

ATTACHMENT 1

PE26.7

Attachment 1

T O R O N T O POLLINATOR PROTECTION S T R A T E G Y

Toronto's Pollinator Protection Strategy recognizes that:

- Toronto is home to a wide range of pollinators, including bees, wasps, flies, butterflies, moths, beetles, and birds.
- Threats to Toronto's pollinators include forage habitat loss, loss of larval host plants, nesting habitat loss, overwintering habitat loss, pesticides, introduced and invasive species, diseases/pests, and climate change.
- Toronto's diverse bee community consists of over 360 species of native bees and one species of managed bee, the European Honey Bee, which is not native to North America. Honey bees are managed by beekeepers, governed by the Ontario Bees Act, and they can be re-established when beekeepers experience a loss.
- Evidence suggests that native bee species are more threatened than honey bees and may be negatively impacted by urban beekeeping activities due to resource competition and the spread of parasites and disease.
- The habitat creation efforts presented in this strategy will support native bees and butterflies, and will also be beneficial to all pollinators, including honey bees.



Bicoloured Agapostemon (*Agapostemon Virescens*)



Ground nesting Bicoloured Agapostemon (*A. virescens*)

NATIVE POLLINATORS AT RISK INCLUDE:

Bees:

- Rusty-patched Bumble Bee (Endangered)
- Gypsy Cuckoo Bumble Bee (Endangered)
- Yellow-banded Bumble Bee (Special Concern)

Butterflies:

- Monarch (Endangered & Special Concern)
- Mottled Duskywing (Endangered)
- West Virginia White (Special Concern)



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.
- c. To engage and support the community in taking action to help sustain Toronto's native pollinators.



Caterpillar (larva) Black Swallowtail (*Papilio polyxenes*)



Adult Black Swallowtail (*Papilio polyxenes*)

Vision:

Toronto is home to diverse pollinator communities that contribute to resilient ecosystems and enhance urban biodiversity.

Priorities:

To achieve this vision, Toronto's Pollinator Protection Strategy identifies six priorities:

- 1) Create and enhance habitat
- 2) Design and connect green spaces
- 3) Partner and build relationships
- 4) Invest and incentivize
- 5) Educate and train
- 6) Celebrate and recognize achievements

Actions:

For each priority, a series of specific actions have been developed. The Strategy presents 30 actions that can be taken by the City and the community to support pollinators.

Habitat creation will have a positive impact on all pollinators, and is the foundation of the Strategy.

Toronto is home to a diverse native bee community that consists of over 360 species that vary in colour, size and shape.



Native sweat bee:
Bicoloured Agapostemon (*A. Virens*)

Toronto is also home to one species of managed bee, the European Honey Bee, which is not native to North America.



European Honey Bee (*Apis mellifera*)

1. CREATE AND ENHANCE HABITAT



Pollinators require high quality habitat to thrive in an urban environment. High quality habitat is any area that provides foraging resources (pollen and nectar from flowers), nesting and overwintering sites, and larval host plants (such as milkweed) that support butterflies.

Many of the places to create and enhance pollinator habitat already exist on the ground and on our rooftops. Our urban environment with patches of parkland, ravines, urban gardens and green roofs, can provide an abundance of floral resources and nesting sites for a wide range of pollinators.

Actions:

1. Plant more pollinator-friendly native plants, trees, and shrubs in City parks and facilities, with the goal of creating pollinator habitat in every park, where feasible.
2. Work with members of City Council to identify at least one City-managed site in each ward that can be enhanced for pollinators and serve as a model garden, and establish a pollinator demonstration garden at Toronto City Hall.
3. Create "pollinator patches" at urban agriculture sites managed by the City by incorporating pollinator-friendly native plants into community gardens and allotment gardens.



Success story

The Humber Bay Butterfly Habitat (HBBH)

This City of Toronto led ecological restoration project provides critical habitat for a variety of native butterflies and other pollinators. Located along the shore of Lake Ontario in Toronto's west end, HBBH incorporates a diversity of native flowers, shrubs, trees, grasses, sedges and a variety of physical features known to support butterflies throughout their life cycles. The goal of HBBH is to establish a self-sustaining native plant community that will support a variety of butterfly species, while engaging and educating park users about the value of urban wildlife habitat.

4. Work with Solid Waste Management Services to identify City-owned closed landfill sites that may have the potential to become high quality pollinator habitat.

5. Review the City's landscaping practices, including mowing and mulching activities, with the goal to preserve pollinator habitat.

The larvae (caterpillars) of each species of butterfly, can only feed on specific plant species, called larval host plants. For Monarchs, this plant is milkweed. In 2014, the Province removed milkweed from its noxious weed list.



2. DESIGN AND CONNECT GREEN SPACES

As cities grow, habitat can be lost or fragmented into small patches, making it difficult for some species to access all of the resources they need to survive. By re-connecting green spaces, a continuous corridor of habitat can be created that allows pollinators to move freely from area to area and take advantage of the resources each patch has to offer.

On a city-wide scale, parks, ravines, green roofs, and infrastructure corridors present the greatest opportunity for the conservation of pollinators.

On a smaller scale, individual pollinator plantings such as urban gardens, parkettes, laneways, and planter boxes, can be linked to create a neighbourhood-scale pollinator corridor.

Actions:

6. Identify opportunities to improve connections between existing habitat, and encourage the creation of "pollinator pathways" to foster corridor creation across the city.

7. Continue to support the work of the Toronto and Region Conservation Authority (TRCA) to revitalize hydro corridor space in Toronto and transform it into high functioning meadow habitat that supports pollinators, by contributing staff time and exploring funding requirements needed to advance these efforts.

8. Enhance areas of the City Hall podium green roof with pollinator-friendly habitat, where possible, accompanied by educational signage, to demonstrate the role green roofs play in pollinator habitat and corridor creation.





Success story

The Scarborough Centre Butterfly Trail

This TRCA initiative with funding from the W. Garfield Weston Foundation, revitalized approximately 40 hectares of hydro corridor space. By converting the area from barren mown grass into a meadow that provides high functioning pollinator habitat to complement the multi-use trail for pedestrians, the initiative transformed an underutilized space into an important part of the natural system in Toronto. Through education and stewardship programs, community members are able to connect with nature and take active ownership of the space to maintain it for future generations to enjoy. This corridor represents an important pathway of connected greenspace, which allows pollinators to forage in a larger area.

9. Engage with developers, property owners and landscape architects to encourage the creation of pollinator-friendly landscapes and promote biodiverse, pollinator-friendly green roofs, by updating information in the City's Guidelines for Biodiverse Green Roofs and by offering support through the City's existing Eco-Roof Incentive Program.

10. Work with relevant City divisions to ensure native, pollinator-friendly plants are considered in the implementation of green infrastructure projects undertaken by the City, and included in City guidelines such as the Green Streets Technical Guidelines, Complete Street Guidelines, the Toronto Green Standard, the Wet Weather Flow Master Plan and Policy, Greening Surface Parking Lots, Streetscape Manual and other relevant policies.

The creation of pollinator habitat on private property plays a large role in Toronto's pollinator protection goals. Each pollinator garden that is added to the urban landscape helps to connect patches of fragmented habitat and contributes to the creation of green corridors in our city.

3. PARTNER AND BUILD RELATIONSHIPS

It is vital to pollinator protection that the City continues to build relationships, consult, and engage with stakeholders. There are groups in Toronto already working on pollinator protection initiatives and the City of Toronto can support and encourage their actions. Many of the actions proposed in this document cannot be achieved without the support and guidance of partners.

Actions:

11. Engage with the Toronto Association of Business Improvement Areas (TABIA), property and rental associations, condominium boards, faith groups and other large property owners to encourage the creation of pollinator habitat through native plantings.
12. Partner with Toronto Master Gardeners, Landscape Ontario and horticultural and landscape school programs to provide advice and inspiration to property owners in Toronto interested in creating pollinator habitat through on-site consultations and information sessions.
13. Continue to work with local growers and nurseries to encourage them to provide native, pesticide-free plant material and seeds for pollinator habitat, and explore ways to make these items easier for consumers to identify in stores.
14. Support university and college-led research and monitoring projects, and citizen science initiatives that support the goals of this Strategy, and provide data to track and measure the success of implementing the actions in the Strategy.



Bees of Toronto, the first book on urban native and non-native bees in the world, was the result of a partnership between the City, York University and volunteers. This book is part of the City's Biodiversity Series and is available online and at local libraries.

15. Convene an Aboriginal Committee/ Working Group to provide ongoing feedback on the incorporation of Indigenous knowledge, practices, and approaches into the implementation of the Strategy.

16. Continue to coordinate with the Province of Ontario on the Pollinator Health Action Plan, and the Provincial Apiarist on the Ontario Bees Act.



Success story

Parkland Naturalization Program

The City works with community groups and funding partners to restore degraded natural landscapes and establish new natural areas to create forest, wetland, and meadow habitats. More than 60,000 native trees and shrubs have been planted, as well as more than 50,000 wildflowers, herbaceous and aquatic plants.

4. INVEST AND INCENTIVIZE

Investing in pollinator protection initiatives and incentivizing actions that create pollinator habitat will inspire and motivate people to act. Incentives play a key role in changing behaviour, encouraging new approaches, and supporting community interest in pollinator protection.

City purchasing practices can be designed to support healthy pollinator populations. The purchasing power of the City can be utilized to shift the market toward growing and distributing pesticide-free native plants that are beneficial to pollinators.

Actions:

17. Develop and seek funding sources for an incentive program that provides modest financial support to encourage community-led pollinator habitat creation or enhancement, and pollinator education initiatives.
18. Explore the creation of a City procurement policy to purchase more pollinator-friendly native plants, and to select plants and seeds that have not been treated with systemic pesticides (e.g. neonicotinoids) for use in City-managed spaces, and incorporate these guidelines into tender documents for all City divisions.
19. Inspire residents to create pollinator habitat by offering resources such as pollinator-friendly gardening tips, plant lists, seeds, and recognition signage (e.g. Pollinators Are Welcome Here!) through Community Environment Days and Live Green Toronto outreach events.
20. Update the City's Street Tree brochure to include information on how trees benefit pollinators, and identify which trees are pollinator-friendly.
21. Seek sponsorships, grant and external funding opportunities to support the actions presented in this Strategy.

Eastern Tiger Swallowtail (*Papilio glaucus*)





Success story

Live Green Toronto Grants

The grants funded 168 community-led greening projects from 2008 to 2015. The grant recipients included 40 garden projects that provide important habitat for Toronto's pollinators. One grant recipient, the Dallington Pollinators Community Garden, also won the RBC Blue Water Award and a City of Toronto Garden Award. Another grant recipient, the Franklin's Children's Garden Pollination Station, on Toronto Island, welcomed close to 40,000 visitors in the summer of 2016.

5. EDUCATE AND TRAIN

Strengthening education initiatives will leverage the interest in protecting pollinators that already exists in the community. The City has the opportunity to promote practices that are beneficial to pollinators, and identify those that can be harmful.

For example, well-meaning individuals who want to help pollinators may pursue hobby beekeeping, when planting a pollinator garden is an easier and more effective way to support them.

It's also important to recognize the role of City staff, and the importance of delivering and expanding the Horticulture Program of Excellence, that provides education and training to City staff.

Actions:

22. Develop pollinator-friendly gardening practices tips and share lists of pollinator-friendly native plants, trees and shrubs suited to the Toronto area.
23. Work with Live Green Toronto to develop and deliver outreach on pollinator stewardship, and look for opportunities to incorporate Indigenous cultural content into educational initiatives.
24. Engage with Toronto School Boards to encourage schools to create pollinator habitat, with the goal of creating a teaching garden at every school, and investigate support for ongoing garden maintenance.
25. Continue and expand training for City staff on pollinator protection practices





Success story

Tickle Bees and City Staff

In the spring of 2015, thousands of gentle, ground-nesting native bees emerged with the warm weather in a City park. Being in close proximity to a playground, members of the public voiced their concern to the Park supervisor. City staff, having recently completed training on pollinators as part of the Horticulture Program of Excellence, identified the bees as Mining bees, nicknamed the "Tickle Bee" by school children, as they don't sting and are very gentle.

Staff installed educational signage about the "Tickle Bees" and the vital role they play in pollination. The community was thrilled to host these important pollinators and often stopped to observe their activity. Educating City staff about this important pollinator led to this educational opportunity for members of this community.

through the Horticulture Program of Excellence and identify pollinator-friendly native plants on the plant list available to City horticulture staff.

26. Collaborate with the Ontario Beekeepers' Association, Toronto-based beekeeping groups, and the Provincial Apiarist to facilitate informed beekeeping in Toronto by creating best practices, promoting training for novice beekeepers, and educating potential beekeepers about habitat creation as a more effective way to help pollinators.



Ground Nesting Solitary Bee

6. CELEBRATE AND RECOGNIZE ACHIEVEMENTS

There are many ways to celebrate and recognize achievements in pollinator protection. National Pollinator Week is a well-established annual celebration that raises awareness and celebrates actions taken to protect pollinators.

The City can recognize the efforts of residents, businesses, community organizations, and institutions by celebrating milestones and honouring the contributions of members of our community. Public signage, awards, and certification programs will also raise the profile of pollinators and assist in educational efforts that encourage further action.

Actions:

27. Celebrate and promote National Pollinator Week and Toronto's status as the first Bee City in Canada by undertaking at least one public education and/or habitat creation or restoration activity each year.
28. Work with relevant partners such as Canadian Wildlife Federation, Monarch Watch, Pollinator Partnership, World Wildlife Fund, Carolinian Canada, and others to promote existing certification programs, mapping tools and other resources that guide and recognize Toronto property owners in creating pollinator habitat.
29. Add a pollinator-friendly garden category to the City's existing Garden Awards program, and inspire others by offering in person and virtual tours of award-winning gardens.
30. Investigate the opportunity to incorporate pollinator protection initiatives into the City's existing Urban Design Awards.



Success story

Celebrating National Pollinator Week

In June 2016, an event was organized to celebrate National Pollinator Week and Toronto's status as the first Bee City in Canada. A mural of a green metallic sweat bee was unveiled at Bloor Street and Howland Avenue and a proclamation declaring "Pollinator Week" in Toronto was announced. 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 about 65' long by 35' high and serves as a stunning reminder of the importance of pollinators in our city.

