

## **Pollinator Protection Strategy**

**Date:** March 21, 2018

**To:** Parks and Environment Committee

**From:** Director, Environment and Energy

**Wards:** All

### **SUMMARY**

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This report presents a Pollinator Protection Strategy for Toronto. The Strategy recognizes that pollinators are a key component of a sustainable city, and supports the vision of Toronto being home to diverse pollinator communities that contribute to resilient ecosystems and enhance urban biodiversity.

The Strategy brings together City initiatives that are already underway to protect pollinators into a single comprehensive approach, while creating new opportunities and partnerships. It presents 30 actions that can be taken by the City and the community to support pollinators, and identifies six key priorities: create habitat, connect green spaces, build partnerships, incentivize action, educate, and recognize achievements.

Toronto is home to a wide range of pollinators, including over 360 species of native bees, 112 species of butterflies, and one species of managed bee - the European Honey Bee - which is not native to North America. Honey bees colonies are managed by beekeepers and are governed by the Ontario Bees Act. While the primary focus is the protection of native pollinators, the foundation of the Strategy is habitat creation, which will benefit all pollinators, native and non-native.

Bees provide the invaluable service of pollination, allowing plants to produce seeds, fruits, and new plants. Without bees, our natural landscapes and food could not exist. One in three bites of food relies on bee pollination. Butterflies are also an essential component of our ecosystem. Caterpillars, the larvae of butterflies, are natural herbivores and a primary source of food for birds.

Pollinators are under increasing stress due to habitat loss, invasive species, diseases, pesticides and climate change. As a result, some species are in decline. Evidence suggests that native bee species are even more threatened than non-native honey bees, despite the significant media attention on honey bees. Once native species are lost, they cannot be replaced. Recent studies indicate that honey bees may negatively impact native pollinators due to resource competition and the unintended spread of parasites and disease. While research in this area continues, City staff will remain committed to efforts known to benefit all pollinators, rather than efforts to encourage additional beekeeping activities in Toronto, which may stress our native species.

The Strategy was developed with guidance from conservation biologists, native plant experts, pollinator specialists, beekeepers, and non-profit groups, among others. Thousands of residents also participated by providing feedback via surveys and pop-up consultations, showing their support for leadership from the City of Toronto on this important issue and their willingness to get involved.

The Strategy, a collaborative effort by Environment and Energy (EED), City Planning, and Parks, Forestry and Recreation (PF&R), will form part of the City's broader Biodiversity Strategy. City Planning, and PF&R were engaged in the preparation of this report and agree with its content, conclusions and implementation points.

## **RECOMMENDATIONS**

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### **The Director, Environment and Energy Division, recommends that:**

1. City Council adopt the Pollinator Protection Strategy presented in Attachment 1 to this report, including the following guiding principles:
  - a. To prioritize actions that support and sustain native pollinator biodiversity in Toronto, recognizing that native bee species, for example, are more threatened than non-native honey bees, that they are ecologically important, and that once they are lost they cannot be replaced;
  - b. To create, enhance and protect habitat in natural and urbanized areas – using native plants, trees and shrubs as much as possible – recognizing that habitat loss is one of the greatest threats facing pollinators and that additional habitat will benefit all pollinators, both native and non-native; and
  - c. To engage and support the community in taking action to help sustain Toronto's native pollinators.
2. City Council declare the metallic green sweat bee, Bicoloured Agapostemon (*Agapostemon virescens*), as Toronto's Official Bee, to raise awareness about Toronto's diverse native bee community.
3. City Council declare Toronto a Monarch-friendly city, by participating in the Mayors' Monarch Pledge, as presented in Attachment 2 to this report, and authorize the Director, Environment and Energy, to complete the online pledge form, to show Toronto's commitment to becoming a Monarch-friendly city.
4. City Council adopt the Pollinator Stewardship Incentive Program framework, as presented in Attachment 3 to this report, which will provide financial support to community-led pollinator stewardship initiatives.
5. City Council approve the establishment of a discretionary reserve fund account named the 'Pollinator Protection Reserve Fund' in Schedule 7 of City of Toronto Municipal Code Chapter 227, Reserves and Reserve Funds ("Chapter 227") the purpose of which is to hold funds for pollinator stewardship incentives, with criteria as set out in Attachment 4 to this report.

6. City Council authorize the transfer of the balance of the Home Energy Assistance Toronto Reserve Fund Account (XR1719) to the Pollinator Protection Reserve Fund Account, direct the Home Energy Assistance Toronto Reserve Fund to be closed and deleted from Schedule 7 of Municipal Code Chapter 227, Reserves and Reserve Funds ("Chapter 227") and amend Chapter 227 accordingly.

7. City Council authorize the City Manager or designate to negotiate and enter into all necessary agreements, including funding agreements, to support the implementation of the Pollinator Protection Strategy recommendations, in forms satisfactory to the City Solicitor.

8. City Council forward a copy of Council's decision to the Ontario Ministry of Agriculture, Food and Rural Affairs for consideration as they move forward with implementing their Pollinator Health Action Plan and reviewing the Ontario Bees Act.

## **FINANCIAL IMPACT**

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There are no financial implications resulting from this report. The recommendations can be adopted and implemented within approved Operating Budget resources.

Financial considerations for the implementation of elements of the Pollinator Protection Strategy will be referred to the 2019 Budget Process. Divisions who identify that they require additional resources in order to implement actions they are responsible for, will submit their requests through the 2019 Budget Process.

As of March 1, 2018, the Home Energy Assistance Toronto Reserve Fund Account (XR1719) has a balance of \$138,470. This report requests that the balance be re-purposed and directed towards implementation of elements of the Pollinator Protection Strategy in 2018. On August 5, 2009, City Council adopted a report titled "The Live Green Toronto Home Energy Efficiency Incentive Program" which entailed that the Home Energy Efficiency Incentive Program will conclude by March 31, 2012 and as such, City staff has ensured that there are no outstanding liabilities tied to the purpose of the Home Energy Assistance Toronto Reserve Fund Account (XR1719).

The Acting Chief Financial Officer has reviewed this report and agrees with the financial impact information.

## **EQUITY IMPACT**

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The Strategy aims to protect and sustain a key component of a biodiverse city. The Strategy will also contribute positively to the quality of life of Toronto's residents. Failure to protect urban biodiversity can increase inequity; environmental issues stemming from unsustainable urban practices have been proven to disproportionately affect groups that are already marginalized and disadvantaged. For example, decreases in green spaces and the resulting loss of biodiversity can hinder the ability of disadvantaged groups to cope with environmental changes and potentially increase poverty.

The Pollinator Stewardship Incentive Program aims to invest in projects that benefit people experiencing economic disadvantages, discrimination and/or barriers to equal opportunity, including those from equity-seeking communities protected by human rights legislation. These communities include, but are not limited to, women, Indigenous people, racial minorities, persons with disabilities, and newcomers to Canada. The Program will focus on investment in community-led projects that benefit equity-seeking communities and include a focus on multi-lingual communities, and Neighbourhood Improvement Areas. The Program seeks to mitigate barriers to participation by:

- Allowing unincorporated applicants to apply via a trustee.
- Providing dedicated staff support to applicants throughout the application process.
- Promoting in multiple languages and providing translation services upon request.

While the actual equity impacts of the Program will vary according to the nature of the projects selected, the Program aims to achieve positive environmental and social outcomes for people who are disproportionately affected by poverty and discrimination.

Implementing the actions proposed in the Strategy will contribute to increases in green space and green space accessibility, improved urban agriculture efforts, improved and more accessible educational opportunities, and increased access to financial incentives; these actions when designed with equity in mind will assist in alleviating hunger and poverty, increase equitable distribution of benefits, promote good human health, and encourage consideration of unfair burdens for future generations.

## **DECISION HISTORY**

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On May 4, 2017, the Parks and Environment Committee received an update on the development of the Pollinator Protection Strategy. A draft strategy was presented. <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PE19.3>

On February 27, 2017, the Parks and Environment Committee:

1. Requested the Director, Environment and Energy, in collaboration with the Chief Planner and Executive Director, City Planning and the General Manager, Parks, Forestry and Recreation, to include in the City's Pollinator Protection Strategy report, scheduled for completion in 2018, the following actions:

a. The creation of a City procurement policy to purchase more native pollinator-friendly plants and to select plants and seeds that have not been treated with neonicotinoids for use in City-managed spaces;

b. The incorporation of these plant purchasing guidelines into tender documents for all City Divisions; and

c. The identification of pollinator-friendly plants on the plant list provided to City gardeners.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PE17.5>

On April 1, 2016, City Council adopted a Resolution Designating Toronto a Bee City.  
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PE10.3>

On June 10, 11 and 12, 2015, City Council adopted the following:

1. City Council request the City Manager to review and to report back to City Council on potential options and programs through which the City can promote and incentivize private and public landowners to work in collaboration to protect and encourage natural habitats so as to sustain and renew the populations of Monarch butterflies (Milkweed planting) and bees that are a critical part of our ecosystem.

2. City Council request the City Manager to review the City of Edmonton's backyard Bee Keeping Pilot Program and report back to City Council on its applicability to the City of Toronto.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.MM7.11>

## **COMMENTS**

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The content of this report is divided into the following sections:

### **Section I. Issue Background**

- Pollination, pollinators, threats to pollinators, how to help, pollinator habitat
- Toronto's bees - native, managed, species at risk, beekeeping, our Official Bee
- Toronto's butterflies - Monarchs, other species at risk, Mayors' Monarch Pledge
- Action for pollinators - Province of Ontario and City of Toronto

### **Section II. Pollinator Protection Strategy for Toronto**

- Strategy development - Advisory groups and public consultation
- Strategy summary - Vision, guiding principles, key priorities and actions
- Next steps - Advancing the actions with a phased approach
- Incentivizing action - creation of a pollinator stewardship incentives

### **Section I. Issue Background**

Toronto is home to a wide range of pollinators, including over 360 species of native bees and 112 species of butterflies. These insects are essential to ecosystem functioning; they provide the crucial service of pollination, and are a primary source of food for birds. Pollinators are under increasing stress, largely due to habitat loss and fragmentation. As a result, some species are declining at an alarming rate. When pollinators are threatened, so is food production, and the many natural ecosystems that depend on the actions of pollinators.

The Strategy recognizes that healthy pollinator populations are a key component of a sustainable, resilient, and biodiverse city. Actions that we can take to protect them begin with the preservation and restoration of natural spaces in Toronto, and extend to habitat creation and enhancement in urban gardens and yards across Toronto.

## **What is pollination?**

Pollination is the act of transferring pollen from the male part of a plant to the female part of a plant, which allows plants to produce seeds, fruits and new plants. Most plants cannot pollinate themselves, they attract pollinators through scent, nectar, and colour. Nearly 90% of flowering plants and 75% of the world's food crops require pollination.

## **What are pollinators?**

Animal pollinators include bees, wasps, flies, butterflies, moths, beetles, and birds. Bees are the most specialized and efficient pollinator, visiting flowers to collect pollen and nectar to feed themselves and their larvae.

## **Why is there concern about pollinators?**

Some pollinator species are in drastic decline. Recently, a 27 year study in German nature preserves found a 75%-82% decline in flying insects. In Canada, we are also seeing declines in some species, such as the Rusty-patched Bumble bee and the Monarch butterfly, which are facing extinction. Trends suggest that pollinator declines are a result of the interacting impacts of several stressors due to human activities:

- Forage habitat loss
- Loss of larval host plants
- Nesting habitat loss
- Overwintering habitat loss
- Introduced and invasive species
- Diseases and pests
- Pesticides
- Climate change and weather

## **How can we help Toronto's pollinators?**

Habitat creation is key to supporting Toronto's pollinators. As illustrated in the list of stressors above, habitat loss is having a significant impact. Pollinators need food and places to nest, reproduce and overwinter to thrive in our city. Fortunately, many of the places to create habitat already exist on the ground and on rooftops. Our city with patches of parkland, ravines, urban gardens and green roofs, can provide an abundance of floral resources and nesting/overwintering sites. Tips on how to create pollinator-friendly habitat are provided in Attachment 6.

## **What is pollinator habitat?**

Pollinator habitat provides foraging resources (pollen and nectar from flowers), nesting and overwintering sites (bare patches of soil, hollowed stems, leaf litter), and larval host plants (e.g. milkweed). Pollinators need continuous access to flowers from spring to fall. Native plants that are locally-grown and pesticide-free provide ideal forage habitat.

## **What are native plants?**

Plants that existed in our ecoregion prior to European colonization are considered native. Toronto is located where the Great Lakes St. Lawrence Forest Region and the Carolinian Zone meet. Native bees have coevolved with native plants for over 100 million years. Attachment 5 lists pollinator-friendly plants native to Toronto.

## Toronto's bees

Toronto is home to a diverse native bee community that consists of over 360 different species that vary in colour, size and shape. Toronto is also home to one species of managed bee, the European Honey Bee (*Apis mellifera*), which is not native to North America. Table 1 compares Canadian bees and European Honey Bees.

Toronto's native bee community are primarily solitary, and don't live in colonies like honey bees. Solitary bees nest in the ground or pre-existing cavities, such as hollow stems. Some, such as carpenter bees, excavate tunnels in wood. Native bees don't produce honey, as they are dormant overwinter and do not require food stores. More information can be found in [Bees of Toronto](#), part of the City's Biodiversity Series.

Managed bees are not wild - they require humans to provide for some of their needs. The most common managed bee in Canada is the European Honey Bee (*A.mellifera*). It is a non-native species introduced to Canada from Europe. Honey bees are managed by beekeepers and live in colonies that can contain up to 50,000 bees. Honey bees produce honey and pollinate crops, making them economically valuable in Ontario's agricultural sector. While managed honey bees are the most well-known pollinator, studies have shown that native bees are more effective pollinators on a per bee basis.

Table 1: General comparison of Canadian bees and European Honey Bees

Canadian bees	European Honey Bees
800+ species	One species
Native	Non-native
Wild	Managed
Do not make honey	Make honey
Come in a wide range of colours	Black and yellow
Are primarily solitary	Social and live in colonies
Most nest in the ground or cavities	Live in hives
Don't sting	Sting

## Bees at risk

Evidence suggests that native bees are even more threatened than honey bees. The significant media attention on the declining health of honey bees (often called colony collapse disorder) and the economic losses experienced by beekeepers can take the focus off the more ecologically concerning decline of native bees. Toronto's at-risk bee species include the Rusty-patched Bumble Bee (*Bombus affinis*), the Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*), and the Yellow-banded Bumble Bee (*Bombus terricola*). If these species are lost, they cannot be replaced.

### **Impact of non-native bees on native bees**

Recent studies suggest that in urban centres where habitat is limited, the introduction of non-native bees (such as honey bees), may negatively impact native species due to resource competition and the introduction of pests/disease. Unlike native bees, honey bees make and store honey to sustain the colony, which requires them to collect more resources. One honey bee colony can potentially out-compete thousands of native bees for food. Studies also show that honey bees introduce pests/diseases to native bees.

### **Beekeeping activities in Toronto**

The Ontario Bees Act is the legislation that regulates beekeeping in Ontario and is administered by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). As per the Ontario Bees Act, honey bee colonies (including those on rooftops) cannot be placed within 30 metres of a property line or within 10 metres of a roadway.

In Toronto, beekeeping is permitted as a hobby, provided beekeepers register with OMAFRA and adhere to guidelines in the Ontario Bees Act. There are at least 126 registered beekeepers in Toronto. Commercial beekeeping operations are not located in Toronto. Under Toronto's city-wide zoning by-law (569-2013) commercial beekeeping operations would be classified as agriculture, which is not a permitted use of a property.

### **Province to review the Ontario Bees Act**

The Province has indicated its intention to seek feedback on changes to the Ontario Bees Act by making the following commitment in the Pollinator Health Action Plan 2016:

*"Release and consult on a discussion paper on modernizing the legislative framework on beekeeping. ...related to beekeeper training, updated requirements for the location of hives, recordkeeping and traceability, and tools for pest and disease management."*

City staff recommend delaying decisions on specific beekeeping requirements, until the Provincial review is complete. Staff will monitor the review and report back if required.

### **Will more backyard beekeeping help Toronto's native pollinators?**

No. Adding more honey bee colonies into an already stressed environment, with limited habitat, won't help declining native pollinator populations. Honey bees may act as an additional stressor, due to competition for food and the spread of diseases and pests.

Many well-meaning individuals may pursue hobby beekeeping in the belief that this is how they can help pollinators. However, an easier and more effective way to help is to plant a pollinator garden. Beekeeping requires extensive training by a certified instructor, and years of mentorship. Novice beekeepers may lack the experience to manage pests/diseases, or deal with swarming (when half the hive leaves to form a new colony), resulting in a public nuisance, 911 calls, or exterminators killing the bees.

By contrast, planting a pollinator garden can be done by almost anyone, anywhere, with relatively little time and skill. Habitat creation on private property plays a large role in Toronto's Strategy. Each garden that is added to the urban landscape helps to connect patches of fragmented habitat and create green corridors. Connecting habitat allows pollinators to move from area to area, gathering the resources they need.



## Making the case for Toronto's Official Bee: Bicoloured Agapostemon

By selecting an Official Bee – one that's easy to identify and found in gardens and natural areas across Toronto – the City has an opportunity to raise awareness about our diverse native bee community, strengthen our connection to the natural world, and inspire us to enjoy and protect them. The metallic green sweat bee - Bicoloured Agapostemon (*A. virescens*) – is an ideal choice as our Official Bee for several reasons:

1. It is easy to identify. No other insect in our area has a brilliant bright green head and thorax combined with a black abdomen. The males are also bright green at the front but their abdomen is yellow and black striped (Figure 1).
2. It is a common bee. Females can be found in early mornings foraging on thistles and other flowers. Males can be observed flying slowly around flowers looking for females.
3. It is welcoming. Females form communal nests in the ground. Their social set up is similar to a condominium with one entrance that is shared by all occupants, but each has its own unit. Up to two dozen females may share a single nest entrance, but each builds its own burrow. One bee guards the entrance (Figure 2). There is strength in numbers, which is why these bees allow other Bicoloured Agapostemon individuals (complete strangers) into their nests to increase entrance surveillance. Most bees will defend their nests against others of their own species, but this bee is welcoming to newcomers, which makes it a particularly appropriate choice for Toronto's Official Bee.

Figure 1: Bicoloured Agapostemon (photo credit Amro Zayed)



Figure 2: Bicoloured Agapostemon guards nest entrance (photo credit: Melanie Lawton)



## **Toronto's butterflies**

There are 112 species of butterflies in Toronto. While butterflies are not the most efficient pollinators, they are an important part of our ecosystem in other ways. For instance, caterpillars (butterfly larvae) are a primary food source for birds, and natural herbivores. The caterpillars of each butterfly species feed on specific plants, known as larval host plants. Adult butterflies feed on nectar from a range of flowers. More information is in [Butterflies of Toronto](#), part of the City's Biodiversity Series.

## **Resident and migrant butterflies**

The majority of Toronto's butterfly species remain in the city over winter. These resident species may overwinter as eggs, chrysalides, larvae or adults, depending on the particular species. Resident butterflies require habitat, such as leaf piles or sheltered areas to successfully overwinter. A few species migrate south to warmer climates each winter, such as the Monarch butterfly (*Danaus plexippus*).

## **Monarch butterflies**

The Monarch butterfly (*D. plexippus*) is probably the world's most familiar butterfly, best known for the annual migration of the eastern North American population. Monarchs fly 3200 kilometres from breeding grounds in Toronto to overwinter in central Mexico. Monarchs return in the spring to find their larval host plants (milkweed), which do not grow in their overwintering sites. Monarch larvae feed exclusively on milkweed.

## **Butterflies at risk**

The Monarch butterfly (*D. plexippus*) is endangered federally, and classified as Special Concern provincially, as populations have declined drastically over the last decade. Other at risk species include the Mottled Duskywing (*Erynnis martialis*) and the West Virginia White (*Pieris virginianensis*). All eight swallowtail species in Toronto are specially protected, requiring Provincial approval for collecting, breeding and research. At least one species, the Karner Blue Butterfly (*Lycaeides Melissa Samuelis*) is locally extinct.

## **Mayors' Monarch Pledge - City of Toronto participation**

In 2016, Toronto became the first Bee City in Canada, showing its leadership in pollinator stewardship. Toronto now has the opportunity to join other North American cities showing support for the Monarch butterfly, by participating in the National Wildlife Federation's Mayors' Monarch Pledge. This initiative was brought to the attention of the City by the community, who see it as a way for Toronto to declare itself a Monarch-friendly city. The David Suzuki Foundation is coordinating the movement in Canada. Canadian cities that have taken the pledge include Montreal, Pickering, Whitby, Thunder Bay and York Region. Toronto will be the largest city in North America to join.

To participate, cities must commit to at least three actions to support monarchs. Toronto can commit to eight actions (highlighted in Attachment 2). This level of participation achieves special recognition and membership in the "Leadership Circle". A commitment of eight actions is easily achievable as they align with actions in Toronto's Strategy. The pledge does not require the City to propose new initiatives or undertake activities that require additional resources beyond what is already proposed in the Strategy.

## **Why action is important**

It is critical to ecosystem functioning to maintain healthy populations of pollinators. Protecting pollinators provides food security, and sustains and renews the natural environment. The decline in some species of bees and butterflies is alarming. Once a species is lost from an area, it cannot be replaced. The actions in the Strategy are intended to ensure that species found in our city can survive and be sustained.

## **Province of Ontario action for pollinators**

The Province of Ontario is undertaking many initiatives to protect pollinators, including the following actions:

### **1. Release of the Pollinator Health Action Plan**

Part of the Province's broader Pollinator Health Strategy, the Pollinator Health Action Plan (2016), is designed to improve the health of all insect pollinators which support a strong agricultural sector and healthy environment.

### **2. Changes to the noxious weed list**

In 2014, the Province amended Regulation 1096 under the Weed Control Act to make changes to the noxious weed list. Milkweed was removed and two species of dog-strangling vine (an invasive plant known to negatively impact Monarchs) were added.

### **3. Updates to Pesticides Act**

In 2015, Ontario legislated restrictions that apply to neonicotinoid treated corn and soybean seeds, under the Pesticides Act. Neonicotinoids, a class of systemic pesticides harmful to pollinators, are most commonly used for agricultural purposes in Ontario. In 2009 the use of cosmetic pesticides was banned across the province.

## **City of Toronto support for pollinators**

Toronto has a long history of pollinator stewardship. Some initiatives are highlighted below, and the rest are presented in more detail in Attachment 7.

### **1. Pesticide ban and Integrated Plant Health Care Strategy**

Toronto's ban on the use of cosmetic pesticides in 2003, triggered a provincial ban in 2009, significantly reducing pesticide use in our city. The City itself does not use neonicotinoids in any of its greenhouses, parklands or gardens, and has been practicing Integrated Plant Health Care since 2002. This is an active plant management strategy used to manage healthy greenspaces and eliminate the unnecessary use of pesticides.

### **2. Education and eco-literacy - Bees of Toronto, and Butterflies of Toronto books**

Available at local libraries and online, these two books are a part of the City's Biodiversity Series. These are made-in-Toronto guides to bees and butterflies in the city. Bees of Toronto, is the first book on urban native and non-native bees in the world.

### **3. Toronto named the first Bee City in Canada**

In April 2016, City Council showed its commitment to pollinator protection by adopting a resolution to make Toronto a Bee City. Toronto became the first Bee City in Canada. The program raises awareness of pollinator stewardship and encourages action.

## **Pollinator protection aligns with existing City plans and strategies**

TransformTO, Toronto's long-term, low-carbon climate action strategy was created with a view to maximizing co-benefits to the community. All climate action undertaken by the City must align with a set of guiding principles: advance social equity; improve public health; and create resilient communities and infrastructure. Actions that support native species and enhance the quality of green spaces and infrastructure in Toronto, such as those identified in the Strategy, support and advance the TransformTO principles.

In Toronto's Official Plan, the vision for the future is one where "ecological diversity is conserved and nurtured for future generations". Chapter 3 states the commitment to protect, restore and enhance the health of natural ecosystems and support biodiversity, with specific attention to habitat for native species.

The City's Parks Plan (2013-17) speaks to the priority to protect, restore and enhance natural area parkland and recognizes that natural areas provide many ecosystem services such as habitat and pollination.

In 2017, PF&R began work on the Parkland Strategy, a 20-year plan that will guide decision-making and prioritization of investment of Toronto's parks, including the acquisition of new parks and improvements and connections to existing parks. The themes - expand, share and connect - support consideration of habitat and biodiversity.

City Planning is currently working on a city-wide Biodiversity Strategy, of which the Pollinator Protection Strategy will be a part. This strategy will provide for the long-term protection and enhancement of the city's native flora and fauna. Species at risk action plans to address the needs of bees and butterflies at risk will be incorporated.

## **Section II. Developing Toronto's Pollinator Protection Strategy**

Staff from EED, City Planning, and PF&R formed the core project team, engaging with other City Divisions, experts, and the public to develop the Strategy.

### **Guidance from City staff and subject matter experts**

The project was initiated by building consultation teams of internal and external subject matter experts. These groups were instrumental in guiding the development of the Strategy and will continue to be engaged during the implementation phase.

Attachment 8 lists the City Divisions and individuals that contributed their time, expertise and enthusiasm to this effort.

### **Inter-Divisional Pollinator Working Group**

Protecting Toronto's pollinators goes beyond the mandate of any one City division and a City-wide approach is required, thus an inter-divisional working group was formed (see participating Divisions in Attachment 8). This group plays a key role in implementation and was engaged in the creation of the draft implementation plan in Attachment 9.

## **Pollinator Advisory Group**

Our Advisory Group includes conservation biologists, academic researchers, pollinator specialists, native plant experts, green roof researchers, beekeepers, and community based organizations. Recommendations from this group formed the basis for the actions in the Strategy. The City will continue to consult with this group as we move forward with implementation and measuring success.

### **Key recommendation from Advisory Group:**

Habitat creation efforts should be encouraged rather than additional backyard beekeeping activities. Considering the potential negative impact that non-native honey bees pose to our native pollinators, the City should be cautious about encouraging the introduction of more honey bee colonies. The focus should continue to be habitat creation, as this offers the most benefits for all pollinators, including honey bees.

## **Public consultation**

Feedback received through the public consultation process was overwhelmingly positive and supportive of pollinator protection initiatives in Toronto. Nearly 7,000 people were engaged through the public consultation activities in 2016 and 2017. Attachment 10 contains a detailed summary of the public consultation process and key findings.

### **Part One - Gauging awareness and willingness to help**

A survey was delivered in the summer of 2016. The results from this survey and the recommendations from the Advisory Group, were used to shape the draft Strategy presented to the Parks and Environment Committee in May 2017.

### **Part Two - Gathering feedback on draft Strategy and proposed actions**

Over the spring, summer and fall of 2017, in-depth public consultation activities were organized to gain specific feedback on the draft Strategy and the proposed actions. Several engagement methods were utilized including 'pop-up consultations', online surveys, online workbooks and interactive activities at events in the community.

### **Key findings from the public consultation:**

- Concern about declining pollinator populations
- Confusion surrounding native / managed bees
- Significant interest in the following themes:
  - Incentives - such as grants and subsidized seeds and plants;
  - Consumer choices - such as working with nurseries to enable the easy identification of pollinator-friendly plants and seeds; and
  - Educational opportunities - such as online resources and information sessions.

### **Draft strategy revised to reflect feedback received**

Through the public consultation process, several actions were deemed "most impactful" or "most helpful" by residents, community groups and experts. The draft Strategy was revised based on this feedback. We are grateful to those that participated in the public consultation activities and took the time to share their thoughts, ideas and experience.

## **Toronto's Pollinator Protection Strategy - Overview**

The Strategy builds upon current activities, and creates opportunities to establish new initiatives and partnerships. It includes a set of guiding principles, and presents 30 actions, under six key priority areas, that can be taken to support pollinators. The Strategy was developed with expert advice and shaped by public feedback. It is adaptive and can be adjusted as new evidence-based research becomes available. The full Strategy is presented in Attachment 1 to this report.

### **Next steps - Advancing the actions**

A phased approach to move forward is proposed and described below. PF&R is a leader in habitat creation, enhancement and restoration, and as such, they will play an essential role in advancing the actions. PF&R staff were engaged in the development of the implementation plan and agree with its contents, as presented in Attachment 9.

#### **Phase one actions: Achievable in 2018-2019 using existing resources**

Several actions are already underway and others can be initiated immediately using existing resources and staff time.

#### **Phase two actions: Require additional planning, research or new resources**

These actions require additional strategic planning in order to be successfully implemented. Requests for additional resources will be presented by each Division as part of their submission during the 2019 Budget process.

### **Incentivizing action - proposed Pollinator Stewardship Incentive Program**

The proposed Pollinator Stewardship Incentive Program aims to accelerate community action by funding community-led pollinator stewardship projects. The funding will help community groups implement their ideas for pollinator habitat creation and education. Over 80% of participants in the public consultation process expressed that grants for gardens, free seeds, and community workshops would be "very or extremely helpful".

This program will build off of the former Live Green Toronto Community Investment Program, which supported 168 community-led projects, between 2008 and 2015. The draft framework of the proposed Pollinator Stewardship Incentive Program (Attachment 3) is modelled on the Live Green Toronto Community Investment Program guidelines. The Pollinator Stewardship Incentive Program will fund community projects in 2018, 2019 and 2020. The program will be evaluated, with outcomes reported in 2021.

### **Creating a Pollinator Protection Reserve Fund to support stewardship incentives**

This report requests the creation of the 'Pollinator Protection Reserve Fund', with criteria in Attachment 4. The purpose is to hold funds to support community-led pollinator stewardship projects. The remaining balance of \$138,470 in the Home Energy Assistance Toronto Reserve Fund (XR1719), which was previously used to fund the Live Green Toronto Community Investment Program (now complete), is requested to be transferred as an initial contribution to the new Reserve Fund. While the initial contribution will come from the remaining balance of XR1719, all future funds raised through external grants and sponsorships will be deposited into this account.

## Conclusion

Protecting Toronto's diverse pollinator community sustains and renews the natural environment and increases its resilience to future global change. Through the creation of a Pollinator Protection Strategy, Toronto is taking an important step forward to ensure that pollinator species found in our city can survive and be sustained. The Strategy identifies a series of specific actions the City and community can take to support pollinators. While the primary focus is the protection of native pollinators, the foundation of the Strategy is habitat creation, which benefits all pollinators. With the guidance of subject matter experts, Divisional champions and feedback from the community, a great deal of work has been done to develop the Strategy presented in this report.

## CONTACT

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## SIGNATURE

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Jim Baxter  
Director, Environment and Energy

## ATTACHMENTS

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Attachment 1: Pollinator Protection Strategy  
Attachment 2: Mayors' Monarch Pledge  
Attachment 3: Pollinator Stewardship Incentive Program framework  
Attachment 4: Pollinator Protection Reserve Fund  
Attachment 5: The best native plants for Toronto gardens  
Attachment 6: Tips to create a pollinator-friendly garden  
Attachment 7: Inventory of City of Toronto activities to support pollinators  
Attachment 8: Pollinator Advisory Group and Inter-Divisional Pollinator Working Group  
Attachment 9: Draft Pollinator Protection Strategy implementation plan  
Attachment 10: Public consultation report