.8 Support farmers to protect pollinators on agricultural lands

Selecting plants that support pollinators

Before we dive into habitat-focused actions, it's important that we take a moment to explain how to select flowering plants that actually benefit pollinators. Not all plants are equal in their benefit to pollinators, and some plants are invasive or noxious. Plant selection does not have to be complicated, but it helps to know commonly used terms, the different types of plants available to you, which plants to prioritize, and which plants to avoid. Use the following visualisation to prioritize which plants are included in pollinator habitat creation efforts.

✓ Native plants

Plants that are part of the natural environment of a region. Native plants, and their pollinators, have co-evolved over thousands of years in a particular location. Selecting plants native to your region is the simplest way to be sure that you are providing the most benefit to pollinators and the environment. If you don't know which plants are native to your region, check out Pollinator Partnership Canada's Ecoregional Planting Guides and Find Your Roots plant selection tool for some options, and our Native Plant Nursery Directory to find out where they can be purchased.

⚠ Non-native plants

Plants that are not historically part of a region. They arrived in the region either intentionally or accidentally by humans or some other means. Other terms used for non-native plants include exotic, introduced, alien, and non-indigenous. Some non-natives are beautiful ornamentals and some provide resources for pollinators. There are a number of different types of non-native plants and some should never be intentionally planted.

⚠ Non-invasive plants

Plants that originated in a different location and are not historically part of an ecosystem, but do not reproduce on their own and do not spread or outcompete native plants. These plants are fine to plant in your garden.

✕ Invasive plants

Plants that are not native to the region and reproduce freely on their own. They invade natural or disturbed areas, outcompete native plants, and disrupt the ecosystem. Many seed mixes and plants sold at garden centres include species that are invasive in regions where they are marketed. Check species lists with local authorities and invasive species lists, and do not use them if they are invasive.

✕ Noxious plants

Plants that are particularly troublesome for agriculture, the environment, or public health. Noxious plants should never be planted and some are illegal to plant in certain areas. Check noxious plant lists to find out which species are prohibited in your area.

1.1

Habitat planning and creation

1.1.1

Create native plant pollinator gardens

Creating native pollinator gardens is one of the simplest ways to create habitat for pollinators. Integrate a diverse range of native plants that bloom from spring to fall, leave patches of soil, stems, and dead stalks as nesting sites, and avoid harmful insecticides. Choose gardens in areas with high foot traffic and turn them into demonstration pollinator gardens by including signage to educate visitors about pollinators and native plants, and about how they too can create pollinator gardens. Maintain these gardens, and continue to add native plants year after year where possible. Each garden that you create makes a meaningful difference for pollinators in your community.

Niagara Falls, ON

The City of Niagara Falls, along with the Park in the City Committee, the Niagara Peninsula Conservation Authority, and dozens of volunteers, established a 200 m^2 pollinator garden with over 1,500 native plants at Fairview Cemetery in the fall of 2020. While cemeteries may not be the first place that people think of for pollinator gardens, there is often an abundance of green space, and establishing pollinator gardens can not only support pollinators, but can add beauty and tranquility to the space.

© Sheri Armstrong, Dynamic Image

Blind River, ON

The Town of Blind River worked with the Blind River Rotary Club to enhance a pollinator garden in front of a downtown LCBO location in 2018. The garden includes a variety of herbaceous plants and shrubs that provide food for pollinators, and it has brightened up a main focus area in Blind River's downtown core.

1.1.1 Create native plant pollinator gardens

Mono, ON

In 2015, the Town of Mono approved the Mono Pollinator Garden, designated one and a half acres of land, and donated start-up funds for the project. Since then, the garden has been designed, created, and maintained by a team of volunteers, and funds for yearly maintenance and additions are provided by the Town of Mono and resident donations. The garden supports pollinators from spring to fall with a wide variety of pollinator-friendly perennials, shrubs, and trees. Beyond supporting pollinators directly through pollinator-friendly plants, the Mono Pollinator Garden supports community education with educational signage and programs, volunteer opportunities, and team building planting sessions.

King Township, ON

King Township intends to create a pollinator demonstration garden at the front entrance to the King Municipal Centre. The objective is to engage King Municipal Centre staff to come together and plant pollinator-friendly wildflowers, including bee balm, purple coneflower, black-eyed Susans, dense blazing star, common milkweed, and many other native species. The demonstration garden will include a sign to showcase that King Township is a Bee City.

1.1.1 Create native plant pollinator gardens

Pollinator Garden Guidelines

Prioritize plants that are native to your region. Native plants have evolved with native pollinators to provide valuable pollen and nectar resources, and to thrive in your climate without the need for excessive watering and chemical inputs. Native plants will support the wonderful diversity of native pollinators that are indigenous to your area.

Incorporate a range of plants that provide food for pollinators from spring to fall. Early spring and late fall can be difficult times for pollinators to find blooming plants, despite being critical periods in many pollinators' lifecycles. For example, most bumble bee species emerge from hibernation in early spring and produce new queens in late fall, and therefore these are critical times in their lifecycle where they need floral resources in order to initiate colonies (spring) and produce reproductive bees (late summer and fall) that will initiate colonies the next year.

Include pollinator host plants. Many pollinators have evolved specialized relationships with particular plant species, and depend on them to lay their eggs. A well known example of this is the reliance of monarch butterfly larvae on milkweed. But many other native flowers, trees, and grasses provide larval food for hundreds of other types of butterflies, like the tiger swallowtails.

Leave bare soil patches, stems, and dead stalks as nesting space. While managed honeybees live in human-made hives, the vast majority of bee species (>90%) nest underground, in plant stems, in old beetle burrows in wood, and in other natural cavities. Be inspired by nature to include some of these elements in your garden.

Avoid insecticides. Some insecticides can harm pollinators when they come into contact with them. Always read pesticide labels, follow pesticide restrictions (it's the law!), and look for warnings that they may be harmful to bees.

1.1.2

Create edible gardens, orchards, and food forests

Communities can feed pollinators and people by creating edible gardens, orchards, and food forests in public areas, such as outside of community centres. Think fruit and nut trees alongside lower-growing fruits and vegetables. These are a win-win for people and pollinators; they provide pollinators with loads of pollen and nectar, and us with loads of fresh produce. Work with a local food bank to deliver produce to underserved communities or make these spaces free for residents to harvest. Edible gardens, orchards, and food forests can also be key places to educate residents about unique relationships between food bearing plants and pollinators through educational signage and outreach events.

Grande Prairie, AB

In 2014, the City of Grande Prairie adopted an Edible Landscaping policy, through which they committed to planting fruit-bearing trees each year. Since then, the City of Grande Prairie Parks Operations has planted hundreds of fruit-bearing trees, including apple, pear, apricot, plum, cherry, and more. These trees are a great source of pollen and nectar for the pollinators of Grande Prairie, and they provide the community with a significant source of fresh, local produce. The city actively promotes local orchards to the community on social media as a source of free produce to combat food insecurity.

Kitchener, ON

The City of Kitchener has been creating food forests and food hedges since 2015 with community volunteers and at times in collaboration with Grand River Food Forestry. These sites have been established to support pollinators and to encourage food foraging for Kitchener residents. There are now over 15 sites across Kitchener, which altogether provide approximately 560 m^2 of pollinator habitat and plenty of fresh produce for residents.

1.1.2 Create edible gardens, orchards, and food forests

Chestermere, AB

The Chestermere Rotary Club approached the city in 2019 with a proposal for the Community Abundance Project, a project that would improve food security for residents and provide habitat for pollinators. The city was supportive of this project, and with help from the Parks Department and many volunteers, the club launched its first project initiative in 2021 – the Rotary Edible Garden Walk. Many fruit trees, shrubs, and perennials have already been planted through this initiative, and signage is planned to include an entrance sign as well as plant identification along the winding pathway.

New Glasgow, NS

In 2017, the New Glasgow Farmers Market (NGFM) unveiled the Giving Garden, a wellness space and community garden located behind the NGFM. The Giving Garden was created by NGFM vendors, staff, and volunteers, with land contributed by the Town of New Glasgow, with the mission to contribute to the holistic wellness of the community. The garden's raised beds are used to grow produce to feed local families, and flowering plants to feed local pollinators. The concrete patio next to the Giving Garden serves as a quiet space for reflection, and occasionally as a classroom and space for yoga.

Don't forget trees and shrubs

When people think of pollinator habitat, an image of a garden or meadow filled with herbaceous wildflowers often comes to mind. While these are great examples of pollinator habitat, trees and shrubs can be equally or even more generous in nectar and pollen production relative to herbaceous plants. When designing habitat, if your habitat allows for woody species, add some native flowering trees or shrubs that support pollinators. Check out Pollinator Partnership Canada's Ecoregional Planting Guides and Find Your Roots plant selection tool to learn which trees and shrubs to plant where you live.

1.1.3

Create habitat networks

Creating networks of pollinator habitat patches throughout the region not only provides valuable food sources and nesting sites for pollinators, but can be greater than the sum of its parts by contributing to habitat connectivity. This connectivity facilitates gene flow, seed dispersal, and many other ecological functions[40]. Think broadly as you create and expand your pollinator habitat network to include public institutions, community groups, businesses, nonprofit groups, and residents. With many groups working together, land patches will add up to corridors. Consider centralizing mapping of these habitats so that community members and organizations can see where habitat has been created and where habitat is needed. Schools, libraries, stores, boulevards, urban green spaces, urban parks, cemeteries, and golf courses are just a handful of potential locations for pollinator habitat.

Richmond, BC

The City of Richmond, in collaboration with Border Free Bees, initiated a program in 2020 called the Richmond Nectar Trail. The program has since run annually, and the goal is to increase pollinator habitat connectivity throughout Richmond by installing small 'stepping stone' garden plots that provide opportunities for pollinators to rest and forage while en route between isolated habitat hubs. Contributors to this program include businesses, institutions, and residents that agree to plant and maintain at least one m^2 of drought-tolerant, pollinator-friendly species that bloom from spring to fall without the use of pesticides.

Toronto, ON

Project Swallowtail is a collaborative effort led by Pollinator Partnership Canada to connect communities street by street, and to empower residents to restore native plant habitat in Toronto. Over 1,000 community members have joined Project Swallowtail since 2020, either as individuals or community groups creating habitat. Block Ambassadors within the project act as neighbourhood habitat creation and support guides, and Seed Sitters participate in growing native plants at home to share with the community. In the few short years that Project Swallowtail has been active, it has supplied over 18,000 native plants to community members at a subsidized rate or for free, and built partnerships to support this effort with the City of Toronto, EcoSpark, Local Enhancement and Appreciation of Forests (LEAF), and many others. Project Swallowtail is supported financially by the Patrick and Barbara Keenan Foundation.

1.1.3 Create habitat networks

Brandon, MB

The City of Brandon is committed to creating and maintaining pollinator habitat patches throughout the city. In 2022, a student at Assiniboine Community College used Geographic Information System mapping (GIS) to determine where pollinator habitat gaps exist throughout Brandon. This analysis will be used by Bee City Brandon to plan new pollinator habitat sites in the coming years. The next collaborative pollinator habitat project between the Bee City Brandon team and The City of Brandon will be an educational pollinator garden in Eleanor Kidd Park. The team is working with professor Brenda Brown's group in the Landscape Architecture Department at The University of Manitoba to develop a garden plan, which will include native pollinator plant species and educational signage.

Calgary, AB

After learning that planters would be removed from his Calgary neighbourhood, a passionate local resident offered to take over planting and maintenance. He was even able to get the local church to allow him access to their water and raise money for plants within the community. Calgary Parks created a low-maintenance design – including drought-tolerant, pollinator-friendly perennials – and the resident has managed the planters ever since. There are plans to split the current plants to fill even more planters and pollinator gardens across the city.

1.1.4

Naturalize large habitat areas

Naturalizing areas of land can be a great way to support pollinators and educate others. Naturalization means bringing native plants back into landscapes and giving them the space and support that they need to re-establish and thrive. In addition to providing plentiful food and habitat for pollinators, naturalized spaces help to restore landscape functions broadly, boost biodiversity, minimize maintenance costs, and provide residents with much-needed access to nature and its restorative benefits. Think parks, roadsides, shores, utility lands, and abandoned lots. There is no shortage of opportunities to restore ecosystems through naturalization. While naturalization is highly valuable to pollinators, it can be labour intensive and costly; therefore, proper planning and maintenance is important. Please refer to the additional resources at the end of this book for more information.

Calgary, AB

In 2017, the City of Calgary established the Canyon Meadows Bee Boulevard, a specialized habitat corridor containing native shrubs, grasses, and flowers that are salt tolerant, drought resistant, and attractive to pollinators. Within the parks-owned land, a main flower bed was constructed in the shape of a half flower along with habitat enhancement features for pollinators, such as a sand pit for ground nesting bees and specialized nesting areas for cavity nesting bees. Interpretive signage and a leaf-cutter bee display were installed to provide educational opportunities. Pollinator researchers from The University of Calgary and Mount Royal University have since been using this site to study bee biodiversity and floral preferences.

1.1.4 Naturalize large habitat areas

Kitchener, ON

Since 2015, the City of Kitchener has been strategically identifying parkland suitable for less intensive maintenance and converting areas to meadows. The city removes and tills existing turf in summer and then applies a native seed mix in late fall. Once established, city staff periodically mow meadow sites to suppress the growth of unwanted weeds and promote the establishment of native species. Educational signage and perimeter fencing is used to protect sites and raise community awareness about the benefits of pollinator habitat. In 2022, the City of Kitchener dedicated substantial capital funding for a three-year period to grow this program, establish best management practices for parkland naturalization, and increase pollinator habitat in Kitchener. Approximately three ha of meadow habitat has already been established through the program.

Toronto, ON

In 2018, the Toronto Region and Conservation Authority (TRCA), in partnership with City of Toronto and The Weston Family Foundation, initiated The Meadoway project, transforming 16 km (200 ha) of the Gatineau Hydro Corridor in Scarborough into one of the largest urban linear greenspaces in Canada. One of the primary goals of this project is to create and maintain diverse, native meadow habitat for wildlife, including pollinators. Meadow restoration across the corridor is expected to be completed by the end of 2024, but already by year end of 2021, 64 ha of habitat have been restored. TRCA received the Electric Power Award from the North American Pollinator Protection Campaign in 2021 for this work, an award that recognizes electric power projects that are leading the field in pollinator-friendly initiatives.

1.1.4 Naturalize large habitat areas

Mississauga, ON

The City of Mississauga has facilitated four controlled burns (2012, 2014, 2017, and 2021) with professional contractors to maintain and enhance the tallgrass prairie at Jack Darling Memorial Park. Controlled burns are vital for tallgrass prairie and savannah ecosystems, as fire removes woody vegetation, non-native, invasive, or non-prairie plant species, and organic matter, and also blackens the soil. Soil to seed contact, as well as warm soil from the blackened earth, promotes prairie seed germination. Not only do these endangered tallgrass prairie ecosystems harbour rare plant species and support biodiversity (including pollinators), but they also sequester large amounts of atmospheric carbon into the soil.

Guelph, ON

Prompted in 2015 by corridor maintenance, the Silvercreek Hydro Corridor became a collaborative habitat restoration project between the City of Guelph, Hydro One, and the local community. The area, initially overrun with non-native buckthorn, was clear cut as part of routine maintenance by Hydro One. Further site preparation included grubbing and tilling, prior to seeding with a 20-species mix of native perennial grasses and wildflowers. A $10,000 grant from Hydro One was later used to purchase hundreds of native trees, shrubs, and perennials to serve as a buffer between homes and the meadow. The Silvercreek Hydro Corridor is now thriving, and the City of Guelph continues to practice effective land stewardship including monitoring for and removing buckthorn.

1.1.5

Dedicate resources to native plant propagation

Many communities across Canada propagate plants in greenhouses, but often these are non-native annuals that have been selected based primarily on aesthetics, offering little value to pollinators and ecosystems. Instead of devoting valuable greenhouse space to the propagation of non-native and solely ornamental plants, consider using this space to propagate native plants that can be integrated into flower beds, planters, and hanging baskets. Native plants are often beautiful too, and they provide additional pollinator, cultural, reconciliation, and ecosystem benefits. By dedicating resources to growing native plants, communities can bring down the cost of planting efforts. Because native plants are adapted to the region, they require fewer inputs, such as water and fertilizer, to maintain; swapping out non-native ornamental plants for native plants can therefore bring down plant costs and carbon emissions over time.

Guelph, ON

In 2019, the City of Guelph Park Operations and Forestry initiated a native herbaceous plant propagation program in city greenhouses. The two main goals of this program are to support the Guelph Horticultural department's transition to using more native plants and to provide plants for naturalization plantings in parks with community partners. The program has expanded from a couple hundred seedlings in 2019, to almost 4,000 in 2022, comprised of over 30 species of native grasses and wildflowers, including wild bergamot, common milkweed, Joe pye weed, smooth blue aster, switchgrass, and many others for local naturalization plantings and gardens. All seed for this program is collected annually within city limits.

1.1.5 Dedicate resources to native plant propagation

Whitby, ON

In 2021, five Whitby staff from Horticulture, Sustainability, Urban Design, Forestry, and Parks Planning worked together to develop and pitch the Seeds for Bees program. The vision of Seeds for Bees is to develop a municipal native plant nursery, through which Whitby can establish a sustainable supply of native perennial grass and shrub species to maintain and expand native plantings across town. The team pitched Seeds for Bees at The Hornets' Nest, a Whitby program inspired by the popular TV show, Dragon's Den, that encourages employees to bring forward innovative program ideas and pitch them to the Town's Senior Leadership Team for funding. The team secured an initial $2,000 to fund the program, and in the winter of 2021 picked up the necessary equipment and began seeding. By the spring of 2023, the team expects to begin incorporating plants from Seeds for Bees into parks and gardens to expand and enhance pollinator habitat across Whitby.

1.1.6

Develop habitat guides and tools to streamline projects

Streamline pollinator habitat creation by developing guides and tools that are specific to the region. Start basic by gathering or developing native plant lists for your region. We recommend using Pollinator Partnership Canada's Ecoregional Planting Guides and *Find Your Roots* plant selection tool. Once you have a plant list, it is possible to streamline further by developing and sourcing seed mixes that can be used across multiple sites. To really set your community up for success, develop a habitat creation strategy document that outlines habitat goals and provides a step-by-step guide to creating habitat across multiple landscape contexts.

Calgary, AB

In 2014, The City of Calgary published a Habitat Restoration Project Framework that provides guidance and outlines requirements for managing habitat restoration projects. The framework outlines a comprehensive 10-phase iterative process for habitat restoration projects, from project triggers, to implementation, to management. In 2018, Calgary followed the Habitat Restoration Project Framework with an extensive City of Calgary Seed Mixes document to inform urban restoration. The document outlines what to consider when designing a seed mix for an urban area, including timing, short term seed storage solutions, site preparation, seed handling, the importance of clean seed, seeding methodologies, and seeding rates. The document also includes many example seed mixes that have worked in Calgary with thorough explanations about the use conditions that they were designed for. Similarly, a Soil Handling Recommendations document was published in 2019, and a City of Calgary Plant Lists document was published in 2020. These documents are all designed to aid in restoration work.

Brooks, AB

The City of Brooks Environmental Advisory Committee (EcoBrooks) was recently approached by Medicine Hat College - Brooks Campus to collaborate on a native plant garden that was installed near the campus' entrance. EcoBrooks was instrumental in the development of a southern Alberta native plant list that was used for the project, which includes a variety of pollinator-friendly and drought-tolerant plants. This plant list can now be used to streamline and guide future projects.

1.2

Habitat management practices

1.2.1

Use Integrated Vegetation Management (IVM)

For pollinator habitat to thrive, it is important that vegetation is actively managed with pollinators in mind. Develop an IVM plan that prioritizes targeted mechanical and chemical methods of invasive vegetation control over broadscale mowing and herbicide use. The goal should be to protect habitat from invasive species spread without damaging plants that pollinators depend on.

You can make a big difference for pollinators by reducing the amount and frequency of mowing – and when you do mow, doing so at times and in ways that minimize impacts to pollinators. Consider:

- Reducing mowing to once or twice per year (or not at all) in areas that are not actively used
- Rotating mown areas throughout the year or between years to ensure that patches always remain available as pollinator habitat
- Cutting grass only to 20 or 30 cm to allow native flowering plants to recover more quickly
- Avoiding mowing from mid-June to late October to avoid peak bloom times
- Mowing slowly and installing flushing bars on mowers to reduce direct pollinator impacts

Reducing your mowing frequency can be a win-win, resulting in reduced maintenance costs and greenhouse gas emissions[41]. To bring IVM into organizational practice, develop a concrete plan and provide formal training to landscaping staff and contractors on the importance of pollinators and the goals of IVM.

Midland, ON

The Town of Midland initiated a no-mow/reduced-mow pilot program in 2020 to limit mowing frequency on public land. Through this program, the town has already set aside two ha of land across seven sites to be mowed only twice annually. Prior to this program, each of the sites were mowed between 10 and 12 times per year. Already, through this mowing reduction, the town has reduced municipal greenhouse gas emissions by nearly 1,250 kg of carbon dioxide – a significant contribution to their climate action plan. In 2021, the town introduced a native, pollinator-friendly wildflower seed mix to the Gawley Park site. In coming years, the town will review the pilot program and establish a plan for introducing additional native species to these areas when needed and expanding to new areas.

1.2.1 Use Integrated Vegetation Management (IVM)

Brampton, ON

In 2018, the City of Brampton introduced the Don't Mow, Let it Grow initiative to convert select areas of public land covered by turfgrass into pollinator habitat. Since then, 27 ha of turfgrass has been converted into pollinator habitat. The City of Brampton notes that this initiative not only benefits pollinators, but results in a myriad of environmental, financial and aesthetic benefits and contributes to achieving goals set out in their Grow Green Environmental Master Plan. Brampton is currently developing a formal maintenance program for these spaces and plans to pilot this in the spring of 2023.

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1.2.2

Restrict chemical applications that can negatively impact pollinators

Substantial evidence shows us that some chemical pesticide products can harm pollinators. Insecticides can impact pollinators lethally and sub-lethally through direct exposure, while herbicides can impact pollinators indirectly by eliminating plants that would otherwise serve as food sources[24]. However, herbicides can also be used to remove non-native and invasive plants and are sometimes part of a pollinator habitat site preparation plan or a management plan. We can be mindful of the impact that chemical applications have by only using them as a last resort – not for cosmetic purposes, and not prophylactically across landscapes. If your province does not have strong restrictions in place, consider restricting chemical applications locally by banning the use of harmful insecticides for unnecessary cosmetic purposes and adopting an Integrated Pest Management (IPM) plan.

Calgary, AB

The City of Calgary introduced an Integrated Pest Management Plan in 1998 – and a revised Plan in 2020 – that provides detailed information on how to prevent and manage pests in Calgary. The plan serves as a decision-making model to prevent and manage pest problems with environmentally-sound land stewardship as a fundamental goal. In addition to having an Integrated Pest Management Plan, the City of Calgary publishes yearly pesticide use reports that are publicly accessible on the Calgary Parks website; these reports demonstrate a city-wide decrease in pesticide use over time.

Montréal, QC

In 2022, The City of Montréal passed a bylaw that prohibits the sale and use of several substances, including chlorpyrifos and certain neonicotinoids. The bylaw prohibits the sale of approximately one hundred pesticides for domestic use and prohibits the use of certain pesticides in agriculture, ornamental horticulture, and extermination industries. Commercial applicators now require an annual permit for pesticide use and are required to provide an annual register of pesticide use.

Ontario introduced a cosmetic pesticides ban in 2009 to supersede all local municipal pesticides bylaws and create one clear, transparent, and understandable set of rules across the province. To support this ban, Ontario developed a pesticide classification system that consists of eleven classes representing different usage approaches. The ban prohibits use of over 95 pesticide ingredients for cosmetic purposes on lawns, gardens, patios, driveways, cemeteries, and in parks and schoolyards. In cases of infestation, the province recommends lower risk pesticides, biopesticides, and pesticide alternatives.

1.2.3

Set habitat standards and recommendations for urban development

Integration of pollinator plantings into new urban development projects is a great way to ensure that your community is bringing pollinators with it as it grows. Develop clear recommendations for developers, or better yet, set minimum habitat standards and provide a list of additional recommendations. Standards and recommendations can include minimum amounts of space dedicated to native plants and pollinator nesting space, encouragement of green roofs that provide additional surface area for habitat, and restrictions on invasive species that can crowd out native plant species. In addition to providing standards and recommendations for new developments, conduct reviews to see where habitat can be integrated into completed projects.

Toronto, ON

The Toronto Green Standard has set sustainable design requirements for new private and city-owned developments since 2010. The Standard uses performance tiers, with Tier 1 items as mandatory and Tier 2 items as recommended and financially incentivized. The Ecology section of the Standard makes it mandatory to plant using a minimum of 50% native plants and to refrain from planting invasive species. In addition, the Standard incentivizes the integration of biodiverse green roof space and site habitat restoration using native flowering plants that bloom throughout the growing season.

Collingwood, ON

The Collingwood Business Improvement Association undertook a Master Garden Plan review of 35 flower beds across Collingwood in 2020. The Downtown Gardens Master Plan was published in August of 2021 and includes many recommendations for practices that are beneficial to pollinators. For example, the document highlights the importance of native plants to pollinators as sources of nectar and pollen, and includes an extensive list of native perennials to guide planting efforts. The document also highlights the importance of planting large, species-diverse flower patches that support a range of pollinators, and smaller patches that serve to link large patches together, contributing to habitat connectivity.

1.2.4

Promote pollinator-friendly practices in community gardens

Community gardens provide a valuable opportunity for residents without yard space to grow healthy food and plants that support pollinators, particularly in densely populated communities and in urban cores where yard space is limited. For many residents, community gardens may be the only opportunity to personally engage in land stewardship for pollinators. Take steps to promote pollinator-friendly practices in community gardens, such as planting pollinator-friendly plants, minimizing chemical inputs, and leaving leaves, stems and dead stalks during winter for nesting space.

Collingwood, ON

The Town of Collingwood has recently introduced two community gardens into public parks and plans to introduce a third in 2022. While the gardens are used primarily to grow fruits and vegetables, the Town of Collingwood identified support for pollinators as one of the key goals for these projects. To that end, the town has worked with organizations such as Pollinate Collingwood and the Environment Network to plant native, pollinator-friendly plants in designated areas, and to create resources to aid in public education and awareness about pollinators. By integrating native, pollinator-friendly plants into community gardens, the town is both supporting pollinators and the many fruit and vegetable plants in the gardens that require pollination.

Tiny Township, ON

Tiny Township, in partnership with Depave Paradise and a team of volunteers, turned decommissioned tennis courts into a community garden in 2019. The garden provides 27 plots where residents can plant edible and pollinator-friendly plants. The garden is overseen by a volunteer Community Garden Coordinator who promotes pollinator-friendly practices, such as restricting synthetic pesticides and leaving leaves and other plant debris through winter and early spring to nourish the soil and provide pollinators with nesting habitat.

1.2.5

Restrict urban honey beekeeping

The European honey bee is an agricultural organism in North America, managed by humans for crop pollination, honey, and other hive products. While honey bees are essential to modern agriculture in North America, they are not of conservation concern. Urban beekeeping can bring attention to the importance of pollinators, but this benefit may be outweighed by threats to native pollinator populations; when kept in urban areas, honey bees may negatively impact native pollinator populations by increasing competition for limited floral resources, transferring diseases or pests, and changing floral communities[42,43,44,45]. Research is ongoing to understand the impact of urban beekeeping on native pollinator populations. Given this, it is important that communities take a cautionary approach to urban beekeeping and prioritize support for native pollinators. Help residents in your community understand that keeping honey bees is not a good way to support conservation. Consider restricting urban honey bee keeping in your municipality with exemptions for crop pollination, honey production, and hive product production.

Vancouver, BC

The City of Vancouver allows urban beekeeping with public safety and bee health standards, and site-specific requirements. At the provincial level, all beekeepers must register with the BC Ministry of Agriculture. Beekeepers are required to manage colonies in a way that promotes health and discourages swarming, and beekeeping is discouraged unless beekeepers have taken a recognized course or are members of a local bee club. A maximum of two hives are allowed on a parcel of land with an area less than 10,000 square feet, and only two hives are allowed in each community garden. On its website, the city dispels myths that beekeeping supports biodiversity and declining native bee populations, and that beekeeping is a low-investment hobby that can easily complement urban gardening.

1.2.6

Minimize impacts of artificial nighttime light

Both the number of light-emitting sources and the intensity of light emitted have dramatically increased in the last 20 years[46]. Emerging evidence suggests that excessive artificial nighttime light may be a threat to nocturnal pollinators such as moths and bats. Artificial nighttime light has been shown to reduce nocturnal pollinator abundance, to reduce pollinator visits to night-blooming plants, and in one study, to directly reduce moth reproductive success[47,48]. Beyond impacts to pollinators, artificial nighttime light affects plants, animals, and ecosystems broadly by obscuring natural periods of light and dark that are essential cues for processes such as flowering, reproduction, foraging, and navigation[49]. To reduce these impacts, we recommend that communities reduce the overall quantity and intensity of artificial nighttime light where possible, and favour warm-coloured LED bulbs and fixtures that minimize glare[49].

Toronto, ON

In 2017, the City of Toronto created a Best Practices for Effective Lighting document which demonstrates how residents, architects, urban designers, and planners can provide energy efficient lighting that is cost-effective and has a low impact on the environment. This document supports the Toronto Green Standard, which sets lighting requirements and best practices for the construction of residential, commercial, industrial, and city-owned facilities.

Calgary, AB

In late 2000, Calgary Roads initiated a large-scale residential and major roadway streetlight retrofit program. Over 40,000 residential, semi-cut off streetlights were replaced with more efficient full cut off lights through this program by 2007. In addition, high pressure sodium lamp wattage on residential streets was reduced from 200 and 250 watts to 100 and 150 watts. As it became time to replace end-of-life HPS lamps starting in 2015, LEDs were used. The LED conversion of residential street lights was mostly complete by 2020, and all new street lighting must meet these same standards. Overall, these changes reduced electricity consumption, light trespass, and sky glow that can be detrimental to wildlife.

The International Dark-Sky Association's Fixture Seal of Approval

The International Dark-Sky Association – an authority on light pollution – provides an objective, third-party certification for light fixtures that minimize impacts of artificial nighttime light through its Fixture Seal of Approval (FSA). Search the FSA database or the Dark Sky Retailers page to find approved light fixtures and where to buy them.

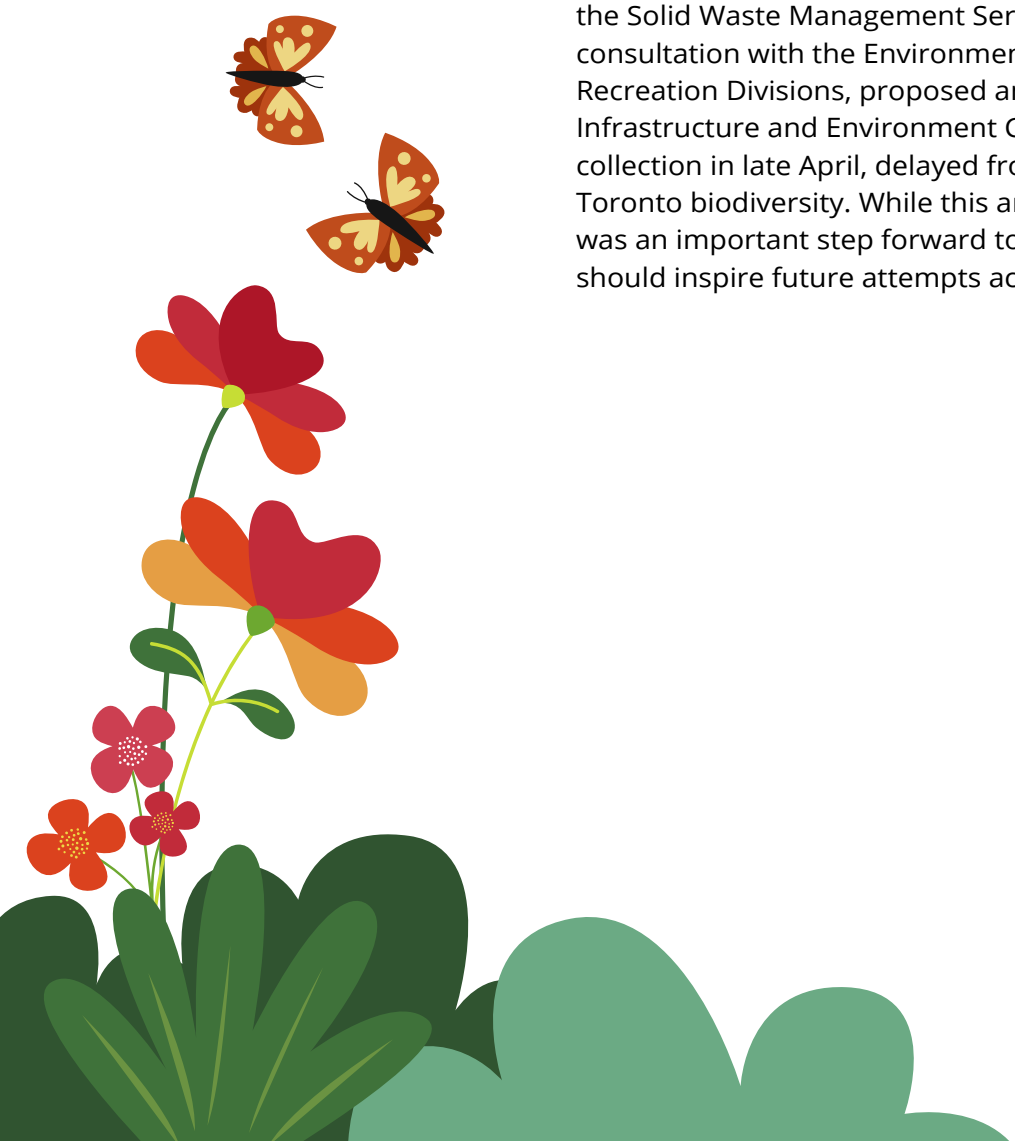
1.2.7

Delay yard waste collection

Pollinators often overwinter in gardens, parks, and other managed areas to emerge in spring. For example, cavity nesting bees often overwinter in hollowed plant stems and dead stalks, and bumblebees, butterflies, and moths often overwinter under decaying leaves[9,50]. By removing plant material from managed areas in early spring, we risk removing these overwintering pollinators with it. Consider pushing out yard waste collection until temperatures are consistently above 10 degrees celcius in your region to give more pollinators time to emerge. At minimum, communicate to residents that gardens may house overwintering pollinators in early- to late-spring, and that yard waste such as hollow stems, dead stalks, and leaves should be left intact, or moved to another area instead of disposed of early in the season.

Toronto, ON

The City of Toronto has a comprehensive webpage which explains to residents how they can best support native pollinators. On this page, the city recommends that residents wait until temperatures are consistently above 10°C before doing garden clean up, as putting out plant litter too early for collection can harm pollinating insects that have not yet emerged from overwintering within the plant material. In 2021, the Solid Waste Management Services and City Planning Divisions, in consultation with the Environment and Climate and Parks, Forestry, and Recreation Divisions, proposed an amendment to the City of Toronto's Infrastructure and Environment Committee to start yard waste collection in late April, delayed from late March, in an effort to protect Toronto biodiversity. While this amendment ultimately did not pass, it was an important step forward to protect overwintering pollinators and should inspire future attempts across Canada.



1.2.8

Complete a natural asset inventory

Natural assets – including pollinators, forests, wetlands, rivers, and more – provide local governments and communities with critical services, including (but certainly not limited to) pollination, stormwater management, and climate change mitigation. Conducting a Natural Asset Inventory is an important step that communities can take to understand and value natural assets. Ultimately, having an understanding of your community's natural assets makes it easier to identify geographic areas where there are gaps in natural assets, and to plan strategically for enhancement. A Natural Asset Inventory can also serve as an important community education resource by conveying the value of natural assets – including pollinators – in a way that many residents can understand.

Okotoks, AB

The Town of Okotoks developed a comprehensive Natural Asset Inventory in collaboration with Fiera Biological Consulting in 2020, which received the Canadian Association of Municipal Administrators' 2021 Environment Award and the Alberta Urban Municipalities Association's 2021 Municipal Environment Award. One important innovation included in the Okotoks Natural Asset Inventory is an estimate of the value of native pollinator habitat based on increased crop yields provided by native pollinators. This estimate provides clarity to land use decision makers and the broader Okotoks community on the value of native pollinator habitat.

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1.2.9

Create a pollinator habitat map

Create a pollinator habitat map, including pollinator gardens, community gardens, and larger naturalized areas to make it easy for residents to see the efforts that have been made and to enjoy these areas. One way to do this is by overlaying pollinator habitat spaces on a community map; feature it on your website and update it as new habitat is created. If you want to go above and beyond, take this to the residential garden level and develop a mechanism for residents to add their own pollinator garden to a map, especially if you have lots of registered pollinator gardens in your community. Habitat maps also facilitate the process of planning where future habitat projects should take place in order to most effectively provide habitat corridors.

Hamilton, ON

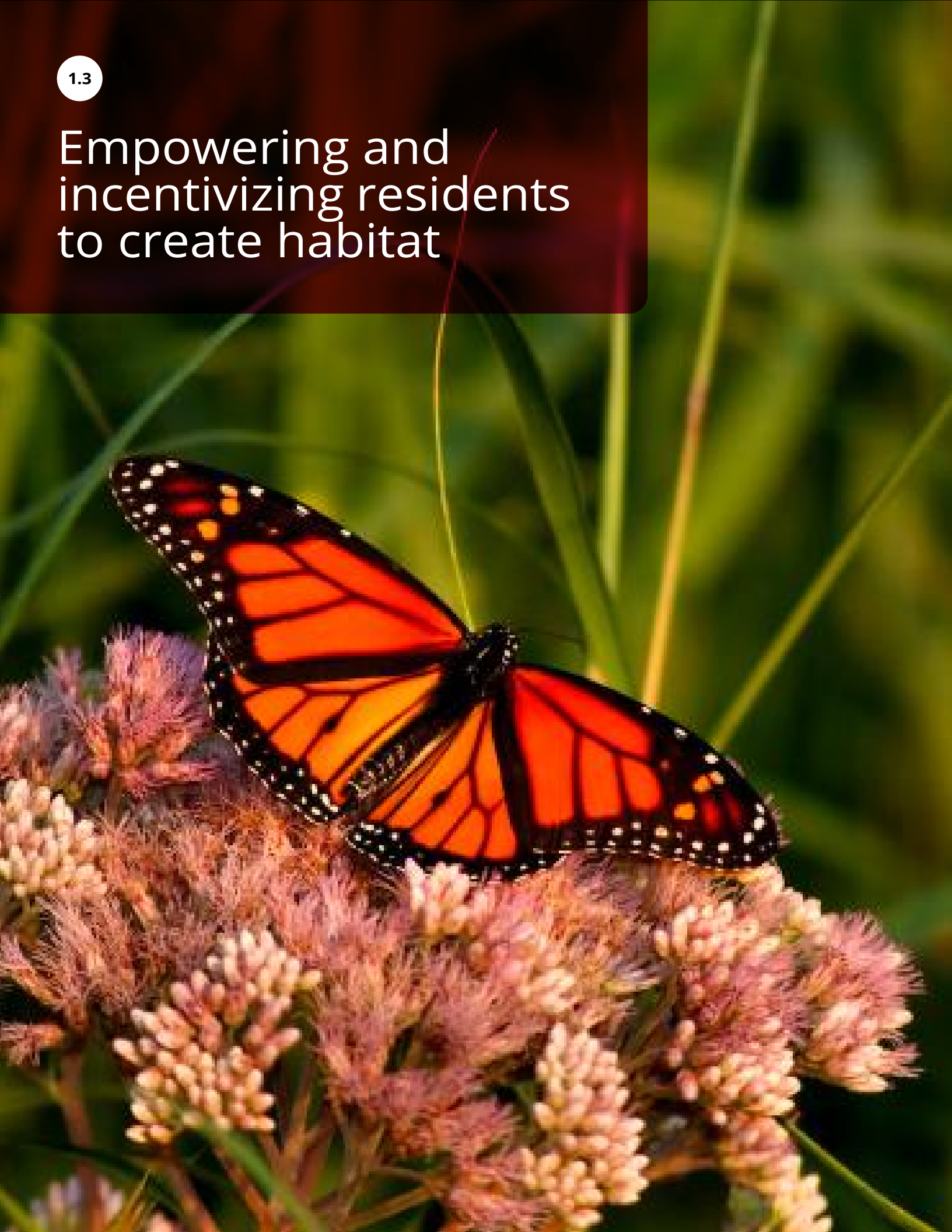
The Hamilton Pollinator Paradise Project maintains an interactive map of the 300+ pollinator gardens in Hamilton that have been certified by the Pollinator Paradise Project since 2015. Clicking each garden brings up additional information, including the types of plants in the garden, and whether there is nesting space for pollinators present. The map also shows garden type (e.g. residential, school, community), how large gardens are, and whether gardens have won a Monarch Award, which is an acknowledgement of pollinator gardens that have achieved a standard of excellence in Hamilton.

Collingwood, ON

Pollinate Collingwood, a community-led, grassroots initiative dedicated to raising awareness of and supporting native pollinators, launched a story map of Collingwood's pollinator gardens in collaboration with the Town of Collingwood in 2021. Pollinate Collingwood supplied the information, and a passionate town employee constructed the story map to be hosted on the town's website. This online map allows users to smoothly navigate through a map of Collingwood, click on individually marked gardens, and read a bit about each one, including information about the gardens themselves and the organizations that were involved in creating them.

1.3

Empowering and incentivizing residents to create habitat



1.3.1

Modify lawn bylaws to empower residents to create habitat

Canadians are increasingly creating habitat on their own property to support pollinators. While many residents do this by planting neat garden strips alongside turfgrass, many want to get rid of turfgrass completely and naturalize their yards. This is great for pollinators and the ecosystem; however, residents can be discouraged or even fined because of lawn bylaws that vaguely prohibit 'unkempt' or 'unsightly' yards. These are subjective terms that do not provide clarity on how yards can be managed. Consider reviewing your community's lawn bylaw, if you have one, to eliminate any vague, subjective terms. Instead, introduce guidelines that emphasize human safety and ecosystem function, and make clear that a naturalized yard aesthetic is acceptable. Develop a plant list for your community that prohibits the use or overgrowth of invasive and noxious species only, and provide height guidelines for areas where sightlines are necessary for safety.

Toronto, ON

The City of Toronto's lawn bylaw has evolved over the years. Before 2004, the bylaw was height restriction based and primarily aesthetics-driven. In the 90s and early 2000s, residents with naturalized lawns challenged these height restrictions and the City of Toronto introduced a Natural Garden Exemption in response. While the Natural Garden Exemption did make it possible for residents to legally maintain naturalized lawns, it still required residents to obtain city approval. Many residents felt that this was not enough, that approval should not be required for naturalized lawns in the same way that it is not required for turfgrass lawns, and that naturalized lawns should even be explicitly encouraged for the environmental benefits. In 2022, the City of Toronto modified the bylaw to address these arguments. They eliminated the height restriction except for conventional turfgrass, introduced a city-specific prohibited plant list to protect human and environmental health, and eliminated the need for a Natural Garden exemption.

1.3.2

Enable and encourage residents to plant on boulevards

Boulevards, often occurring between sidewalks and roads, present another opportunity to replace turfgrass with native plants that benefit pollinators and the ecosystem. Consider reviewing and modifying bylaws to allow residents to plant on boulevards, with similar rules to updated lawn bylaws; namely, restricting plants that are invasive or noxious, and restricting plant height to maintain sightlines necessary for safety. Once boulevard planting is allowed, launch a campaign to let residents know that they are able to plant on boulevards and show off some beautiful examples in your community. Additionally, incentivize residents to plant on boulevards specifically through grants, rebates, and boulevard garden contests.

Mississauga, ON

Blooming Boulevards, a volunteer community-based organization with the mission to build a cohesive garden network for native pollinators in Mississauga, has provided comprehensive gardening information and free plant material to Mississauga residents since 2019. All plants provided by Blooming Boulevards are native to the region and propagated ethically from seed by the Blooming Boulevards team. Residents may apply through the City of Mississauga for permission to plant a boulevard garden, and once granted permission, can apply to receive support from Blooming Boulevards. Since 2019, Blooming Boulevards has supported the creation of 220 native plant boulevard gardens.

© Jitendra Chaudhari, Blooming Boulevards

1.3.2 Enable and encourage residents to plant on boulevards

Victoria, BC

In 2016, the City of Victoria introduced guidelines which document how residents of Victoria can safely and legally garden on city-owned boulevards. Victoria makes clear within these guidelines that resident boulevard planting supports city goals to both improve local food security and increase ecological biodiversity, including many pollinating species that are native to Victoria. The city also offers Growing in the City Grants which support a variety of gardening activities that benefit the community, including boulevard gardens.

Oshawa, ON

In 2016, the City of Oshawa modified their Boulevard Bylaw to encourage the planting of pollinator-friendly plants. Since then, residents have been permitted to garden on boulevards as long as plants are maintained at a height no greater than 0.9 m for safety purposes.

1.3.3

Provide pollinator habitat grants and rebates

Beyond bylaws that allow for naturalization, one of the best things that you can do to support residents creating pollinator habitat in your community is to provide funds. One way to do this is through grants; these could be offered yearly to a select number of successful applicants with plans to support pollinators in the community. Another way to do this is through rebates that provide partial reimbursement for pollinator-friendly plants purchased by residents for pollinator gardens that have been pre-approved. By providing funding, you will be breaking down one of the most significant barriers to residential pollinator planting, and you will be increasing the inclusivity of those that can participate in supporting pollinators.

Okotoks, AB

The Town of Okotoks has a long-standing Water Conservation Rebate Program that financially supports residents (from $100 up to a maximum of $3,000) to replace water inefficient plants with drought-tolerant species, or to xeriscape and replace turfgrass with drought-tolerant plant species and mulch. Qualifying plants include many native and non-native perennials, shrubs, and trees that are not only drought-resistant, but also pollinator-friendly, including joe pye weed, goldenrod, alpine asters, and more.

Toronto, ON

Since 2019, the City of Toronto has provided PollinateTO Grants of up to $5,000 per project. These grants provide funding to support community-led initiatives that result in the creation or expansion of pollinator habitat on public and private lands across the city. All PollinateTO projects also include an educational component to engage others in their community about pollinator stewardship. The grants are open to community groups, not-for-profits, student groups, parent councils, and resident-led groups. Since launching in 2019, PollinateTO has funded more than 150 projects, supported the creation of over 400 gardens, and engaged 66 schools in pollinator stewardship. These actions have culminated in the creation of an estimated 28,000 m^2 of pollinator habitat in Toronto.

1.3.3 Provide pollinator habitat grants and rebates

Collingwood, ON

In 2022, the Town of Collingwood provided a 50% rebate on native plants (up to $150) through Bees & Trees, a project of The Canopy Collingwood Initiative. The project, funded through the generosity of Julie DiLorenzo, was available to Collingwood residents and schools to take action on creating pollinator habitat. Participants were asked to provide contact information, receipts, and plant details through an online application, and once approved, the habitat created was featured on The Canopy Collingwood Initiative's online map. Pollinate Collingwood, a local nonprofit, supported participants by providing educational materials about pollinators.

© Anthony Colangelo

1.3.4

Offer native plant giveaways and subsidized sales

Giveaways and subsidized sales are a great way to get plants and seeds to interested residents; and not only that – they're a great way to make sure that residents are getting the right plants and seeds. Work internally with established plant lists or collaborate with native plant nurseries to select, propagate, and provide plants that are native to your region. Plants can be provided individually or in kits designed for specific garden conditions (e.g. shade, partial sun, and full sun). You may even consider harvesting the seeds from gardens and naturalized areas to reduce costs.

Richmond Hill, ON

Richmond Hill's Healthy Yards Program supports pollinator plantings on private land through a yearly subsidized native plant sale that began in 2005. As part of the Healthy Yards Program, Richmond Hill offers two plant kits: a full sun kit and a shade tolerant kit, each containing 16 plants that attract a variety of pollinators. Richmond Hill distributes over 3,000 individual plants to residents yearly through this sale, which supports the creation of pollinator habitat across the city.

© City of Richmond Hill

Grande Prairie, AB

In 2022, the City of Grande Prairie set up an Earth Day seed bar through the GP Grows program. Residents that visited the seed bar were provided with a variety of free seeds, including a wildflower seed mix, and vegetable seeds such as spinach, tomatoes, zucchinis, and cucumbers. The city provided informative handouts along with the seeds that instructed residents on how to successfully grow them.

Ajax, ON

In partnership with Local Enhancements and Appreciation of Forests (LEAF), the Town of Ajax has provided subsidized native shrubs and trees to Ajax residents since 2015. In addition to subsidized sales, the Town of Ajax provides free native seeds to residents who visit the Sustainable Ajax booth at community events.

1.3.5

Provide pollinator-friendly garden consultations

Often people want to plant a garden to support pollinators but don't know where to start. They may be unsure which plants would work best in their yard given the soil type, level of exposure to sun, and climate. While the process of plant selection, site preparation, plant installation, and maintenance can feel overwhelming to first-time native plant gardeners, there are experienced gardeners in your community – whether public employees, nonprofit workers, volunteers, or residents – that are passionate about teaching people how to plant for pollinators. Consider developing a program to support interested but inexperienced gardeners.

Guelph, ON

The City of Guelph has provided free garden consultations to residents since 2017 through the Healthy Landscapes Visits Program. Residents may book an appointment online to have an advisor meet with them, assess their property and provide garden planting and maintenance advice specific to their space, including advice on species selection, watering, and developing a garden layout that is pollinator-friendly, water wise, and aesthetically pleasing. After the visit, residents are provided with a free report that outlines key recommendations.

© Tiffani Harrison

1.3.5 Provide pollinator-friendly garden consultations

Collingwood, ON

The Environment Network, a not-for-profit dedicated to environmental sustainability in Collingwood, provided gardening guidance to Collingwood residents through the Green Garden Visits program. Members of the Environment Network visited Collingwood residents' homes, evaluated outdoor spaces, and provided recommendations to make these spaces more environmentally friendly. A common recommendation was to introduce native plants that support local pollinators.

Victoria, BC

In 2021, the City of Victoria, Satinflower Nurseries, and Pollinator Partnership Canada launched MeadowMakers – a seven-month program to guide Victoria residents through the process of rewilding spaces, such as yards and boulevards, with native plants. Led by Kristen Miskelly of Satinflower Nurseries and Lora Morandin of Pollinator Partnership, one hundred members participated in the inaugural year of Meadowmakers, and have been empowered to create habitat for pollinators in Victoria.

1.3.6

Promote pollinator-friendly garden certification programs

Pollinator-friendly garden certification programs provide guidance to residents on how to create a pollinator-friendly garden, acknowledge the efforts they have made and, through promotional signage given to participants, can educate the community about pollinators. They also provide a great opportunity for residents to feel that they are personally involved in pollinator conservation efforts in your community once you have become a Bee City Community. Consider promoting a nonprofit pollinator-friendly garden certification program to your residents, or even launching a certification program of your own.

Hamilton, ON

The Hamilton Pollinator Paradise Project – a collaborative initiative between Environment Hamilton and the Hamilton Naturalists' Club – has been working with Hamilton communities since 2015 to build a pollinator corridor across the city. As part of this initiative, Pollinator Paradise Project has developed a Hamilton-specific pollinator garden certification program that is available to residents and businesses. When a pollinator garden is created in Hamilton, Pollinator Paradise Project will certify it for free, provide a garden sign that says "We're Feeding Pollinators," and add it to a growing, interactive map of pollinator gardens throughout the city. They also provide excellent tips for creating and maintaining a pollinator garden on their website.

© Hamilton Naturalists' Club

Pollinator Partnership Canada's Bee Friendly Garden Program

Pollinator Partnership recognizes home and community gardeners who take action to provide pollinator habitat through the Bee Friendly Garden Program. Program members commit to specific guidelines to create and maintain pollinator-friendly habitat, and have access to garden signage to promote pollinators in their community.

1.3.7

Initiate seed libraries and encourage seed exchange

Seed libraries are an effective tool for the collection and distribution of native plant seeds that can otherwise be difficult to find. Beyond that, they encourage the free sharing of native plant seeds between members of the community. Consider establishing native seed libraries at local library branches, community centres, and schools, or adding native seeds to currently active seed libraries. Include community members with extensive native plant knowledge in the process to ensure that only appropriate plants are stored and distributed. To make seed libraries even more effective, provide educational materials such as pamphlets to residents that discuss the benefits and process of harvesting seeds.

Cambridge, ON

The Cambridge Idea Exchange Library launched a community seed library at their Preston branch in 2015. Since opening, the Preston seed library has accepted donations of all seeds, however, they intend to limit donations to only include native, non-invasive flowering plants over time. Through this change, staff will engage with the local community to educate about which plants are native to the area and to encourage native plant gardening. The Idea Exchange Library also hosts school tours to educate kids about plants and pollinators, and they provide seeds from the library to kids to plant at home.

Timmins, ON

The C.M. Shields Centennial Branch of the Timmins Public Library has had a Seed Library since 2017 to support the preservation and sharing of heirloom seeds. Residents can apply each year to receive seeds from the library's inventory and are then encouraged to pay it forward by bringing seeds back to the library once plants have established and seeds have been saved. The Library has hosted events with many different community partners – such as their local Cochrane District Master Gardeners – featuring various topics, including pollinator gardens, seed saving, soil management, and the differences between invasive and native plants.

1.3.7 Initiate seed libraries and encourage seed exchange

Barrie, ON

Barrie Urban Gardeners, a group of volunteers dedicated to getting residents of Barrie excited about growing local food, installed seed boxes at community gardens across the city to encourage the trade and distribution of seeds. Boxes such as these make seed exchange easy and accessible.

Seeds of Diversity

The registered charity Seeds of Diversity is a Canadian leader when it comes to seed saving and sharing. They support over 150 seed exchange events known as Seedy Saturdays and Sundays across the country each year. If you are setting up seed libraries in your community, consider checking out the resources on their website to get you started.

1.3.8

Support farmers to protect pollinators on agricultural lands

At approximately 65 million ha in Canada, farmland constitutes a significant area of land which can be leveraged to support pollinators. Farmers often want to preserve and create pollinator habitat on farmland, and actions that support pollinators can also support the long-term resilience of farms and food production. Hedgerows and flower strips on farmland are a win-win, as they can result in increased pollination, natural pest control, and improved crop yields[51,52]. Consider creating and promoting informational resources, such as guides on habitat creation and chemical application risk mitigation, and providing financial support through grants or rebates that support farmers in your community to create pollinator habitat.

Delta, BC

The Delta Farmland and Wildlife Trust, a nonprofit that receives funding from the City of Delta, among other sources, works with local farmers on stewardship initiatives such as planting native trees and shrubs through the Hedgerow and Grass Margin Stewardship Program. Approximately 10 km of hedgerows have been planted to date on farmland in Delta, including over 14,000 trees. In addition, the Grassland Set-aside program offers farmers $400/acre to rest productive land for four years, converting acres typically used for row cropping back into grassland habitat, often through a colourful seed mix of flower species. These hedgerows and temporary grasslands provide critical habitat for pollinators and countless other wildlife on farmland.

Pollinator Partnership Canada's Bee Friendly Farming Program

Bee Friendly Farming (BFF) is a certification program from Pollinator Partnership for farmers that want to protect, preserve, and promote pollinator health. BFF provides guidelines for farmers and growers to promote pollinator health on their lands, while recognizing the farmer's contribution to pollinators through the BFF signage and product logo for marketing. The program is overseen by a task force of experts from the North American Pollinator Protection Campaign, including scientists and farmers, as it sets standards for sustainable farming on important concepts like planting pollinator food resources, providing nesting habitat, and incorporating an integrated pest management strategy.

2 Education and Engagement

In order to create and manage pollinator habitat, we need inspired people that understand what pollinators need and are willing to take action to protect them. As a Bee City Community, there is much that you can do to educate and engage residents. You can drive awareness and knowledge of pollinators by featuring them through media channels such as news, websites and social media, featuring signage in and around pollinator habitat, creating resources such as local pollinator guides, and developing materials to educate youth and staff. You can also engage residents by hosting talks, exhibits, habitat tours, community science events, and community habitat planting and maintenance events. Amplify these efforts by partnering with nonprofits and local experts that have the knowledge, and other local groups, such as Farmers' Markets, with the platform to engage a wide range of people. In this section, we recommend actions that focus on educating and engaging communities.

2.1 MEDIA, EDUCATION, AND MATERIALS

- 2.1.1 Promote pollinator conservation through media channels
- 2.1.2 Provide education and awareness materials about pollinators
- 2.1.3 Use signage to educate residents and promote membership in Bee City Canada
- 2.1.4 Provide pollinator-related training to employees
- 2.1.5 Educate youth about pollinators through schools and camps
- 2.1.6 Use bee hotels to educate about native bees

2.2 ENGAGEMENT EVENTS AND ACTIVITIES

- 2.2.1 Feature pollinator talks and workshops
- 2.2.2 Organize pollinator exhibits and day events
- 2.2.3 Bring the community together for habitat creation and maintenance events
- 2.2.4 Invite the community to pollinator habitat tours
- 2.2.5 Encourage participation in community science
- 2.2.6 Partner with food festivals, restaurants, and bars to promote pollinators
- 2.2.7 Feature pollinators at broader community events
- 2.2.8 Seek community feedback through public consultations and surveys

2.1

Media, education, and materials

2.1.1

Promote pollinator conservation through media channels

Communicate with residents in your community about pollinators through as many channels as possible, especially those with wide reach. Having a pollinator page on a community website is a great starting point. But think beyond that. Feature pollinators in social media posts, newsletters, articles, TV news broadcasts, and more. Tell residents about pollinator initiatives, how they can get involved, and what they can do to support pollinators at home. Get creative by using social media to share before-and-after habitat pictures, pollinator facts, native gardening tips, and invitations to volunteer and provide feedback on pollinator initiatives. There is also no need to create social media posts entirely on your own; benefit from the experts by sharing posts from nonprofits such as Bee City Canada and Pollinator Partnership Canada.

Brandon, MB

The Bee City Brandon team has a full website dedicated to teaching residents about pollinators and pollinator initiatives in Brandon. The website tells their story, provides local resources, and promotes local pollinator-related events. Beyond the website, Bee City Brandon has active Instagram and Facebook accounts, and has even developed a custom Bee City Brandon logo.

2.1.1 Promote pollinator conservation through media channels

Victoria, BC

The City of Victoria has a pollinator-focused web page that provides information about pollinators and pollination, explains what the City of Victoria is doing to protect pollinators, and provides a range of resources about local and national pollinator initiatives. The web page features Pollinator Partnership Canada and invites residents to participate in Pollinator Week during the third week of June.

Tiny Township, ON

In 2021, Tiny Township's Mayor, George Cornell, highlighted pollinators in his monthly column to residents. The column featured the diversity and importance of pollinators, indicated the locations of pollinator gardens in the community for residents to visit, and linked residents to Tiny Township's website with information on planting pollinator gardens.

2.1.2

Provide education and awareness materials about pollinators

Advance pollinator awareness and knowledge in your community by providing educational resources and pollinator-themed materials to residents. You can provide information about the pollinators in your region, best gardening practices, and pollinator initiatives through educational brochures and one-pagers at community events. If you want to get more creative, provide interactive materials such as pollinator-themed calendars and flash cards that facilitate learning and engagement. You may even want to provide fun, co-branded items to promote your community's commitment to pollinator conservation through Bee City Canada. Contract and engage with an outside group, such as Pollinator Partnership Canada or a local college or university, to help you create materials if you do not have the expertise or capacity internally.

Brandon, MB

In 2017, the City of Brandon and the Brandon Environment Committee partnered with an Assiniboine Community College student to develop a Brandon-specific Pollinator Management Guide as a capstone project. This guide explains what Brandon residents and municipal partners can do for pollinators, provides a comprehensive list of pollinator-friendly plants native to Brandon, and profiles the native bumble bees of Brandon. Assiniboine Community College students approach Bee City Brandon yearly for pollinator-friendly project ideas for their capstone projects.

Toronto, ON

In 2016, the City of Toronto partnered with pollinator experts at York University to develop a 72-page book titled "Bees of Toronto: A Guide to their Remarkable World." This engaging book provides a general overview of bees, a history of Toronto bee research, a comprehensive list of bee species that occur in Toronto, and a discussion of the threats that bees currently face and what we can do to protect them. This book is available online as a pdf, and physical copies can be borrowed from the Toronto Public Library.

Peterborough, ON

In 2017, the nonprofit Peterborough Pollinators developed a pollinator calendar that was sold directly through Peterborough Pollinators and at local shops throughout Peterborough. The calendar contained original native pollinator photography, information about native pollinators, and tips on how to garden with pollinators in mind. All proceeds from calendar sales were devoted to local pollinator initiatives.

2.1.3

Use signage to educate residents and promote membership in Bee City Canada

Signage can be used both to promote your community's participation in the Bee City Canada program and to educate the community about pollinators and creating quality habitat. Consider posting Bee City Canada signage in prominent locations such as at community entrances and in demonstration gardens, and other areas with high foot traffic; these signs drive community interest and engagement in pollinator initiatives. Use educational signage to teach residents about pollinators and best habitat practices, as well as to explain to them why you are altering community spaces to benefit pollinators. Educational signage can be particularly useful to explain the rationale behind new naturalizations and reduced mowing projects.

Newmarket, ON

The Town of Newmarket has installed Bee City Canada signs that state "Connecting People, Pollinators, and Places" on Welcome to Newmarket signs at municipal entrances. These signs are a great way to showcase Newmarket's participation in the Bee City Canada program and to draw the attention of residents toward municipal pollinator initiatives.

Calgary, AB

The City of Calgary routinely puts up educational signage in areas that are being naturalized or have been recently naturalized to inform the community about what is happening and how it benefits pollinators and other wildlife (e.g. "Naturalization in Progress;" "The habitat in this area has recently been restored"). These signs include the Bee City Canada logo and direct people to information about pollinators and restoration on the City of Calgary's website. In addition to signage, staff from the City of Calgary sometimes set up booths in recently naturalized spaces to engage with the community and answer questions.

© The City of Calgary

2.1.3 Use signage to educate residents and promote membership in Bee City Canada

Mississauga, ON

The City of Mississauga includes multi-panelled signage to inform residents about pollinators at multiple pollinator habitat sites throughout the municipality. For example, at Mississauga's Victory Park there is signage that explains the diversity of pollinators from bees to hummingbirds, what a pollinator garden is, which species are present at the site, and how people can help pollinators at home by creating pollinator gardens.

© City of Mississauga

Bee City Canada Signage

Whether you are interested in community entrance signs, park signs, or garden signs, designs are available for free on our website. You can also order garden signs directly from us here or work with us to create customized signs.

2.1.4

Provide pollinator-related training to employees

While educating the whole community about pollinators is important, it is absolutely critical to educate employees that are in a position to influence land management decisions and fund pollinator projects. This includes Parks and Environment staff, bylaw enforcement staff, landscapers, and community staff in many other positions. Give an overview of pollinator diversity and the importance of pollination services and then provide practical advice about how to navigate pollinator habitat projects. You may even consider reaching out to Pollinator Partnership Canada to provide training to your team.

Surrey, BC

In 2022, the City of Surrey became the first Canadian municipality to become certified as a Pollinator Steward at an organizational level through Pollinator Partnership Canada's Pollinator Stewardship Certification Training. To become certified as an organization, city staff participated in training and then completed follow up activities, including habitat and education and outreach actions. Trained staff now have specialized pollinator knowledge which can be applied directly to municipal habitat creation and management.

Toronto, ON

In 2021, the City of Toronto engaged Pollinator Partnership Canada to provide Pollinator Stewardship Training to City staff in various Divisions. This training included an introduction to pollinators and pollinator conservation, advice on pollinator-focused community outreach and education, and focused largely on habitat creation and management. The City of Toronto also provides annual training to bylaw enforcement staff to ensure that homeowners with naturalized gardens are not asked to remove plants unless they are on Toronto's prohibited plants list or obstruct sightlines, sidewalks, or roads in a way that could present danger. The city plans to introduce a supplemental training for bylaw enforcement staff that focuses on plant identification.

2.1.4 Provide pollinator-related training to employees

Grande Prairie, AB

In 2021, the City of Grande Prairie hosted a pollinator workshop that was attended by 20 city employees. The workshop included information about pollinator basics, how to support pollinators, and which plants are appealing to pollinators. It also focused on the health benefits associated with gardening and being in nature. The workshop was followed by an engaging discussion, and attendees left with a solid foundation of pollinator knowledge.

© Tiffani Harrison

Pollinator Stewardship Certification Training

Pollinator Partnership Canada offers Pollinator Stewardship Certification Training to individuals and organizations across Canada. Certification requires two steps: 1) completion of training modules, and 2) completion of one habitat creation action, and one outreach and education action. Once participants complete the training modules and follow-up actions, they receive a Pollinator Steward logo to demonstrate that they have a science based understanding of pollinator needs, an understanding of habitat creation for pollinators, and have taken action. Please contact Pollinator Partnership Canada if you would like to organize training for your staff.

2.1.5

Educate youth about pollinators through schools and camps

Children are our future. It may be a cliche, but that makes it no less true. If we are able to foster an understanding of, and respect for pollinators in children, our current and future environment will be much better for it. To protect pollinators, it's important that children understand who they are, what they do, and what they need. Consider providing content and resources to schools and camps in your community to facilitate pollinator-focused education. Encourage field trips to pollinator gardens and naturalized areas. You may even consider putting a program in place to provide funds and support for teachers to create pollinator gardens with students at local schools.

T'it'q'et First Nation, BC

T'it'q'et, the first Indigenous Bee City Community in Canada, has cultivated youth pollinator stewardship in many ways. Chief Sidney Scotchman wrote an original origin story of bees in the style of local indigenous legends, which Shawna Riley, the Social Development Administrator in T'it'q'et, presented to local youth. The community has developed an educational display that is used to educate residents about pollinators at events and schools. Shawna has even developed a Pollinator Protection Patrol Program, where she educates youth about pollinators and provides them with Pollinator Patrol Badges to instil a sense of personal agency and pride in protecting pollinators.

© T'it'q'et First Nation

2.1.5 Educate youth about pollinators through schools and camps

Cambridge, ON

The City of Cambridge provides pollinator education to kids in partnership with Idea Exchange Libraries and the *rare* Charitable Research Reserve. Idea Exchange hosts school garden tours at their Preston branch, where facilitators teach kids about pollination and lead them through an interactive game where they take the perspective of plants and bees. The *rare* Charitable Research Reserve runs a summer Every Child Outdoors (ECO) camp with lots of outdoor activities, education about pollinators, and more.

Niagara Falls, ON

The Schools in Bloom program is a collaborative effort between The City of Niagara Falls Park in the City Committee and the School of Horticulture that gives elementary schools across the city the opportunity to participate in planting projects in schoolyard areas and to learn about horticulture and the environment. Pollinator gardens specifically have been promoted through Schools in Bloom.

Pollinator Partnership Canada's BeeSmart School Garden and Curriculum Kit

The Bee Smart™ School Garden and Curriculum Kit is a great tool to teach students about the importance of pollinators and how they are connected to our food and environment. With this kit, you will guide students through a discovery process that will increase students' understanding in science, math, and language arts by connecting them to plants, pollinators, food, and gardens by creating habitat for pollinators. The kit can also be used for exclusively in-classroom learning if you do not have the ability to create a pollinator garden.

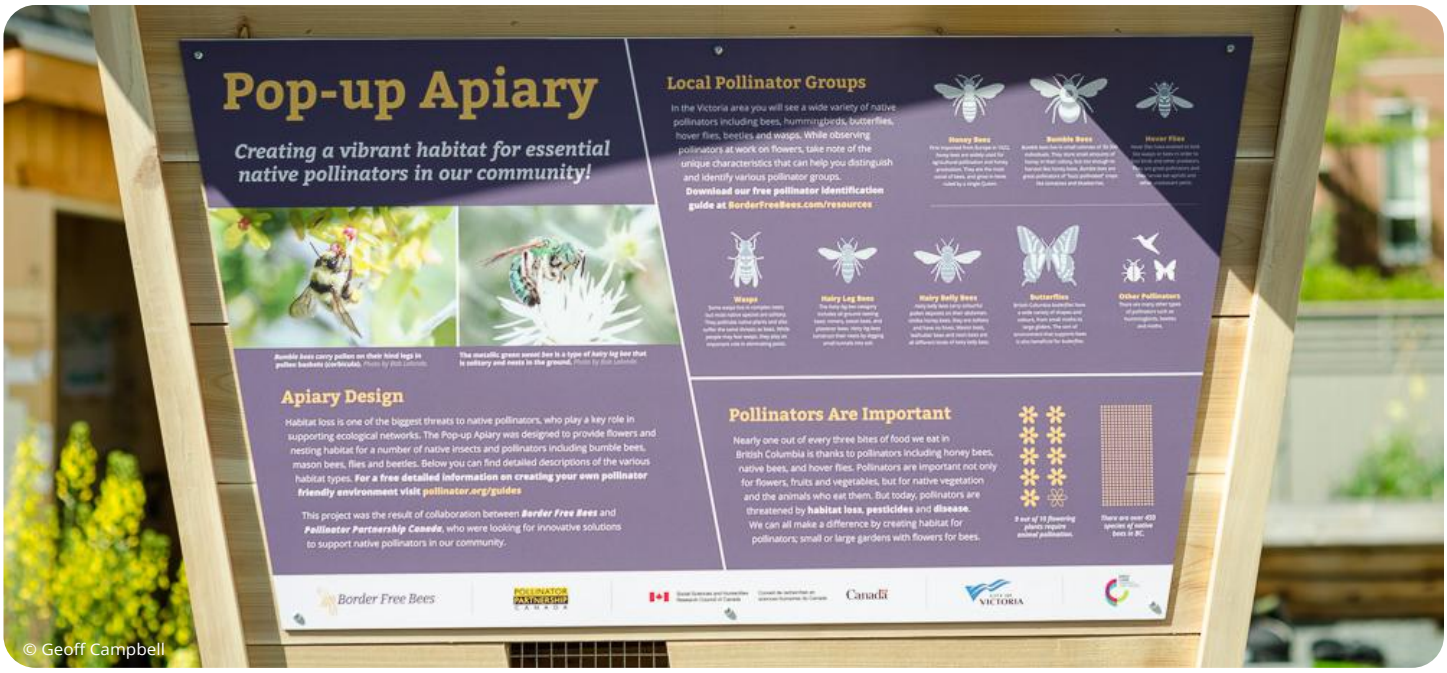
2.1.6

Use bee hotels to educate about native bees

Native bee hotels or bee boxes have gained a lot of traction in the past decade as a way to provide nesting space for cavity-nesting native bees – so much so that they can now be purchased from retailers across Canada. While bee hotels can indeed provide shelter for native bees, the science of their overall impact on bee populations is still unclear. Research shows us that bee hotels attract a range of visitors, including native and non-native bees and wasps, but also parasites for which bee hotels can serve as a free buffet for these pests[53]. If your goal is to provide bees with nesting space, you can better achieve this by leaving bare patches of soil and planting plants that provide natural nesting sites in the form of hollow stems. However, if your goal is to educate people about the lives of native bees, bee hotels can serve as an excellent tool. It is essential that bee hotels are properly designed and managed so that they don't create pest and disease problems; see the box below for guidelines.

Victoria, BC

The City of Victoria has worked with Pollinator Partnership Canada to integrate native plants into downtown community gardens and provide pollinator-focused community outreach at these sites. In 2017, through its Participatory Budgeting Project, the City of Victoria funded Border Free Bees and Pollinator Partnership Canada to install a pop-up native bee apiary at the Yates Street community garden. This pop-up native bee apiary provides a home to many types of tunnel nesting native bees by incorporating multiple bee home designs and materials in a captivating and appealing way. The apiary also features information on bees, pollination, and food security.



Bee Hotel Guidelines

Don’t prioritize bee hotels as nesting habitat over bare soil patches and plants that provide hollow stems for overwintering

Do use bee hotels as tools to educate people about the nesting needs of native bees

If you do choose to use bee hotels:

Keep bee hotels small, dispersed, and clean to minimize parasite colonization and diseases. Large bee hotels with many cavities serve as an easy buffet for pests and diseases of native bees. By dispersing small bee hotels throughout the landscape and keeping them clean, you minimize the risk of pests and diseases.

Use harvested native plant stems as tunnels in your bee hotel. By using stems from plants that are native to your region, you will more effectively mimic naturally occurring nesting spaces for native bees.

Ensure that one end of each tunnel is closed off. This will prevent predators from sneaking into the bee hotel, and it more closely mimics natural nesting sites.

Include a range of tunnel sizes. To accommodate a greater variety of native, cavity-nesting bees, include tunnels between 1 and 8 mm in diameter, and at least 15 cm in depth.

Clean cocoons and nesting structures, and store cocoons properly, each year to prevent disease and pest problems.

2.2

Engagement events and activities

2.2.1

Feature pollinator talks and workshops

Pollinator talks and workshops can engage residents of all ages across your community, and they can be held independently or as part of a broader themed series. Consider reaching out to professors, graduate students, native plant experts, environmental nonprofit workers, naturalists, and other members of your community with pollinator expertise. While there is no shortage of topics for pollinator-themed talks and workshops, a sample of options include regional pollinator diversity, gardening for pollinators, pollinators and food security, pollinator research projects, and local pollinator initiatives. But don't let us hold you back! Search for unique and engaging ways to share information about pollinators within your community.

Barrie, ON

The City of Barrie participated in several interactive webinars about Barrie's involvement in Bee City Canada in 2021 and 2022. In one webinar, they discussed Barrie's journey to becoming a Bee City and invited questions from the community about the process and what it means to be a Bee City. In another webinar, they discussed pollinator declines and what Barrie residents can do to support pollinators; this included an example native pollinator garden layout that residents could use to design a pollinator garden on their own property.

Kitchener, ON

The City of Kitchener included pollinator-focused talks in its Nature in the City series, a talk series at the Kitchener Public Library that features a variety of talks related to nature. In April of 2019, Kim Fellows of Seeds of Diversity gave a talk titled, The World of Pollinators: What's the Buzz?, in which she introduced people to pollinators and explained what people can do to support pollinators at home. Including pollinator talks in a broader series is a great way to introduce a wide range of people to pollinators.

Guelph, ON

Pollination Guelph, a volunteer-run nonprofit organization, has hosted an annual Pollination Symposium to educate the public about pollinators for over a decade. This event is a full day of presentations, networking, displays, and more.

2.2.2

Organize pollinator exhibits and day events

Museum exhibits and day events are a great way to teach kids about pollinators in an interactive setting while also providing pollinator facts that might interest parents. Consider setting up themed stations, including pollinator identification activities with identification keys and specimen displays, information about unique relationships between pollinators and some of our favourite foods (blueberries and chocolate, anyone?), and perspective taking games that get kids thinking like pollinators! Another approach is to feature pollinators at broader insect events, such as the Entomological Society of Ontario's Bug Day.

Region of Waterloo, ON

The Ken Seiling Waterloo Region Museum hosted the Amazing Pollinators exhibit, created by Minotaur Mazes in collaboration with the Florida Museum and the Xerces Society, from October 2021 to January 2022. The exhibit encouraged visitors to take the perspectives of six different pollinator groups, including bats, bees, beetles, birds, butterflies, and wasps as they navigated through a vibrant maze to succeed in 36 unique survival missions. The maze featured hundreds of interactive flowers across nine artificial ecosystems, including a rainforest and a desert. The survival missions introduced visitors to challenges faced by pollinators on a daily basis and the fascinating relationships that exist between pollinators and plants. Interactive graphics were also on display to educate visitors about the importance of pollinators and what they can do to help pollinators at home and in the community.

Guelph, ON

The Entomological Society of Ontario works with local partners to host an annual 'Bug Day'. In Guelph, it is hosted in August by the University of Guelph Arboretum. A fun, free, educational event for community members of all ages, it includes volunteer graduate students sharing knowledge aimed at instilling a love, curiosity, and appreciation for insects (including many pollinators). Bug Day activities include information and display booths, guided insect hikes, insect-themed obstacle courses, live insect zoos, insect-themed craft tables, and more.

2.2.3

Bring the community together for habitat creation and maintenance events

One of the best ways to educate and engage residents while simultaneously creating habitat is to provide land stewardship opportunities through planting and maintenance events. Events like these allow people to learn about pollinators and plants, and to support planting efforts. Creating pollinator habitat is more than simply sticking plants in the ground – it involves careful plant selection, site preparation, plant installation, and ongoing maintenance to ensure that the selected plants are set up to thrive. Involving residents in this process can help foster relationships between people and nature while also supporting pollinator habitat creation goals.

King Township, ON

The Community Services, Environmental Stewardship division of King Township works closely with the Parks Department and other community partners to provide hands-on planting experiences through environmental stewardship outreach and engagement. In 2021, King Township planted over 1,200 native trees and shrubs, and 2,000 wildflowers through community engagement events. The township also partnered with three different youth camps in 2021 to plant over 600 wildflowers at Cold Creek Conservation Area as a part of the Tallgrass Prairie restoration project.

2.2.3 Bring the community together for habitat creation and maintenance events

Guelph, ON

The City of Guelph has been working with community partners for many years on natural area stewardship. In 2019, for example, the city worked with community partners including Trees for Guelph and Ontario Public Research Interest Group to host 35 naturalization enhancement and restoration plantings at 31 sites, including parks and schools across the city. These events engaged over 7,500 volunteers, who planted more than 6,300 native tree and shrub seedlings, and over 4,000 native wildflower plugs. These biodiverse plantings included more than 40 species.

Kawartha Lakes, ON

The Kawartha Lakes Cycling Club and the Kawartha Lakes Pollinator Action Committee hosted a Biking for Pollinators event in the fall of 2021. Participants biked from Lindsay to Fenelon Falls and spread native wildflower seed bombs along the Victoria Rail Trail. The group hosted a second Biking for Pollinators event for the fall of 2022, where seeds were distributed between Lindsay and Omemee.

2.2.4

Invite the community to pollinator habitat tours

A great way to educate residents about pollinators is to get them out looking at plants. Whether you bring people to a native plant strip alongside a street in your community, or to a large naturalized area, people are often amazed by the diversity of pollinator life that can be found close to home. Have pollinator experts lead tours through gardens, orchards, and naturalized spaces, identifying pollinators that are out and about and providing commentary on pollinator ecology, behaviour, and relationships with native plants. Not only is this a great way to educate residents – it's also a great way to show off gardens and naturalized spaces that communities have worked hard to create. Consider creating tours with kids and families in mind by introducing simple pollinator and plant scavenger hunt checklists.

Cambridge, ON

The *rare* Charitable Research Reserve, a community-based urban land trust and environmental institute based in Cambridge, has provided guided habitat walks for people of all ages. During tours, participants are led through habitats preserved by *rare* and introduced to the flora and fauna throughout. Staff at rare even made virtual habitat tours available during COVID-19 when restrictions did not allow for in-person tours. In addition to tours, *rare* engages the community through community science and its 1,000 Gardens Project, which encourages building pollinator waystations along the Toronto-Waterloo Region corridor.

© Tom Woodcock, *rare* Charitable Research Reserve

Vancouver, BC

In 2022, the Native Bee Society of British Columbia hosted a Bee Safari in Riley Park Community Garden, with Lori Weidenhammer (aka. Madame Beespeaker) as a guide. This was a free family event during which participants learned about native bees, played Bee BINGO, and learned how to take photos of bees and add them to iNaturalist to help the Native Bee Society of British Columbia with research. The Riley Park Community Garden itself was designed with a focus on plants that benefit pollinators, and the Native Bee Society of British Columbia has hosted multiple workshops there that focus on planting for pollinators and learning about pollinators. Support for this event was provided through a TD Park People Grant.

2.2.5

Encourage participation in community science

Community science projects provide an opportunity for residents to learn about pollinators and other plants and animals while also helping scientists to monitor ecologies broadly in a way that is not possible without an abundance of enthusiastic surveyors[54]. Many platforms such as iNaturalist and Bumble Bee Watch allow people to upload images of plants and animals along with contextual information such as geographic location, time of day, and behavioural notes. Species are identified through machine learning and by experts. Encourage residents to engage in these programs on their own time, or even organize a community BioBlitz.

Montréal, QC

The Space for Life Insectarium is spearheading a community science program called Mission Monarch to document the monarch butterfly's reproductive success. The program is part of an international research and education effort aimed at saving migratory populations of this endangered species. People of all ages and backgrounds are encouraged to participate by taking four easy steps: 1) locating milkweed plants in their area, 2) verifying the presence of monarchs on the milkweed plants, 3) recording their observations, and 4) signing up to Mission Monarch online and submitting their observations.

Mississauga, ON

In the summer of 2020, Mississauga staff participated in the North American Butterfly Association's annual Butterfly Count Program. This involved training municipal staff on butterfly identification and surveying techniques. Involving municipal staff in community science is a great way to both support scientific efforts and educate municipal staff to become pollinator stewards in the community.

2.2.5 Encourage participation in community science

Brandon, MB

In 2022, the City of Brandon participated in the City Nature Challenge, an international event that encourages people to find and document nature in their cities. Through this challenge, residents were encouraged to use iNaturalist – an app used to map observations of wildlife – to document urban wildlife throughout Brandon from April 29th to May 2nd. This project helped to provide Brandon with a better understanding of pollinator diversity in the city. Bee City Brandon took the lead on promoting this event through social media and other outreach efforts.

Host a BioBlitz in Your Area, or Promote the Pollinator Week Bioblitz!

A Bioblitz is an event where people come together to find and identify as many species as possible in a specific area over a short period of time. It is a great way to quickly generate an understanding of pollinator diversity in sites of interest across your community, such as parks, farmland, or newly created pollinator habitat areas. Apps such as iNaturalist and Bumble Bee Watch make collecting photos and biological information about pollinators easy. To contribute to broader community science efforts, consider promoting the North American Pollinator Protection Campaign's annual Pollinator Week Bioblitz as well!

2.2.6

Partner with food festivals, restaurants, and bars to promote pollinators

Most of the crops grown for human consumption depend on or benefit from animal pollination, including coffee, blueberries, apples, and much more! By partnering with food festivals, restaurants, and bars, you can showcase to your community the role that pollinators play in creating the foods that we love. Consider launching a pollinators-and-food themed event or approaching restaurants and bars about creating a pollinator-themed dinner, dessert, or cocktail menu. Any time of year is a great time to promote pollinators, but pollinator menus could be especially popular during Pollinator Week in June. Barr Hill Gin's Bees' Knees Week is another excellent way to get bars and restaurants involved and promote pollinators to a wide audience.

Trent Hills, ON

A group of local residents have been organizing a food festival in Campbellford, Ontario, since 2014. Celebrating its strong agricultural heritage and the abundance of its thriving community, the Incredible Edibles Festival brings together chefs and entrepreneurs, artists, and artisans, musicians and performers, farmers and food producers, the community and its visitors. In 2018, a display tent dedicated to highlighting the past, present, and future of farming and food in Trent Hills integrated a new component about the importance of pollinators in maintaining our food system. As part of this display, visitors could participate in a survey to learn about the prevalence of pollinator gardens in the community. The Conservation Authority was invited to the festival to discuss pollinators, native plants, and environmentally conscious farming techniques. Volunteers wore bee-themed t-shirts and spent time discussing the goals of Bee City Canada with visitors. This was the launch of Trent Hills' journey to joining the Bee City Canada community. After that festival, the Municipality of Trent Hills and the Campbellford-Seymour Community Foundation picked up this initiative and completed the requirements to fulfil a Bee City designation in Trent Hills.

Bee's Knees Week

Bees' Knees Week is a charitable initiative launched by Barr Hill Gin that has shone a spotlight on the importance of bees to food and drink. Participating restaurants and bars serve the classic Bees' Knees cocktail to visitors and encourage them to share photos with the #beeskneesweek hashtag on social media. For each photo shared, Barr Hill Gin commits to planting 10 ft^2 of pollinator habitat; in 2021, this amounted to 4.5 acres of habitat. Barr Hill Gin provides a host of educational support materials to participating restaurants and bars at no cost, including table tents, posters, menu cards, pins, and coasters.

2.2.7

Feature pollinators at broader community events

While pollinator-focused exhibits, talks, workshops, tours, and planting events are all great ways to engage residents that have an interest in pollinators, it's important to attempt to reach out to the broader community too. Do this by meeting people where they're at. Set up a Bee City Canada booth at community events – such as Earth Day events, fall fairs, and Green Festivals – and engage with people about your community's participation in the Bee City Canada Program. Share the magic of pollinators with your community; tell them about what the community is doing and how they can get involved.

Timmins, ON

The City of Timmins has promoted its Bee City initiatives at the fall Welcome to Timmins Night each year since becoming a Bee City. In 2020, they introduced Bee City Timmins to the community through a virtual event due to COVID-19 restrictions. In 2021 and 2022, they were able to set up an in-person Bee City Timmins booth, hand out educational materials and bee colouring pages, and raffle off a Butterfly Box and 100 seedball kits.

© City of Timmins

Oshawa, ON

The City of Oshawa hosts an annual Peony Festival to celebrate horticulture, arts and heritage. In 2021, Oshawa's Peony Festival included a collaborative presentation from Teaching City Oshawa, Durham College, and Bee City Oshawa that highlighted Oshawa's Bee City Canada designation and provided viewers with lots of information about who the pollinators are, how they are important to ecosystems and agriculture, and what people can do to support them.

2.2.8

Seek community feedback through public consultations and surveys

Public consultation is an important step in the process of planning for future actions that support pollinators in your community, especially if you are in the process of creating a formal pollinator protection plan. Residents are often aware of community efforts that can feed into formal plans, and it is important to understand which actions residents most value as you decide on which actions your community will commit to taking. Consider hosting a public consultation event to gather feedback on proposed actions, and to collect ideas for future action. Another approach is to design and distribute a survey.

Collingwood, ON

The Town of Collingwood contracted Pollinator Partnership Canada in 2022 to support efforts to develop a formal Pollinator Protection Plan. As part of this work, Pollinator Partnership Canada collaborated with the town to design and distribute a survey with the goal to understand what residents would like to see in the plan. The Town of Collingwood also hosted a formal public engagement event at a local library, which provided an opportunity for residents to learn from Pollinator Partnership Canada about the breadth of actions that could be included in the plan, and to voice their preferences and knowledge about current community initiatives.

3 Celebration During Pollinator Week

Pollinator Week, which takes place the third week of June, provides a yearly dedicated time to celebrate the importance and beauty of pollinators, to build momentum on efforts taking place to create habitat, and to educate and engage community members. It is also the perfect time of year to draw attention to pollinators, with flowers beginning to bloom and many species of native pollinators taking flight across Canada. There is much that Bee City Communities can do to promote Pollinator Week. Get the word out through a proclamation, put up banners, signs, and displays, and launch a social media campaign. Engage the community by hosting a Pollinator Week festival, garden contest, film screening, or pollinator habitat opening ceremony! Perhaps most importantly, use this time to share with the community what you have accomplished, and make commitments for the year ahead.

We provide some ideas to promote and celebrate Pollinator Week in the pages that follow, but of course, many of the actions from the Habitat Creation and Management, and Education and Engagement sections are great ways to celebrate as well!

3.1 ACTIONS TO PROMOTE POLLINATOR WEEK

- 3.1.1 Issue a Pollinator Week proclamation or press release
- 3.1.2 Put up banners, signs, and displays
- 3.1.3 Launch a social media campaign

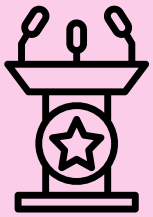
3.2 ACTIONS TO CELEBRATE POLLINATOR WEEK

- 3.2.1 Host a pollinator festival
- 3.2.2 Recognize community efforts through pollinator garden contests
- 3.2.3 Invite the community to a pollinator habitat opening ceremony
- 3.2.4 Create pollinator-themed public art
- 3.2.5 Launch pollinator photo contests on social media
- 3.2.6 Present a pollinator film screening
- 3.2.7 Provide pollinator-themed giveaways
- 3.2.8 Announce future projects and recruit volunteers

3.1

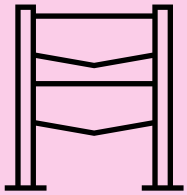
Actions to promote Pollinator Week

3.1.1 Issue a Pollinator Week proclamation or press release



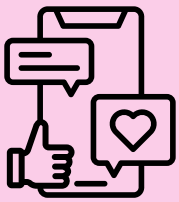
Issue a proclamation or a press release to draw attention to Pollinator Week in your community. Having your Mayor, Chief, or another appropriate official issue a proclamation on the first day of Pollinator Week each year is a great way to kick the week off and express your community's commitment to supporting pollinators.

3.1.2 Put up banners, signs, and displays



Banners, signs, and displays can draw attention to Pollinator Week in your community. Consider raising these at community entrances and buildings, main intersections, and parks.

3.1.3 Launch a social media campaign



Reach a wide audience during Pollinator Week with promotional and educational social media posts. Consider sharing pollinator facts and photography, and updating the community on pollinator actions.

3.2

Actions to celebrate Pollinator Week

3.2.1

Host a pollinator festival

A pollinator festival is a great way to engage children and adults in pollinator education and conservation. Consider hosting a festival in an area with plenty of pollinator habitat for residents to explore, or even make habitat creation one of the events for visitors to engage in! Provide opportunities for education, have games and activities for kids, such as face painting and colouring sheets, and invite local vendors, such as native plant nurseries and beekeepers.

Kitchener-Waterloo, ON

In 2019, the Cities of Kitchener and Waterloo hosted a joint pollinator festival with a wide variety of exhibitors and themed tents that focused on pollinators, plants, nature, hikes, and building bird and bee boxes. Going forward, Waterloo Region intends to host a yearly pollinator festival that will rotate between Kitchener, Waterloo, Cambridge, and Wellesley.

© City of Waterloo

Guelph, ON

In 2019, the City of Guelph and Pollination Guelph collaborated to host a Pollinator Week habitat creation and education event in Pollinator Park. The event involved planting wildflowers in the ReMediate Garden and adding to the native seed quilt, tours of the restoration site located on the former landfill, information about monitoring for pollinating insects, and activities for kids.

3.2.1 Host a pollinator festival

King Township, ON

To celebrate their commitment to supporting pollinators, King Township hosted a pollinator festival called The Buzz at Cold Creek Conservation Area in 2018. The event featured educational booths, interactive workshops, guest speakers, on-site apiary tours, food and drink vendors, and eco-activities such as wildflower planting and seed ball making. King Township developed a website to showcase the event activities and vendors, acknowledge sponsors, and provide directions. The Buzz event was a wonderful opportunity for organizations, businesses, and residents to come together and showcase their commitment to environmental initiatives within the community and work with the township to support education and awareness about the importance of pollinators.

3.2.2

Recognize community efforts through pollinator garden contests

Holding pollinator-themed garden contests, or including a pollinator category in broader garden contests, is a great way to recognize residents that are creating pollinator habitat on their own property. By providing participants with clear criteria about how to support pollinators through gardening, these contests can both educate people and generate excitement. Consider providing winners with signs and a gift card to a local native plant nursery.

Hamilton, ON

The Hamilton Monarch Awards is a community-driven collaborative effort between local experts and volunteers from Crown Point Garden Club, Hamilton Naturalists' Club, Royal Botanical Gardens, and Environment Hamilton that kicked off in 2016. Residents can apply with a written description and images of their garden, and a team of judges evaluate submissions based on plants, soil, water, and more. Monarch-level awards are given to gardeners who are progressing well in all categories, and Caterpillar-level awards are given to gardeners who are showing lots of promise. Awards are presented at City Hall and photos are added to the Monarch Awards website.

Kawartha Lakes, ON

In 2020, the City of Kawartha Lakes launched the Bee Hero Garden Challenge to encourage residents to support pollinators in Kawartha Lakes through gardens. Winners are recognized by the Deputy Mayor and invited to participate in a council meeting during which images and descriptions of each garden are showcased. Winners also receive a gift card to a local native plant nursery. The Bee Hero Garden Challenge has both recognized the contributions of Kawartha Lakes residents and promoted the importance of pollinators more broadly through local news coverage and social media activity.

3.2.3

Invite the community to a pollinator habitat opening ceremony

Host pollinator habitat opening ceremonies to introduce your community to recently completed habitat projects in your community, including pollinator gardens, edible gardens, orchards, and naturalized areas. Habitat opening ceremonies provide a great opportunity to educate the community about pollinators and plants, and to celebrate habitat accomplishments.

Mono, ON

In 2018, an official unveiling ceremony was held for the Mono Pollinator Garden. The Mono Pollinator Garden had been nearly three years in the making prior to its opening to the public, and residents were excited to stop by and take it in. Snacks and drinks were served as residents enjoyed walking through the garden.

3.2.4

Create pollinator-themed public art

Create pollinator-themed public art and unveil it during Pollinator Week. Projects can include vibrant pollinator murals, pollinator sculptures, unique bee hotels, and much more! Art displays capture attention, show people how beautiful pollinators and native plants can be, and encourage residents to look into pollinator initiatives in your community.

Toronto, ON

In 2016, the City of Toronto commissioned a mural of the Bicoloured Agapostemon (*Agapostemon virescens*), a green metallic sweat bee that is now Toronto's Official Bee, to celebrate Pollinator Week and becoming Canada's first Bee City. The mural was the result of a partnership between Burt's Bees, and the city's StreetARToronto and Live Green Toronto programs. Painted by Toronto artist Nick Sweetman, the mural is a stunning 65' long by 35' high reminder of the importance of pollinators in Toronto's urban environment. The mural is located at the corner of Bloor Street West and Howland Avenue.


© Nick Sweetman

Guelph, ON

In 2014, local artist Christina Kingsbury began collaboration with Pollination Guelph and poet Anna Bowen to make a quilt for the ReMediate Garden at the decommissioned Eastview Landfill in Guelph. The 2,800 ft^2 quilt was made from recycled paper and embedded with native seeds. As the quilt disintegrated, it yielded a native garden that supports pollinators in the area. Anna Bowen has also produced a series of poems that document the history of the site and the making of the quilt.

3.2.4 Create pollinator-themed public art

King Township, ON

In 2022, King Township Community Services staff gathered with the mayor to showcase “Flutterby the Butterfly,” the first Pollinator Community Art Project in the township. With 250 individual pieces, each hand-painted by King citizens, visitors, staff, and students, the butterfly-shaped puzzle was truly a community effort. The initiative, created by King Heritage & Culture, in partnership with King Environmental Stewardship, uses the arts to bring awareness to pollinators and their habitat.

3.2.5

Launch pollinator photo contests on social media

Launching a pollinator photo contest on social media is a great way to get residents outside and engaging with pollinators, and also to feature lots of local pollinator species on social media. Have residents post their pictures on social media and assemble a team of judges to go through the submissions and select winners. Consider providing winners with a gift card to a local native plant nursery or other fun pollinator-themed prizes.

Barrie, ON

The City of Barrie initiated the Pic-a-Pollinator contest in 2020 during Pollinator Week. Through this contest, residents are encouraged to submit pictures of pollinators that have been taken in Barrie. The winner receives a prize and has their photo featured on Barrie's Pollinator Week website and social media channels.

© Cara Wilson, City of Barrie's 2021 Pic-A-Pollinator

3.2.6

Present a pollinator film screening

Documentary film screenings are an engaging way to educate residents about pollinators. Host the screening at a community building such as a local library or community centre, or stream it online to allow for residents to watch from home. Consider inviting local experts to host a Q&A session at the end of the screening.

Kitchener-Waterloo, ON

In 2019, the Cities of Kitchener and Waterloo promoted a joint Bees in The City pollinator film night at the Kitchener Public Library. The event featured a showing of three short pollinator-themed films and a Q&A period with local experts. Various displays provided educational resources relating to pollinators and native plants for attendees.

© Tiffani Harrison

Pollinators Under Pressure

Pollinators Under Pressure is an award-winning 15-minute documentary narrated by Leonardo DiCaprio that tells the story of pollinators in a succinct and engaging way. It is a collaborative effort of educators, scientists, and filmmakers to produce an educational call to action about the plight of pollinators and what humanity can do to protect them.

3.2.7

Provide pollinator-themed giveaways

Pollinator week is a great time to provide pollinator-themed giveaways! You may want to give out native plants and seeds, pollinator garden signage, or even unique items such as gardening gloves, tablecloths, and others with the Bee City Canada logo and your community logo to drive pollinator awareness. Give away items to residents and public institutions such as schools.

Calgary, AB

In 2021, the City of Calgary provided free wildflower seed packages during Pollinator Week. The seed mix included native wildflowers and other pollinator-friendly plants that have naturalized to Calgary's climate, including blanket flower, blue flax, yellow prairie coneflower and purple coneflower. The city also provided information about why native flowering plants are important and how to plant the seeds.

Waterloo, ON

The City of Waterloo has designed unique promotional Bee City Waterloo items to give away at public events and during Pollinator Week. These items include Envirostik pencils, seed packets of herbs and native wildflowers, crafts, and educational handouts including a pollinator flower poster.

3.2.8

Announce future projects and recruit volunteers

Once you have people's attention through Pollinator Week events and giveaways, engage them further by announcing your plans for the following year and recruiting volunteers to help out with new projects. The best time to have residents join the Bee City Canada movement and commit to future action is when you've already got their attention!

Tiny Township, ON

Tiny Township sets up a pollinator display in the lobby of the municipal building during Pollinator Week. The display includes resources about pollinators, information about pollinator initiatives in Tiny Township, and information about existing volunteer opportunities and how to get involved.

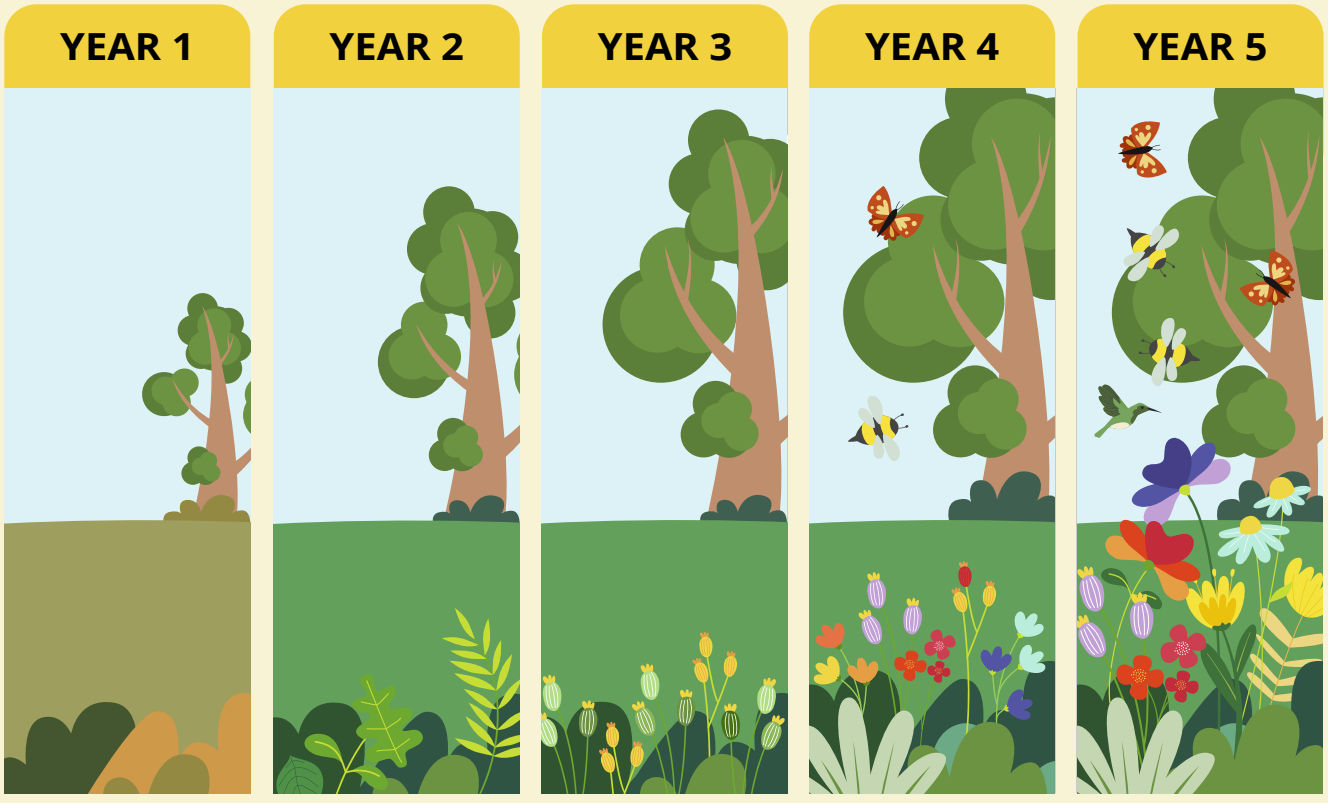
© Jen Howell

Bee City Canada's Pollinator Protection Pledge

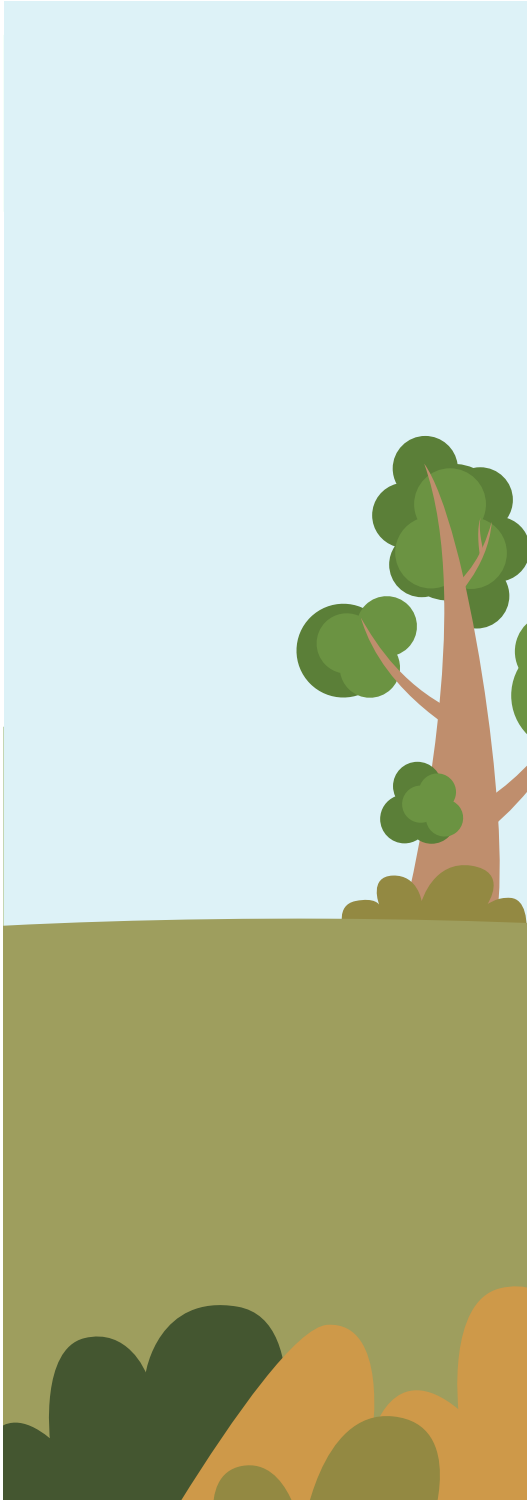
One simple way to educate and engage residents during Pollinator Week is to promote the Bee City Canada Pollinator Protection Pledge. People that take the pledge commit to creating habitat for pollinators and promoting the protection of pollinators within the community.

Suggested five-year action plan for new Bee City Communities

Through our action framework, we have provided an extensive overview of actions that Bee City Communities can take to protect and promote pollinators. We recognize, however, that this may be a lot to choose from, especially for communities beginning their journey. Given this, we feel that it is important to provide structured advice about which actions to take and when as a new Bee City Community. In the pages that follow, we provide a list of actions that we recommend new Bee City Communities try to take during each of their first five years as a member, referring directly to the action framework where more can be read about each action. Depending on where your community is at in its journey, you may already be engaged in many of the actions that we mention below. Depending on the size and the structure of your community, some actions may be more or less suitable. Please take the below recommendations and adapt them based on your community's unique context.



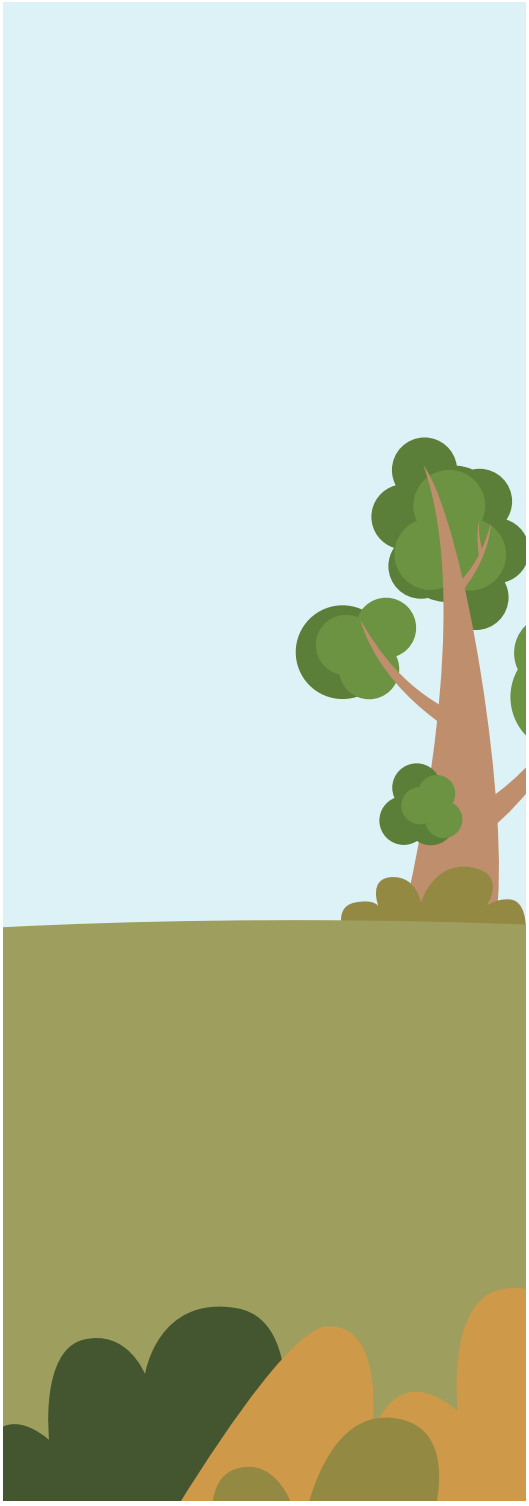
Year One: Planting seeds



HABITAT CREATION AND MANAGEMENT

- Create a map of the pollinator habitat in your community and note where habitat gaps exist (1.2.9). This can be used strategically throughout your journey as a Bee City Community to create a pollinator habitat network (1.1.3).
- Conduct a review of community policies and practices that relate to pollinators and note where improvements can be made in the coming years. Of course, don't hesitate to ask the Bee City Canada team for guidance on this – we're here to help! We recommend including the following in your review:
    - Integrated vegetation management practices (1.2.1)
    - Policies related to chemical applications (1.2.2)
    - Habitat standards and recommendations for urban development (1.2.3)
    - Community garden practices (1.2.4)
    - Policies related to urban beekeeping (1.2.5)
    - Policies related to artificial nighttime light usage (1.2.6)
    - Yard waste collection practices (1.2.7)
    - Policies related to residential yards (1.3.1)
    - Policies related to planting on boulevards (1.3.2)
    - Policies and practices related to agriculture (1.3.8)
- Try to get your hands dirty with at least one habitat project! We recommend creating a native plant garden in a prominent location, or in a gap area identified on your pollinator habitat map (1.1.1). Include educational signage once it's finished (2.1.3)!

Year One: Planting seeds



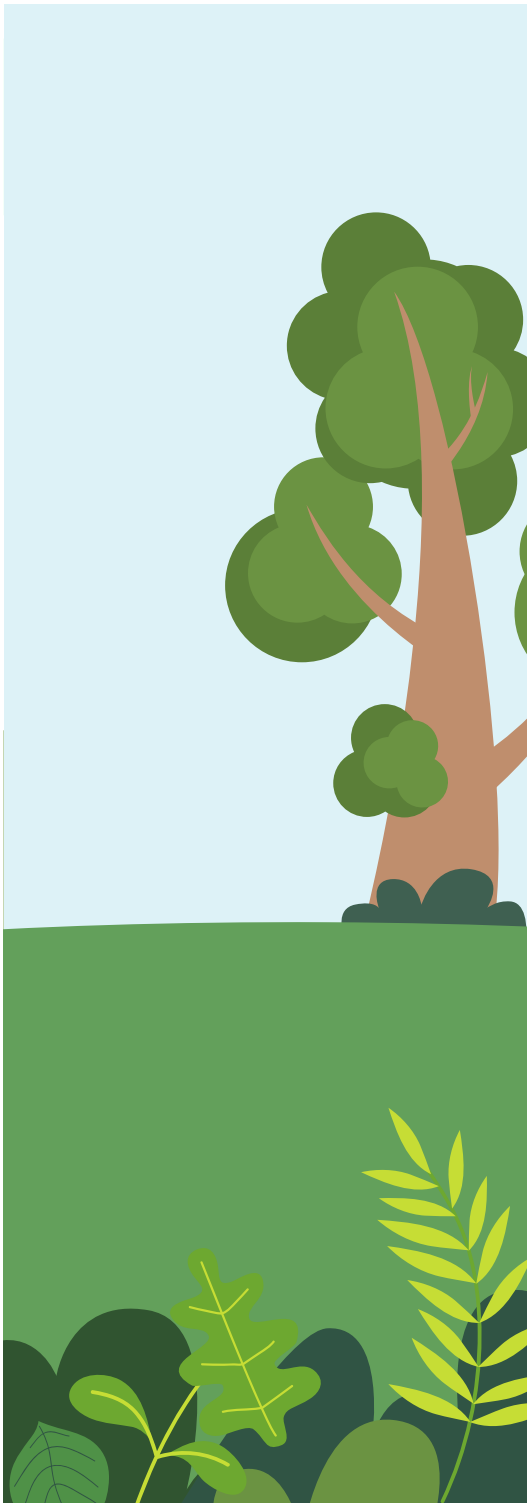
EDUCATION AND ENGAGEMENT

- Promote your Bee City Canada membership through media channels and signage in prominent locations, such as at City Hall or community entrances (2.1.1 & 2.1.3), and at broader community events, such as Earth Day events or fall fairs (2.2.7).
- Create a page on your community's website, if you have one, to provide residents with information about pollinators, the actions your community is taking and/or planning to take to support pollinators, and how they can get involved (2.1.1 & 2.1.2).
- As you message to the community about your Bee City Canada membership, provide opportunities for residents to sign up to volunteer for future pollinator protection and promotion efforts, such as habitat creation and education events (3.2.8).
- Conduct a public consultation or survey to discuss pollinator initiatives with residents and learn which pollinator initiatives are most important to the community (2.2.8).

CELEBRATION DURING POLLINATOR WEEK

- Issue a Pollinator Week proclamation or press release (3.1.1).
- Put up banners, signs and displays and post on social media to promote Pollinator Week to residents (3.1.2 & 3.1.3).
- Host one or more public events, such as a garden contest (3.2.2), a pollinator habitat opening ceremony (3.2.3), a film screening (3.2.6), or a kick-off community consultation to discuss pollinator plans as a Bee City Community (2.2.8)

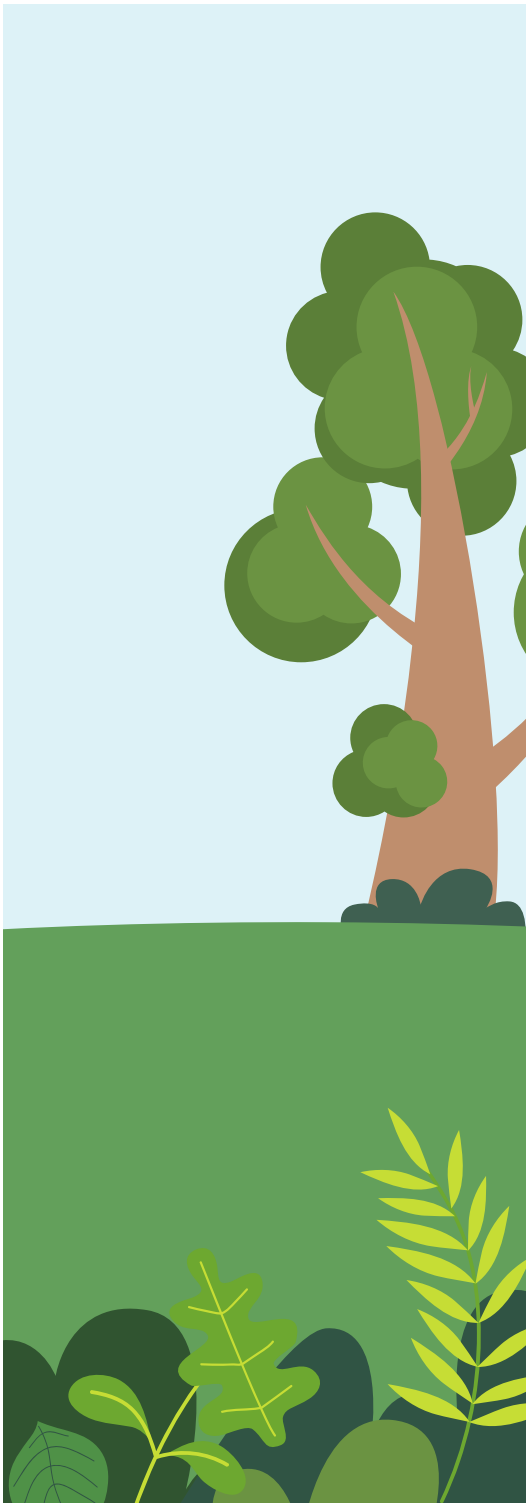
Year Two: Establishing roots



HABITAT CREATION AND MANAGEMENT

- Now that you've got a map of pollinator habitat in your community, and a first native plant pollinator garden, plant additional gardens strategically with the intention of filling gaps and creating habitat networks (1.1.3). Add educational signage to new habitat sites in as many cases as possible (2.1.3).
- Now that you've completed a review of community policies and practices, draft concrete plans to make these policies and practices more pollinator-friendly where possible.
- Develop a list of plants that are native to your area and provide value to pollinators that the community can refer to during future pollinator habitat projects (1.1.6). Include a diverse range of plants that will be appropriate across environmental conditions and support a diverse range of pollinators across seasons, such as:
    - Perennials, shrubs, and trees
    - Plants that thrive in full shade, partial shade, and full sun
    - Plants that bloom at different times during spring, summer, and fall
    - Plants that produce flowers of different colours, shapes and sizes
    - Plants that are drought-tolerant and salt-tolerant

Year Two: Establishing roots



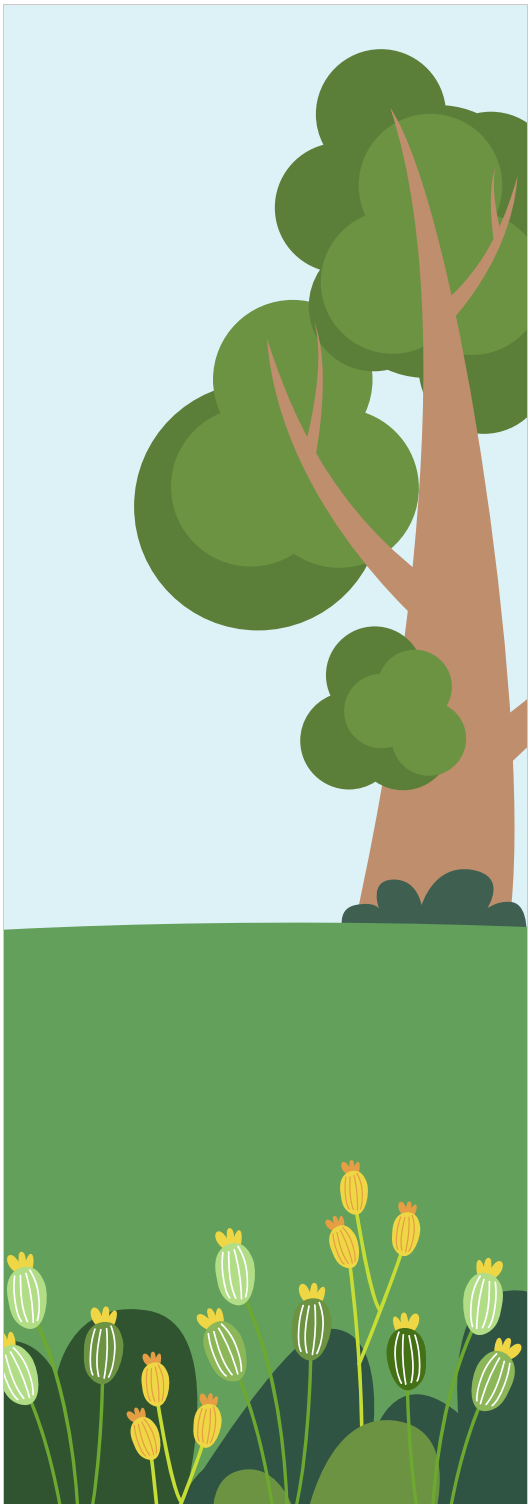
EDUCATION AND ENGAGEMENT

- Continue to engage the community about pollinators at broader community events, and build your team of volunteers. Provide opportunities for volunteers to get involved in any habitat creation and/or habitat management efforts this year (2.2.3).
- Host at least one pollinator-focused talk or workshop (2.2.1). We highly recommend that you host a native plant gardening workshop to equip residents with the knowledge and skills needed to create habitat at home, or a community consultation event to discuss pollinator-related plans with residents.
- While you're still early in your Bee City Community journey, we highly recommend providing the people leading your pollinator team with the opportunity to participate in Pollinator Partnership Canada's Pollinator Stewardship Certification Training (2.1.4). This training will provide your pollinator team with foundational knowledge that will be applied to pollinator initiatives in your community for years to come.

CELEBRATION DURING POLLINATOR WEEK

- Issue a Pollinator Week proclamation or press release, and take steps to promote Pollinator Week to residents (3.1).
- This year, consider hosting a series of public events throughout the week. Try hosting at least one event that you didn't try last year; for example, host a garden contest (3.2.2), a pollinator habitat opening ceremony (3.2.3), or a film screening (3.2.6).

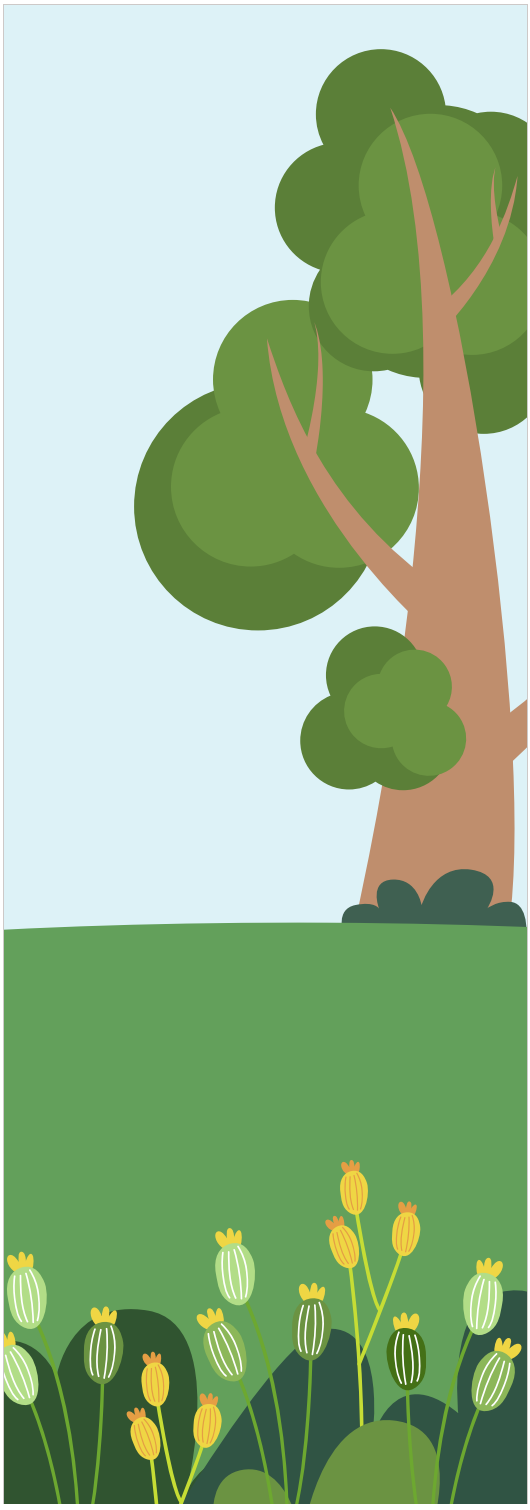
Year Three: Reaching skyward



HABITAT CREATION AND MANAGEMENT

- As you continue to build pollinator habitat networks in your community (1.1.3), include an edible garden, orchard, or food forest to serve pollinators and people at the same time (1.1.2). Many plants that provide us with fruits and nuts provide food to pollinators in the form of nectar (carbohydrates) and pollen (protein). Include educational signage next to edible gardens, orchards, and food forests that focuses on the relationship between pollinators and the foods that we enjoy (2.1.3).
- Now that you have drafted plans to change policies and practices in your community to better serve pollinators, work toward implementing them. Here is a sample of policies and practices that we recommend you start with, if appropriate, in your community:
    - Integrated vegetation management practices (1.2.1)
    - Policies related to chemical applications (1.2.2)
    - Habitat standards and recommendations for urban development (1.2.3)
    - Policies related to residential yards (1.3.1)
    - Policies related to planting on boulevards (1.3.2)
- Promote pollinator garden certification programs, such as Pollinator Partnership's Bee Friendly Gardening program, to engage residents to contribute to your community's habitat creation goals (1.3.6).

Year Three: Reaching skyward



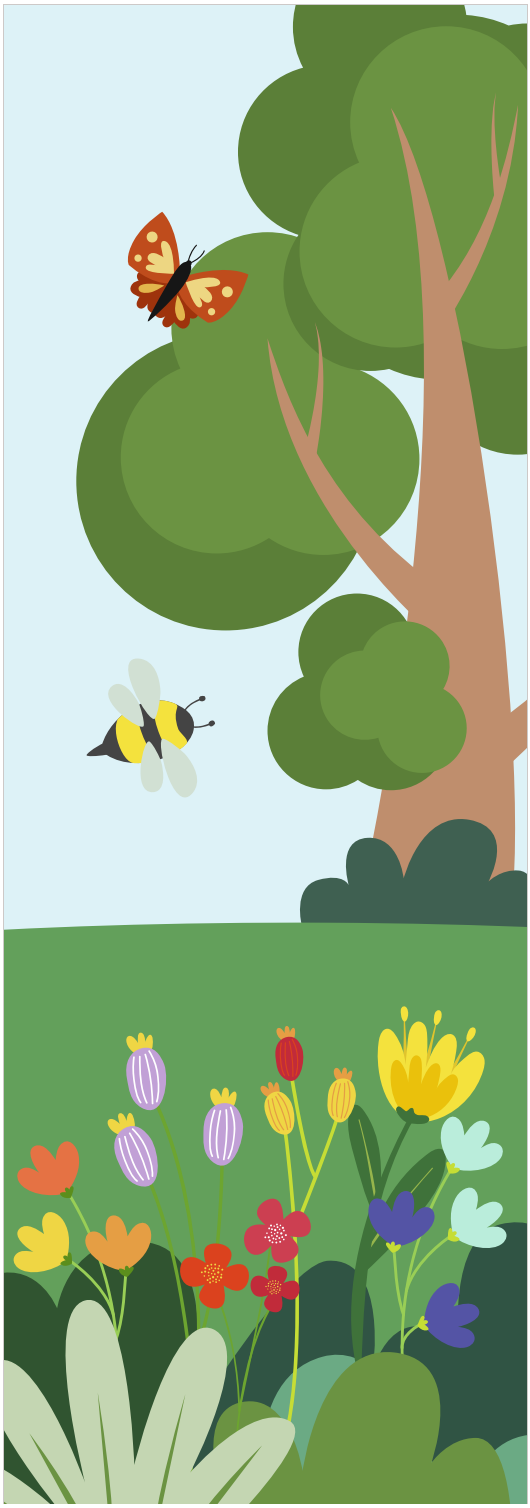
EDUCATION AND ENGAGEMENT

- Take steps where possible to provide educational opportunities about pollinators to youth through schools, camps, and other means (2.1.5). We especially recommend providing opportunities for youth to get involved by planting gardens and observing plant-pollinator interactions. Consider providing funds and support to schools and camps to do this.
- Host at least one pollinator-focused talk or workshop that is different from the one that occurred last year (2.2.1). For example, if you hosted a community consultation last year, consider hosting a native plant gardening workshop this year.
- Promote opportunities for residents to observe local pollinators, such as through habitat tours (2.2.4) or community science projects (2.2.5).
- Continue to recruit volunteers and provide opportunities for them to contribute to pollinator habitat and/or education efforts in the community.

CELEBRATION DURING POLLINATOR WEEK

- Issue a Pollinator Week proclamation or press release, and take steps to promote Pollinator Week to residents (3.1).
- This year, consider hosting a Pollinator Week festival during the weekend, including lots of activities and opportunities to observe pollinators in habitat areas (3.2.1).

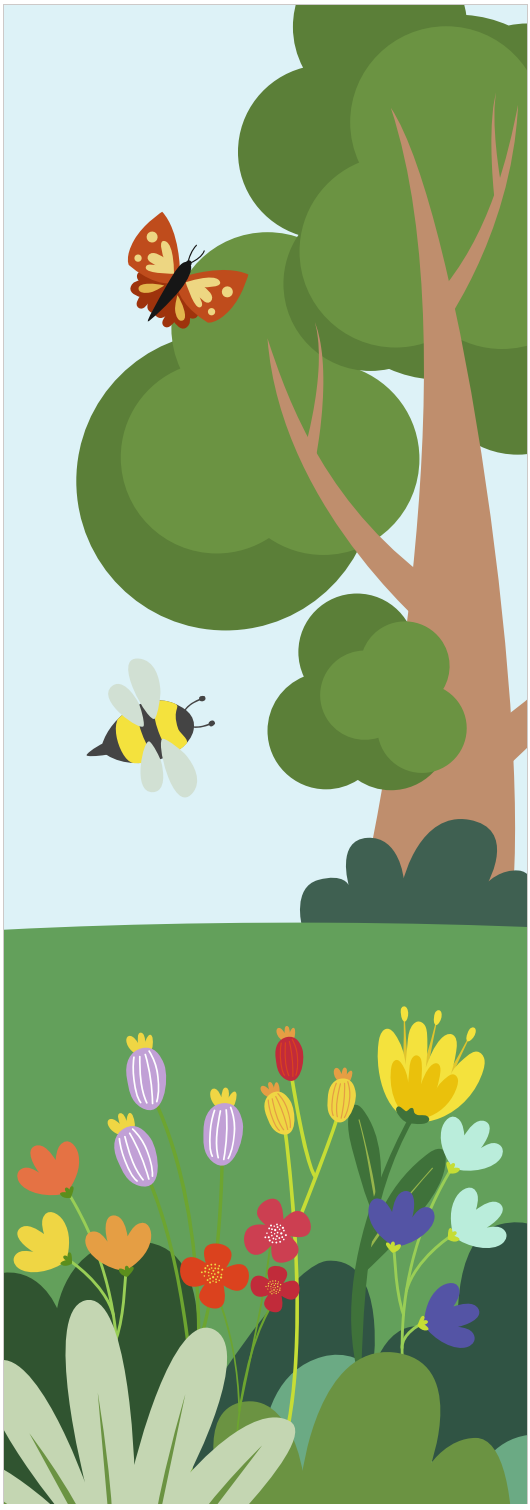
Year Four: Blooming brightly



HABITAT CREATION AND MANAGEMENT

- As you continue to build pollinator habitat networks in your community (1.1.3), and if you have the resources, engage in a larger habitat naturalization project. This could be done in a park, along a hydro corridor, or along a highway, for example (1.1.4). These are great areas to include educational signage in, as residents often have more questions about large naturalized spaces than they do about small gardens.
- Continue to make changes to policies and practices where you have identified ways in which pollinators can be better served in your community.
- Continue to promote pollinator garden certification programs (1.3.6), and initiate at least one native seed library to facilitate seed exchange and community efforts to create pollinator habitat (1.3.7).
- Dedicate resources to supporting resident habitat creation efforts by providing native plant giveaways and/or subsidized sales (1.3.4).

Year Four: Blooming brightly



EDUCATION AND ENGAGEMENT

- Message to residents about what you have done to protect and promote pollinators in the community over the past three years, including new habitat areas, changes to any policies and practices that support pollinators, and educational efforts (2.1.1 & 2.1.2).
- Collaborate with a Farmer's Market and/or other local groups to organize an event that showcases the many ways in which pollinators contribute to the foods that we enjoy. An interesting approach to education at these types of events is to pair different foods with the animals that pollinate them (2.2.6).
- Continue to recruit volunteers and provide opportunities for them to contribute to pollinator habitat and/or education efforts in the community.

CELEBRATION DURING POLLINATOR WEEK

- Issue a Pollinator Week proclamation or press release, and take steps to promote Pollinator Week to residents (3.1).
- Host a Pollinator Week festival, a series of events throughout the week, or both (3.2).

Year Five: Continued flourishing

HABITAT CREATION AND MANAGEMENT

- Continue to create and manage habitat, building your pollinator habitat network (1.1.3)
- If you have not already done so, consider dedicating resources and space, such as in greenhouses, to propagating native plants for use in community habitat projects (1.1.5). Doing so can bring down the cost of habitat network planting efforts, and make it easier to supply native plants to members of the community.
- Continue to make changes to policies and practices where you have identified ways in which pollinators can be better served in your community.
- Continue to promote pollinator garden certification programs (1.3.6), manage seed libraries (1.3.7), and provide native plant giveaways and/or subsidized sales (1.3.4). In addition, consider providing pollinator habitat grants and/or rebates (1.3.3), and pollinator-friendly garden consultations (1.3.5).

Year Five: Continued flourishing

EDUCATION AND ENGAGEMENT

- Organize a pollinator exhibit to be featured at a local museum, or organize a day event that features pollinators, such as hosting a Bug Day in your community (2.2.2).
- Continue to provide talks and workshops to educate the community about pollinators, community pollinator initiatives, and how people can get involved (2.2.1).
- Continue to recruit volunteers and provide opportunities for them to contribute to pollinator habitat and/or education efforts in the community.

CELEBRATION DURING POLLINATOR WEEK

- Issue a Pollinator Week proclamation or press release, and take steps to promote Pollinator Week to residents (3.1).
- Whether you have discovered that you prefer to host an annual Pollinator Week festival, a series of events throughout the week, or both, you are likely settling into a rhythm by this point. Keep this tradition going while continuously finding unique ways to engage residents year after year (3.2).

Communities highlighted

Resources

1. HABITAT CREATION AND MANAGEMENT

1.1 HABITAT PLANNING AND CREATION

1.1.1 CREATE NATIVE PLANT POLLINATOR GARDENS

POLLINATOR PARTNERSHIP CANADA'S ECOREGIONAL PLANTING GUIDES

https://pollinatorpartnership.ca/en/ecoregional-planting-guides

POLLINATOR PARTNERSHIP CANADA'S FIND YOUR ROOTS PLANT SELECTION TOOL

https://pollinatorpartnership.ca/en/find-your-roots

BEE CITY CANADA'S NATIVE PLANT NURSERY DIRECTORY

https://beecitycanada.org/pollinator-resources/native-plant-directory/

A GARDEN FOR THE RUSTY-PATCHED BUMBLEBEE: CREATING HABITAT FOR NATIVE POLLINATORS: ONTARIO AND GREAT LAKES EDITION BY LORRAINE JOHNSON AND SHEILA COLLA

https://douglas-mcintyre.com/products/9781771623230

1.1.2 CREATE EDIBLE GARDENS, ORCHARDS, AND FOOD FORESTS

THE CITY OF GRANDE PRAIRIE'S EDIBLE LANDSCAPING POLICY

https://cityofgp.com/city-government/bylaws-policies-procedures/policy-and-procedure-directory?field_policy_procedure_number_value=212

GRAND RIVER FOOD FORESTRY

https://www.grandriverfoodforestry.com/

1.1.3 CREATE HABITAT NETWORKS

THE RICHMOND NECTAR TRAIL

https://www.richmond.ca/sustainability/stewardship/communityaction/nectartrail.htm

PROJECT SWALLOWTAIL

https://pollinatorpartnership.ca/en/project-swallowtail

1.1.4 NATURALIZE LARGE HABITAT AREAS

BEE CITY CANADA'S WEBINAR ON THE CANYON MEADOWS BEE BOULEVARD

https://www.youtube.com/watch?v=zpymwjMCIQg&t=4009s

POLLINATOR PARTNERSHIP CANADA'S ROADSIDES HABITAT GUIDE

https://pollinatorpartnership.ca/assets/generalFiles/LandManagerGuide.Ontario.Roadside.FINAL.PDF

POLLINATOR PARTNERSHIP CANADA'S UTILITY LANDS HABITAT GUIDE

https://pollinatorpartnership.ca/assets/generalFiles/LandManagerGuide.Ontario.Corridor.FINAL.PDF

THE RIGHTS-OF-WAY AS HABITAT WORKING GROUP RESOURCES LIBRARY

https://rightofway.erc.uic.edu/resources/

THE MEADOWAY

https://themeadoway.ca/

1.1.5 DEDICATE RESOURCES TO NATIVE PLANT PROPAGATION

POLLINATOR PARTNERSHIP CANADA'S ECOREGIONAL PLANTING GUIDES

https://pollinatorpartnership.ca/en/ecoregional-planting-guides

NATIVE PLANT NETWORK PROPAGATION PROTOCOL DATABASE

https://npn.rngr.net/propagation

1.1.6 DEVELOP HABITAT GUIDES AND TOOLS TO STREAMLINE PROJECTS

THE CITY OF CALGARY'S HABITAT RESTORATION PROJECT FRAMEWORK

https://www.calgary.ca/content/dam/www/csps/parks/documents/construction/habitat-restoration-framework.pdf

THE CITY OF CALGARY'S SEED MIXES DOCUMENT

https://www.calgary.ca/content/dam/www/csps/parks/documents/planning-and-operations/seed-mixes.pdf

THE CITY OF CALGARY'S PLANT LISTS DOCUMENT

https://www.calgary.ca/content/dam/www/csps/parks/documents/planning-and-operations/plant-lists.pdf

THE CITY OF CALGARY'S SOIL HANDLING RECOMMENDATIONS

https://www.calgary.ca/CSPS/Parks/Documents/soil-handling-recommendations.pdf

POLLINATOR PARTNERSHIP CANADA'S ECOREGIONAL PLANTING GUIDES

https://pollinatorpartnership.ca/en/ecoregional-planting-guides

POLLINATOR PARTNERSHIP CANADA'S FIND YOUR ROOTS PLANT SELECTION TOOL

https://pollinatorpartnership.ca/en/find-your-roots

1.2 HABITAT MANAGEMENT PRACTICES

1.2.1 USE INTEGRATED VEGETATION MANAGEMENT (IVM)

POLLINATOR PARTNERSHIP'S BEST MANAGEMENT PRACTICES FOR POLLINATORS

https://www.pollinator.org/canada/bmp

THE CANADIAN WILDLIFE FEDERATION'S MANAGING RIGHTS-OF-WAY FOR POLLINATORS: A PRACTICAL GUIDE FOR MANAGERS

https://cwf-fcf.org/en/resources/downloads/booklets-handouts/ROW_restoration_guide_en.pdf

THE CANADIAN WILDLIFE FEDERATION'S RETHINKING MOWING HANDOUT

https://cwf-fcf.org/en/explore/monarchs/Helping-Monarchs-and-Pollinators-Rethinking-Mowing.pdf

THE RIGHTS-OF-WAY AS HABITAT WORKING GROUP RESOURCES LIBRARY

https://pollinatorpartnership.ca/en/find-your-roots

THE CITY OF BRAMPTON'S DON'T MOW, LET IT GROW INITIATIVE

https://www.brampton.ca/EN/residents/GrowGreen/Pages/Dont-Mow-Let-It-Grow.aspx

1.2.2 RESTRICT CHEMICAL APPLICATIONS THAT CAN NEGATIVELY IMPACT POLLINATORS

ONTARIO'S COSMETIC PESTICIDES BAN

https://news.ontario.ca/en/backgrounder/3562/ontarios-cosmetic-pesticides-ban

THE CITY OF CALGARY IPM PLAN

https://www.calgary.ca/csps/parks/planning-and-operations/pest-management/managing-pests.html

THE CANADIAN NURSERY LANDSCAPE ASSOCIATION'S REPORT: PESTICIDE REGULATIONS ACROSS CANADA

https://cnla.ca/learn/pesticide-regulations-across-canada

1.2.3 SET HABITAT STANDARDS AND RECOMMENDATIONS FOR URBAN DEVELOPMENT

THE TORONTO GREEN STANDARD

https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/

THE TOWN OF COLLINGWOOD'S DOWNTOWN GARDENS MASTER PLAN

https://collingwood.civicweb.net/document/102643/?utm_source=collingwoodtoday.ca&utm_campaign=collingwoodtoday.ca%3A%20outbound&utm_medium=referral

1.2.4 PROMOTE POLLINATOR-FRIENDLY PRACTICES IN COMMUNITY GARDENS

TORONTO AND REGION CONSERVATION AUTHORITY'S CREATING HABITAT: A GUIDE FOR COMMUNITY GROUPS

https://trca.ca/app/uploads/2016/04/2602-Stewardship_Habitat-SinglePg_PRESS.pdf

TORONTO AND REGION CONSERVATION AUTHORITY'S MAINTAINING YOUR POLLINATOR HABITAT: A GUIDE FOR COMMUNITY GROUPS AND GARDENERS

https://trca.ca/app/uploads/2016/04/PollinatorMaintenanceGuide_WEB.pdf

A GARDEN FOR THE RUSTY-PATCHED BUMBLEBEE: CREATING HABITAT FOR NATIVE POLLINATORS: ONTARIO AND GREAT LAKES EDITION BY LORRAINE JOHNSON AND SHEILA COLLA

https://douglas-mcintyre.com/products/9781771623230

DEPAVE PARADISE

https://depaveparadise.ca/

1.2.5 RESTRICT URBAN HONEY BEEKEEPING

THE CITY OF VANCOUVER'S HONEY BEEKEEPING MYTHS PAGE

https://vancouver.ca/people-programs/beekeeping.aspx#myths

THE CITY OF TORONTO'S WILD ABOUT BEES DOCUMENT

https://www.toronto.ca/wp-content/uploads/2020/10/8fb9-WildAboutBees_Web.pdf

1.2.6 MINIMIZE IMPACTS OF ARTIFICIAL NIGHTTIME LIGHT

THE INTERNATIONAL DARK SKY ASSOCIATION

https://www.darksky.org/

THE CITY OF TORONTO'S BEST PRACTICES FOR EFFECTIVE LIGHTING

https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/design-guidelines/best-practices-for-effective-lighting/

THE TORONTO GREEN STANDARD

https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/

THE CALGARY ROADS STREET LIGHTS RETROFIT PROJECT

https://calgary.rasc.ca/lp/commun_retro.html

1.2.7 DELAY YARD WASTE COLLECTION

THE CITY OF TORONTO'S TIPS FOR CREATING A POLLINATOR-FRIENDLY GARDEN

https://vancouver.ca/people-programs/beekeeping.aspx#myths

PROPOSED TORONTO AMENDMENT TO DELAY YARD WASTE COLLECTION

https://www.toronto.ca/legdocs/mmis/2021/ie/bgrd/backgroundfile-168370.pdf

1.2.8 COMPLETE A NATURAL ASSET INVENTORY

THE TOWN OF OKOTOKS' NATURAL ASSET INVENTORY

https://www.okotoks.ca/sites/default/files/2020-12/Okotoks%20Natural%20Asset%20Inventory%20Report.pdf

THE MUNICIPAL NATURAL ASSETS INITIATIVE

https://mnai.ca/

THE MIISTAKIS INSTITUTE'S MUNICIPAL NATURAL INFRASTRUCTURE ASSET INVENTORY GUIDE

https://www.rockies.ca/files/reports/FINAL_Municipal_NI_asset_Inventoryv2.pdf

1.2.9 CREATE A POLLINATOR HABITAT MAP

THE HAMILTON POLLINATOR PARADISE PROJECT'S INTERACTIVE HABITAT MAP

https://www.arcgis.com/apps/Cascade/index.html?appid=be7f2784801540e7b3798cdd4144dab7

POLLINATE COLLINGWOOD'S POLLINATOR GARDEN STORY MAP

https://storymaps.arcgis.com/stories/acab735b77cd46fbbd3837c0977c6b1f

MAP OF COMMUNITY GARDENS AND POLLINATOR/WILDLIFE GARDENS IN GUELPH

https://cityofguelph.maps.arcgis.com/apps/dashboards/b32c697c9cff4078b617afdac05189de

THE PETERBOROUGH POLLINATORS GARDEN MAP

http://www.peterboroughpollinators.com/garden-map/

1.3 EMPOWERING AND INCENTIVIZING RESIDENTS TO CREATE HABITAT

1.3.1 MODIFY LAWN BYLAWS TO EMPOWER RESIDENTS TO CREATE HABITAT

BEE CITY CANADA'S WEBINAR ON TORONTO'S UPDATED BYLAW

https://www.youtube.com/watch?v=42hT43j_FDY&t=1309s

THE ECOLOGICAL DESIGN LAB'S REPORT ON CULTIVATING SUPPORT FOR URBAN BIODIVERSITY THROUGH MUNICIPAL CODES, AND ITS TOOLKIT FOR MUNICIPALITIES

https://ecologicaldesignlab.ca/project/urban-biodiversity-studio/

THE ECOLOGICAL DESIGN LAB'S MODEL BYLAW

https://ecologicaldesignlab.ca/project/model-by-law/

1.3.2 ENABLE AND ENCOURAGE RESIDENTS TO PLANT ON BOULEVARDS

BLOOMING BOULEVARDS

http://www.bloomingboulevards.org/

THE CITY OF VICTORIA'S BOULEVARD GARDENING GUIDELINES

https://www.victoria.ca/assets/Departments/Parks~Rec~Culture/Parks/Documents/Boulevard%20Gardening%20Guidelines_e.pdf

THE CITY OF VICTORIA'S GROWING IN THE CITY GRANTS

https://www.calgary.ca/content/dam/www/csps/parks/documents/planning-and-operations/plant-lists.pdf

THE CITY OF OSHAWA'S BOULEVARD BYLAW

https://www.oshawa.ca/en/Document-Feeds/General-By-Laws/BoulevardBy-law136-2006.pdf

THE CITY OF MISSISSAUGA'S BOULEVARD GARDEN PERMIT

https://www.mississauga.ca/services-and-programs/transportation-and-streets/roads-and-sidewalks/apply-for-a-boulevard-garden-permit/

1.3.3 PROVIDE POLLINATOR HABITAT GRANTS AND REBATES

THE CITY OF TORONTO'S POLLINATETO COMMUNITY GRANTS

https://www.toronto.ca/services-payments/water-environment/environmental-grants-incentives/pollinateto-community-grants/

THE TOWN OF OKOTOKS' WATER CONSERVATION REBATE PROGRAM

https://www.okotoks.ca/your-community/green-living/rebates-incentives/water-conservation-rebate#:~:text=A%2050%25%20rebate%20for%20total,rebate%20of%20%241500%20per%20household

THE TOWN OF COLLINGWOOD'S BEES & TREES PROJECT

https://www.collingwood.ca/canopy

1.3.4 OFFER NATIVE PLANT GIVEAWAYS AND SUBSIDIZED SALES

THE CITY OF RICHMOND HILL'S HEALTHY YARDS PROGRAM

https://www.richmondhill.ca/en/find-or-learn-about/Trees-and-Yards-Healthy-Yards.aspx

THE CITY OF GRANDE PRAIRIE'S GP GROWS PROGRAM

https://cityofgp.com/city-services/more-services/park-space-urban-forestry/gp-grows

LOCAL ENHANCEMENT & APPRECIATION OF FORESTS (LEAF)

https://www.yourleaf.org/

1.3.5 PROVIDE POLLINATOR-FRIENDLY GARDEN CONSULTATIONS

THE CITY OF GUELPH'S HEALTHY LANDSCAPE VISITS PROGRAM

https://guelph.ca/living/house-and-home/lawn-and-garden/healthy-landscape-visits/#:~:text=What%20is%20the%20Landscape%20Visit,Guelph%20residents%20and%20area%20business.

MEADOWMAKERS

https://satinflower.ca/pages/meadowmakers

1.3.6 PROMOTE POLLINATOR-FRIENDLY GARDEN CERTIFICATION PROGRAMS

THE HAMILTON POLLINATOR PARADISE PROJECT

https://www.hamiltonpollinatorparadise.org/

POLLINATOR PARTNERSHIP CANADA'S BEE FRIENDLY GARDENING PROGRAM

https://pollinatorpartnership.ca/en/bfg-canada

1.3.7 INITIATE SEED LIBRARIES AND ENCOURAGE SEED EXCHANGE

SEEDS OF DIVERSITY

https://seeds.ca/

1.3.8 SUPPORT FARMERS TO PROTECT POLLINATORS ON AGRICULTURAL LANDS

THE DELTA FARMLAND AND WILDLIFE TRUST'S HEDGEROW AND GRASS MARGIN STEWARDSHIP PROGRAM

https://dfwt.ca/our-programs/hedgerow-stewardship-program/

ALTERNATIVE LAND USE SERVICES (ALUS)

https://alus.ca/

POLLINATOR PARTNERSHIP CANADA'S BEE FRIENDLY FARMING PROGRAM

https://pollinatorpartnership.ca/en/bee-friendly-farming

POLLINATOR PARTNERSHIP CANADA'S GUIDE ON PRACTICES TO REDUCE BEE POISONING FROM AGRICULTURAL PESTICIDES

https://www.pollinator.org/pollinator.org/assets/generalFiles/Reduce.Bee_.Poisoning.CanadaGuide.FINAL_.noCrops2_2021-09-10-174625.pdf

POLLINATOR PARTNERSHIP CANADA'S GUIDE ON PRESERVING AND CREATING HABITAT FOR POLLINATORS ON ONTARIO'S FARMS

https://pollinatorpartnership.ca/assets/generalFiles/LandManagerGuide.Ontario.Farms.FINAL.PDF

2. EDUCATION AND ENGAGEMENT

2.1 MEDIA, EDUCATION AND MATERIALS

2.1.1 PROMOTE POLLINATORS THROUGH MEDIA CHANNELS

BEE CITY BRANDON WEBSITE

https://www.beecitybrandon.com/

THE CITY OF VICTORIA'S POLLINATOR WEBPAGE

https://www.victoria.ca/EN/main/residents/parks/growing-in-the-city/pollinators.html#:~:text=In%20May%202018%20City%20of,Pollinator%20Week%2C%20visit%20Pollinator%20Canada

2.1.2 PROVIDE EDUCATION AND AWARENESS MATERIALS ABOUT POLLINATORS

BEES OF TORONTO: A GUIDE TO THEIR REMARKABLE WORLD

https://www.toronto.ca/wp-content/uploads/2017/08/8eb7-Biodiversity-BeesBook-Division-Planning-And-Development.pdf

PETERBOROUGH POLLINATORS' 2017 POLLINATOR CALENDAR

http://www.peterboroughpollinators.com/calendar/

2.1.3 USE SIGNAGE TO EDUCATE RESIDENTS AND PROMOTE MEMBERSHIP IN BEE CITY CANADA

ORDER BEE CITY CANADA GARDEN SIGNS

https://beecitycanada.org/shop/

DOWNLOAD BEE CITY CANADA SIGN DESIGNS

https://beecitycanada.org/bee-cities/bee-city-signage/

2.1.4 PROVIDE POLLINATOR-RELATED TRAINING TO EMPLOYEES

POLLINATOR STEWARDSHIP CERTIFICATION TRAINING
https://pollinatorpartnership.ca/en/pollinator-steward-certification

2.1.5 EDUCATE YOUTH ABOUT POLLINATORS THROUGH SCHOOLS AND CAMPS

THE RARE CHARITABLE RESEARCH RESERVE'S EVERY CHILD OUTDOORS (ECO) CAMP
https://raresites.org/education/summer-eco-camp/

THE BEE SMART™ SCHOOL GARDEN AND CURRICULUM KIT
https://pollinatorpartnership.ca/en/sgk

2.1.6 USE BEE HOTELS TO EDUCATE ABOUT NATIVE BEES

POLLINATOR PARTNERSHIP: BEE HOUSES: USES, DO'S AND DON'TS
https://www.youtube.com/watch?v=szPYC0n69-0

THE ALBERTA NATIVE BEE COUNCIL'S BEST PRACTICES FOR BEE HOTELS IN ALBERTA
https://static1.squarespace.com/static/606b8faa2fe89f1dd38642e8/t/60cfb28276779764701ee358/1624224472994/Best+Practices+for+Bee+Hotels+in+Alberta+April+2020.pdf

THE CITY OF VICTORIA'S POP-UP NATIVE BEE APIARY
https://borderfreebees.com/victoria-pop-up-apiary/

2.2 ENGAGEMENT EVENTS AND ACTIVITIES

2.2.1 FEATURE POLLINATOR TALKS AND WORKSHOPS

POLLINATION GUELPH'S ANNUAL POLLINATION SYMPOSIUM
https://www.pollinationguelph.ca/pollination-symposium

2.2.2 ORGANIZE POLLINATOR EXHIBITS AND DAY EVENTS

AMAZING POLLINATORS EXHIBIT
https://www.minotaurmazes.com/amazing-pollinators/

THE ENTOMOLOGICAL SOCIETY OF ONTARIO'S BUG DAY
https://www.entsocont.ca/bug-day.html

2.2.3 BRING THE COMMUNITY TOGETHER FOR HABITAT CREATION AND MAINTENANCE EVENTS

TORONTO AND REGION CONSERVATION AUTHORITY'S CREATING HABITAT: A GUIDE FOR COMMUNITY GROUPS

https://trca.ca/app/uploads/2016/04/2602-Stewardship_Habitat-SinglePg_PRESS.pdf

TORONTO AND REGION CONSERVATION AUTHORITY'S MAINTAINING YOUR POLLINATOR HABITAT: A GUIDE FOR COMMUNITY GROUPS AND GARDENERS

https://trca.ca/app/uploads/2016/04/PollinatorMaintenanceGuide_WEB.pdf

2.2.4 INVITE THE COMMUNITY TO POLLINATOR HABITAT TOURS

RARE CHARITABLE RESEARCH RESERVE'S VIRTUAL GUIDED TRAIL HIKE

https://raresites.org/events/virtual-guided-trail-hike/

THE NATIVE BEE SOCIETY OF BRITISH COLUMBIA'S BEE BINGO CARDS

https://www.bcnativebees.org/bee-bingo

2.2.5 ENCOURAGE PARTICIPATION IN COMMUNITY SCIENCE

INATURALIST

https://www.inaturalist.org/

BUMBLE BEE WATCH

https://www.bumblebeewatch.org/

THE SPACE FOR LIFE INSECTARIUM'S MISSION MONARCH

https://www.mission-monarch.org/

NATIONAL GEOGRAPHIC SOCIETY'S BIOBLITZ PROGRAM

https://www.nationalgeographic.org/projects/bioblitz/

CANADIAN WILDLIFE FEDERATION'S BIOBLITZ-IN-A-BOX

https://cwf-fcf.org/en/resources/downloads/booklets-handouts/Bioblitz_in_a_Box_EN.pdf

THE NORTH AMERICAN POLLINATOR PROTECTION CAMPAIGN'S ANNUAL POLLINATOR WEEK BIOBLITZ

https://www.pollinator.org/nappc/pollinator-communications

2.2.6 PARTNER WITH FOOD FESTIVALS, RESTAURANTS, AND BARS TO PROMOTE POLLINATORS

BARR HILL GIN'S BEES' KNEES WEEK

https://caledoniaspirits.com/more-about-bees-knees-week/

2.2.7 FEATURE POLLINATORS AT BROADER COMMUNITY EVENTS

THE CITY OF OSHAWA'S BEE CITY PEONY FESTIVAL PRESENTATION

https://www.youtube.com/watch?v=2HnNferHA6s

2.2.8 SEEK COMMUNITY FEEDBACK THROUGH PUBLIC CONSULTATIONS AND SURVEYS

THE TOWN OF COLLINGWOOD'S REQUEST FOR FEEDBACK ON A POLLINATOR PROTECTION PLAN

https://www.collingwood.ca/council-government/news-notices/collingwood-seeks-community-feedback-pollinator-protection-plan

3. CELEBRATION DURING POLLINATOR WEEK

3.1 ACTIONS TO PROMOTE POLLINATOR WEEK

3.1.1 ISSUE A POLLINATOR WEEK PROCLAMATION OR PRESS RELEASE

POLLINATOR PARTNERSHIP CANADA'S SAMPLE PROCLAMATIONS

https://pollinatorpartnership.ca/en/pollinator-week-canada/proclamations

3.1.2 PUT UP BANNERS, SIGNS AND DISPLAYS

POLLINATOR PARTNERSHIP'S ANNUAL POSTERS

https://www.pollinator.org/shop/posters

3.1.3 LAUNCH A SOCIAL MEDIA CAMPAIGN

POLLINATOR PARTNERSHIP CANADA'S POLLINATOR WEEK TOOLKIT

https://pollinatorpartnership.ca/en/pollinator-week-canada

3.2 ACTIONS TO CELEBRATE POLLINATOR WEEK

3.2.1 HOST A POLLINATOR FESTIVAL

KING TOWNSHIP'S POLLINATOR FESTIVAL: THE BUZZ

https://buzz-king.weebly.com/

3.2.2 RECOGNIZE COMMUNITY EFFORTS THROUGH POLLINATOR GARDEN CONTESTS

THE HAMILTON MONARCH AWARDS

http://monarchawardshamilton.org/

3.2.3 INVITE THE COMMUNITY TO A POLLINATOR HABITAT OPENING CEREMONY

THE MONO POLLINATOR GARDEN'S OFFICIAL UNVEILING CEREMONY
https://citizen.on.ca/monos-pollinator-garden-officially-opened-to-public/?upm_export=print

3.2.4 CREATE POLLINATOR-THEMED PUBLIC ART

NICK SWEETMAN'S POLLINATOR ART
https://beecitycanada.org/nick-sweetman-pollinator-sweetheart/

THE REMEDIATE GARDEN
http://www.christinakingsbury.com/remediate

3.2.5 LAUNCH POLLINATOR PHOTO CONTESTS ON SOCIAL MEDIA

THE CITY OF BARRIE'S PIC-A-POLLINATOR CONTEST
https://barrie.ctvnews.ca/getting-the-bees-to-say-cheese-in-city-photo-contest-1.5931975

3.2.6 PRESENT A POLLINATOR FILM SCREENING

POLLINATORS UNDER PRESSURE
https://www.pollinatorsunderpressure.org/copy-of-watch-pollinator-films

3.2.7 PROVIDE POLLINATOR-THEMED GIVEAWAYS

WATERLOO REGION'S BEE CITY CANADA GARDEN SIGN GIVEAWAY
https://twitter.com/citywaterloo/status/1404428163359334414?lang=en

3.2.8 ANNOUNCE FUTURE PROJECTS AND RECRUIT VOLUNTEERS

THE BEE CITY CANADA POLLINATOR PROTECTION PLEDGE
https://beecitycanada.org/pollinator-pledge/

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