Hello

Blooming Boulevards | www.bloomingboulevards.org

Blooming Boulevards is a registered Mississauga Community Group, and as such, is considered an "Additional Stakeholder" in the CCAP.

We strongly support the following CCAP Action Plan Pathways:

- 2.0 Resilience and Green Infrastructure, Actions #8-1 and #8-3 (p. 29)
- 5.0 Engagements and Partnerships, Actions #19-2 and #19-3 (p. 52)

We support resilience and green infrastructure through our native plant propagation program, with emphasis on providing ecosystem services and attention to conservation genetics.

We support engagements and partnerships through our Education and Outreach programs, by working with Mississauga staff, local and provincial organizations, and community groups. Together, we promote awareness, understanding and “up close and personal” opportunities for engagement.

What we do

we raise awareness

we teach skills

we provide help

we grow native plants

What we do

we create pollinator habitat

We connect neighbourhoods to nature

Blooming Boulevards

Beautiful, low-maintenance, pollinator-friendly gardens

We create pollinator gardens.

Here's why:

Most of Ontario's 400 native bee species have a limited foraging range - sometimes less than 600 meters.

In urban areas, their natural meadow habitats are rapidly disappearing, leaving local populations trapped in isolation from one another.

Unless we help, these species will weaken and die.

BIODIVERSITY IN ONTARIO IS AT RISK

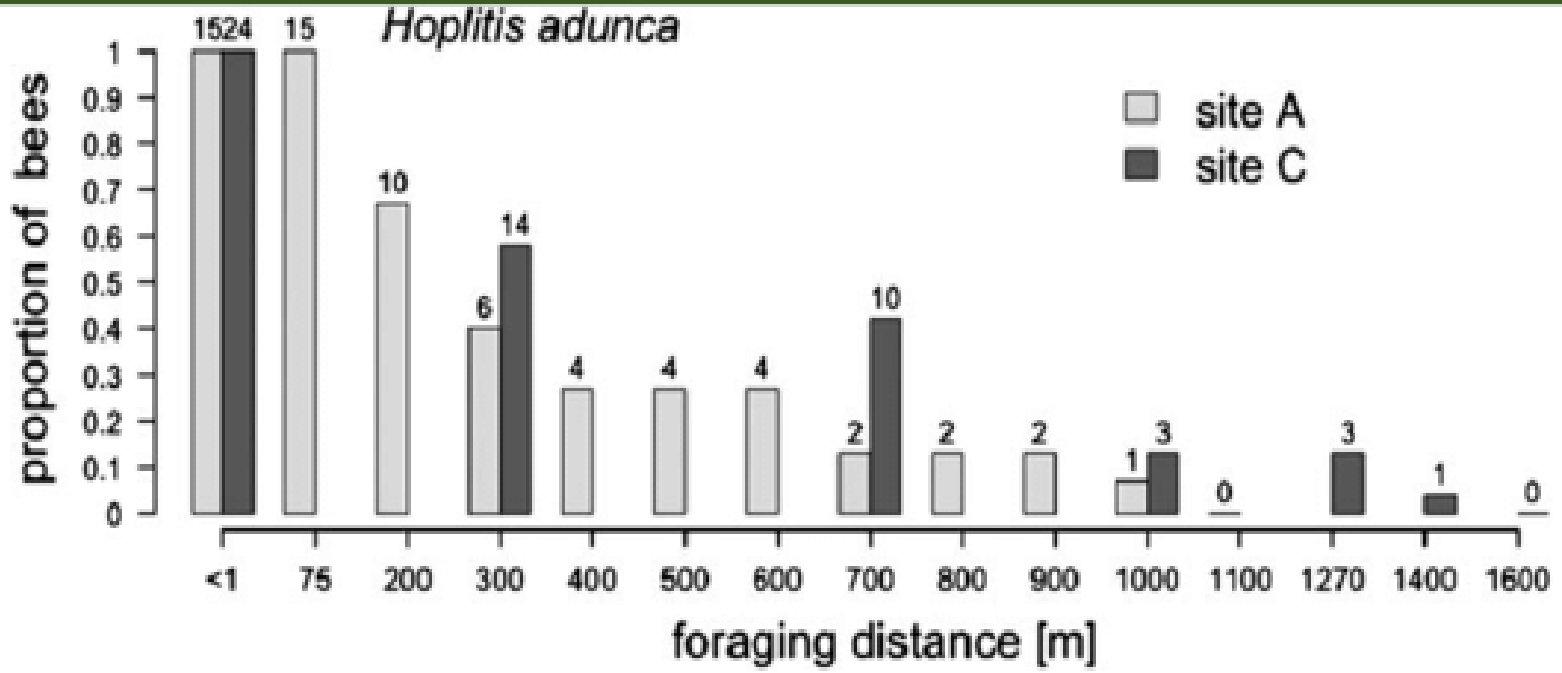
Due to development and other human activities, Southern Ontario alone has lost more than:

-70%
wetlands

-80%
forests

-98%
grasslands

200+
plants and animal species are now classified as at-risk of becoming locally extinct, including nearly all of Ontario's turtle species.



Short-range solitary bees: nesting & forage sites must be close together.

- Only half of the tested bees covered distances of more than 100–225 m and 300 m
- Nesting and foraging habitat proximity is needed for population persistence.

Beautiful but...

Native Pollinator Habitat

The bees are here.

Blooming Boulevards
Connecting Neighbourhoods to Nature

Native Pollinator Habitat

Growing the Future

Blooming Boulevards
Connecting Neighbourhoods to Nature

Native Pollinator Habitat

Growing the Future

1. Resilience & green infrastructure: environmental best practices
2. Engagements & partnerships: moving forward together
3. Expanding our services
4. Finding solutions

Sustainability is no longer about doing less harm.

It's about doing more good.

Jochen Zeitz

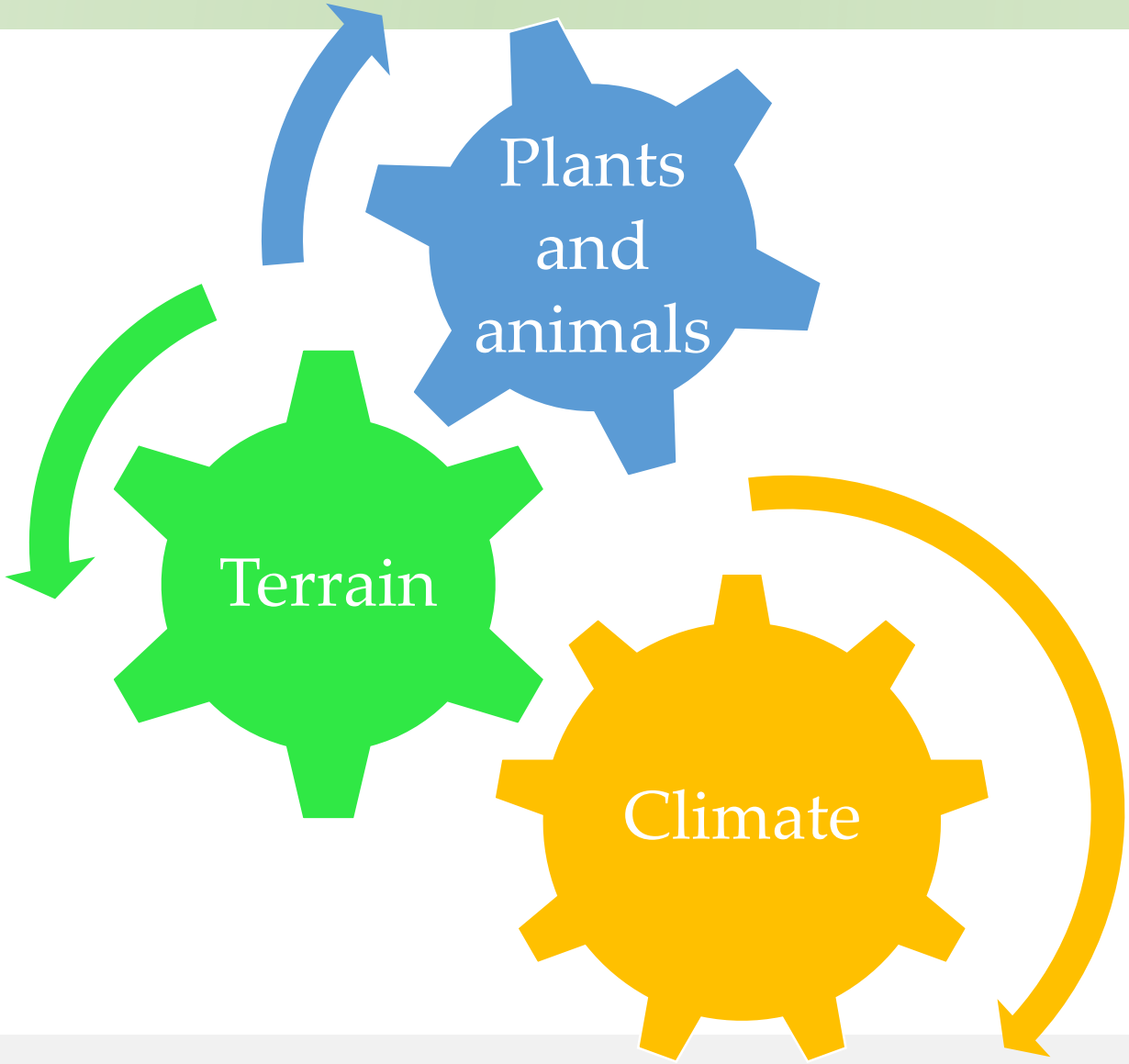
1. Resilience & Infrastructure

Delivering environmental best practices

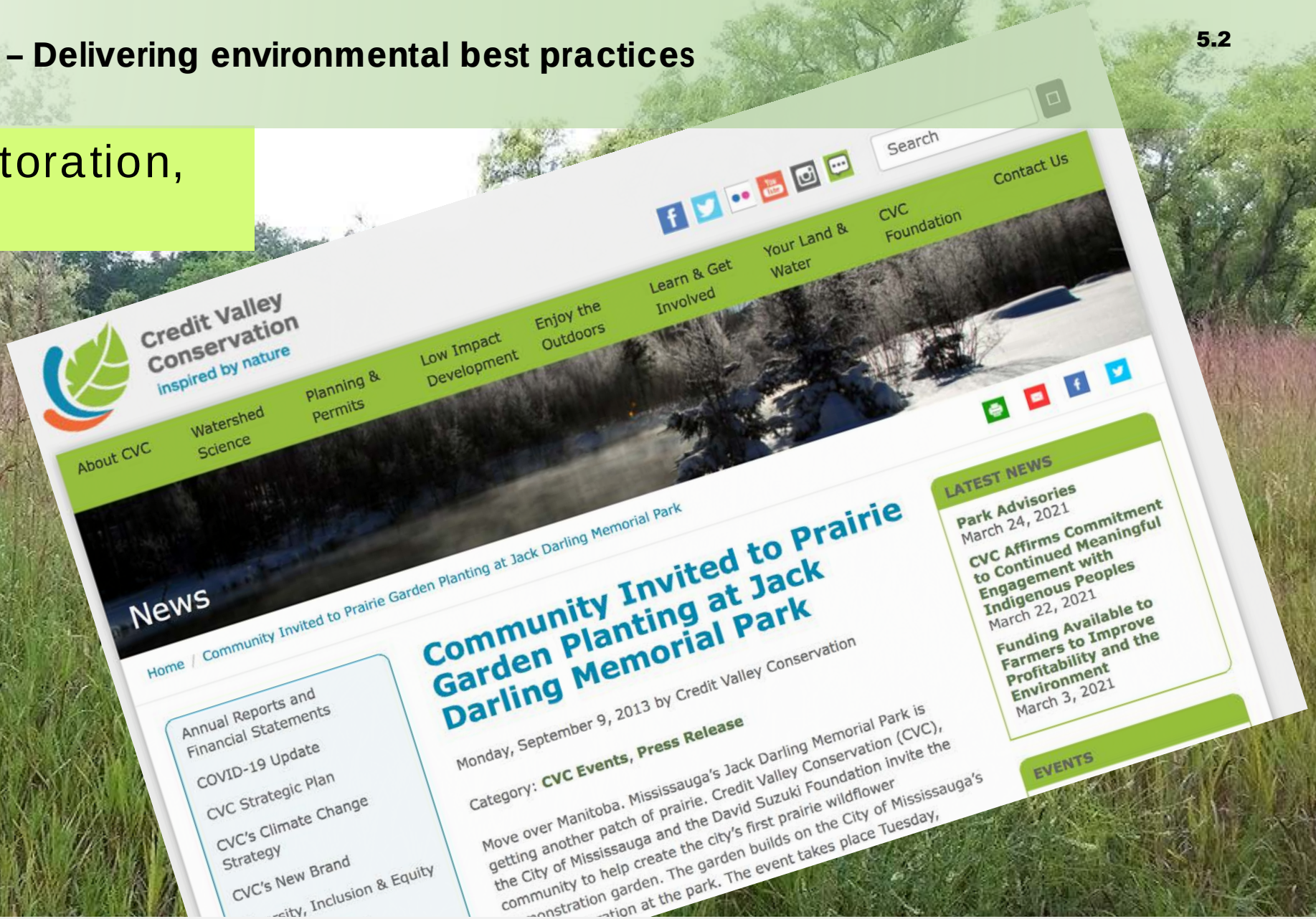
Needs.
Wants.
Solutions!

During thousands of years of evolution, native fauna and flora learned how to use our local climate and terrain.

Now it's our turn.



Tallgrass Prairie Restoration, Jack Darling Park



Tallgrass Prairie Restoration, Jack Darling Park

"This is a chance for avid gardeners and beginners alike to learn all about prairie wildflowers and how they can enhance our home gardens," said Mike Puddister, CVC's Director of Restoration and Stewardship.

Blooming Boulevards' best practices

We collect seed ethically…

…from indigenous seed sources…

…and grow our own plants…

…using species native to the south Credit River Watershed (ER 7E-4).

List of the Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E)

March 2017

Compiled by Michael J. Oldham
Natural Heritage Information Centre,
Science and Research Branch, Ontario
Ministry of Natural Resources and Forestry

Which should be planted in Mississauga?

Blue Vervain
Verbena hastata

Hoary Vervain
Verbena stricta

List of Vascular Plants of Ontario's Carolinian Zone (Oldham 2017)

CZ	CZ RESTR	SCIENTIFIC NAME	ES	CK	LB	MD	EL	OX	HN	BR	NG	HM	7E4	S-RANK	COSEWIC	SARO	ENGLISH NAME	FAMILY	CAROLINIAN ZONE NOTES
R	**CZ**	***Campsis radicans***	**R**	**R**		IR					IR	IR		**S2?**			**Trumpet Creeper**	BIGNONIACEAE	**some CZ populations are likely escapes from cultivation**
IR		*Catalpa bignonioides*					IR		IR		IR			SE1			Southern Catalpa	BIGNONIACEAE	
IR		*Catalpa ovata*				IR	IR					IR		SE1			Chinese Catalpa	BIGNONIACEAE	
IR		*Catalpa speciosa*	?	IR			IR	IX		IX	IR	IR	IR	SE1			Northern Catalpa	BIGNONIACEAE	
C		*Phryma leptostachya*	C	X	X	X	X		C	C	C	C	**R**	S4S5			Lopseed	VERBENACEAE	
R	**CZ**	***Phyla lanceolata***	**R**	**R**	**R**									**S2?**			**Northern Fogfruit**	VERBENACEAE	**including Lippia lanceolata**
IR		*Verbena bracteata*	IR	IR	IR	IR	IR	IX	IR	IR		IR	IX	SE3			Large-bracted Vervain	VERBENACEAE	
C		*Verbena hastata*	C	X	X	C	C	X	C	C	C	C	C	S5			Blue Vervain	VERBENACEAE	
IR		*Verbena incompta*										IR	IR	SE1			Common Clasping Vervain	VERBENACEAE	including reports of V. bonariensis
R	cz	*Verbena simplex*	**R**		**H**		**R**		**H**		**H**	**R**	IR	S4			Narrow-leaved Vervain	VERBENACEAE	
R		*Verbena stricta*	**R**	**R**	**R**	**R**	**R**	X	**R**	**R**	**R**		**R**	S4			Hoary Vervain	VERBENACEAE	
C		*Verbena urticifolia*	C	X	X	X	X	X	C	C	C	C	C	S5			White Vervain	VERBENACEAE	
hyb		*Verbena x deamii*			hyb									hyb			(Verbena bracteata X Verbena stricta)	VERBENACEAE	including V. x dodgei
hyb		*Verbena x engelmannii*	hyb		hyb	hyb	hyb		hyb					hyb			(Verbena hastata X Verbena urticifolia)	VERBENACEAE	
hyb		*Verbena x rydbergii*		hyb				hyb						hyb			(Verbena hastata X Verbena stricta)	VERBENACEAE	
		Proboscidea																	

We choose species that provide abundant pollen and nectar across the growing season.

We facilitate boulevard garden hubs which create habitat links.

Site assessment:
Jitendra's boulevard garden – May 2020

Family and neighbours are engaged

Jitendra's family planting the garden – May 2020

By fall, even 1st year gardens produce flowers well-used by wildlife and seed that will disperse.

Jitendra's boulevard garden – Oct. 2020

The gardens connect larger green spaces, creating habitat linkages.

Jitendra's family have inspired 7 neighbours to sign up for a garden in 2021. They are spreading the word...

2. Engagements and Partnerships

Moving forward together

Community benefits: Spruce Park 2019

Community benefits

Community benefits: Spruce Park 2020

Community benefits

Conserves water
Reduces runoff

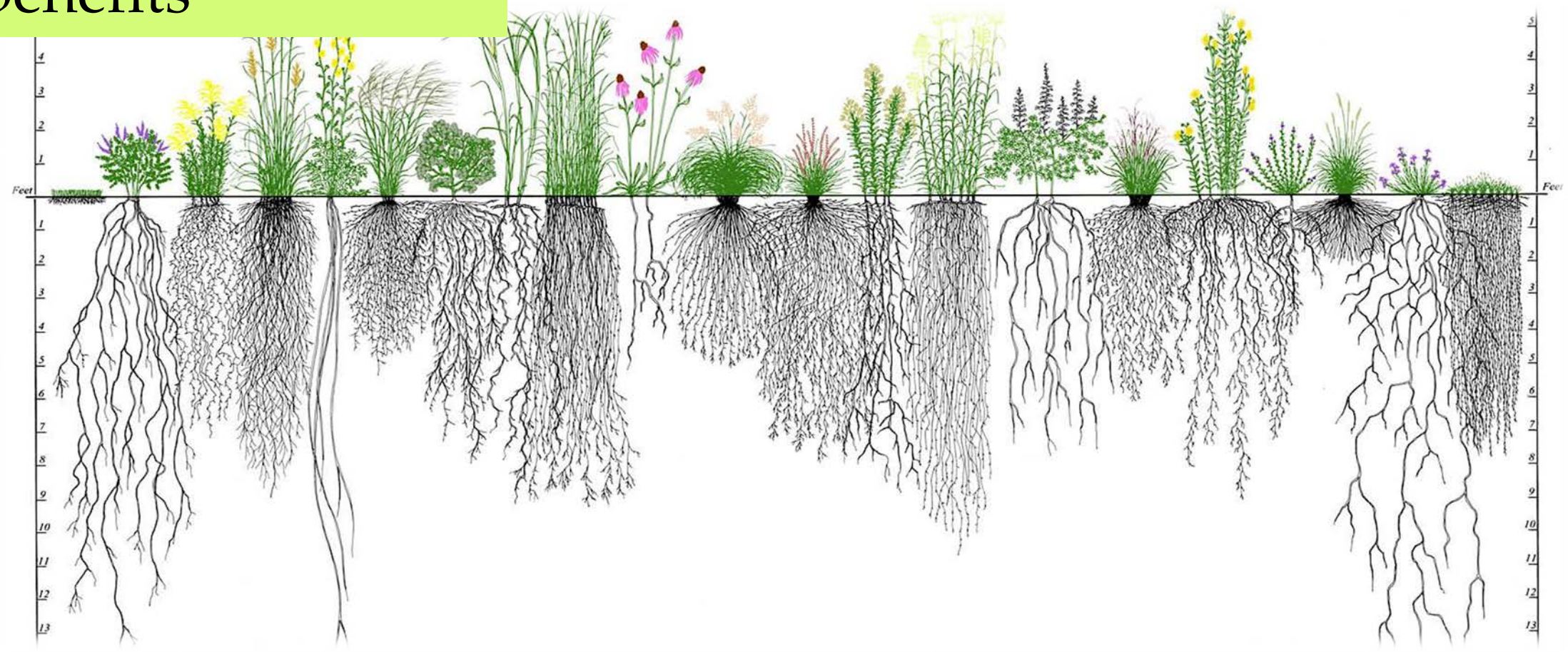
Community benefits

Needs > Wants > Solutions!

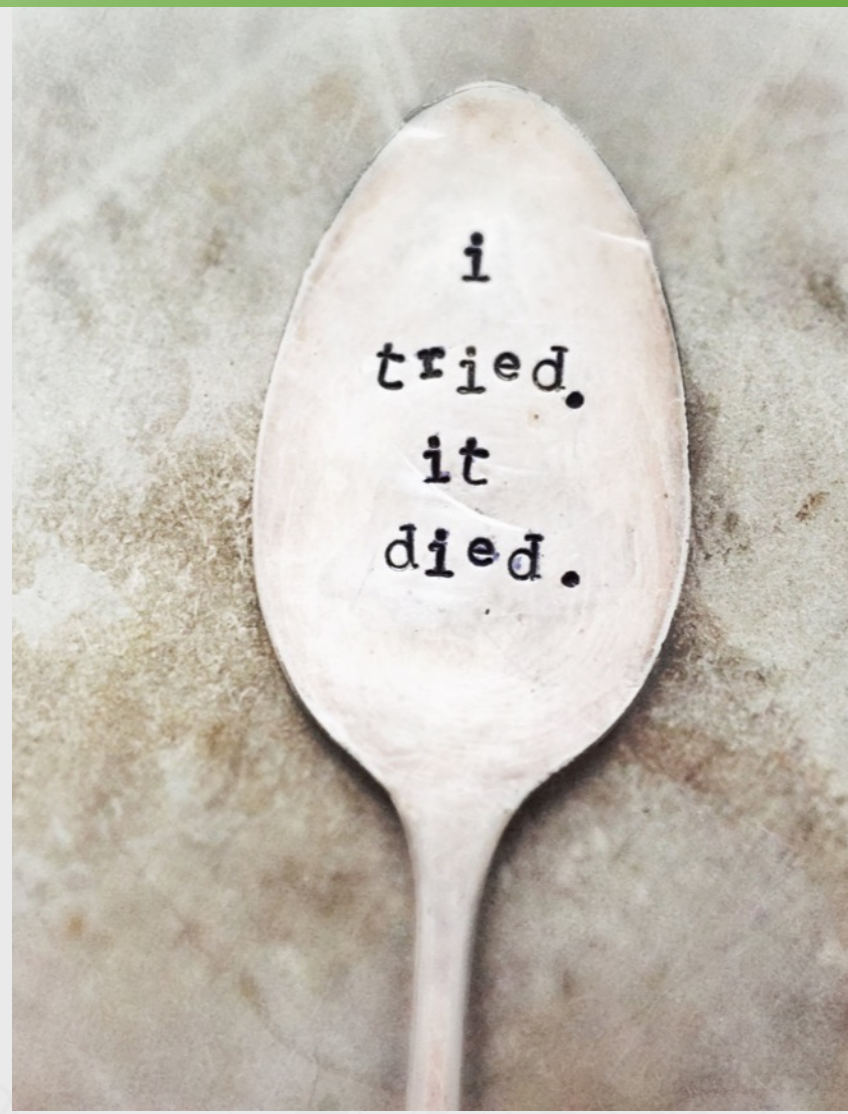
Reduces CO_2 emissions

Community benefits

Community benefits



Community benefits



3.

Expanding our services

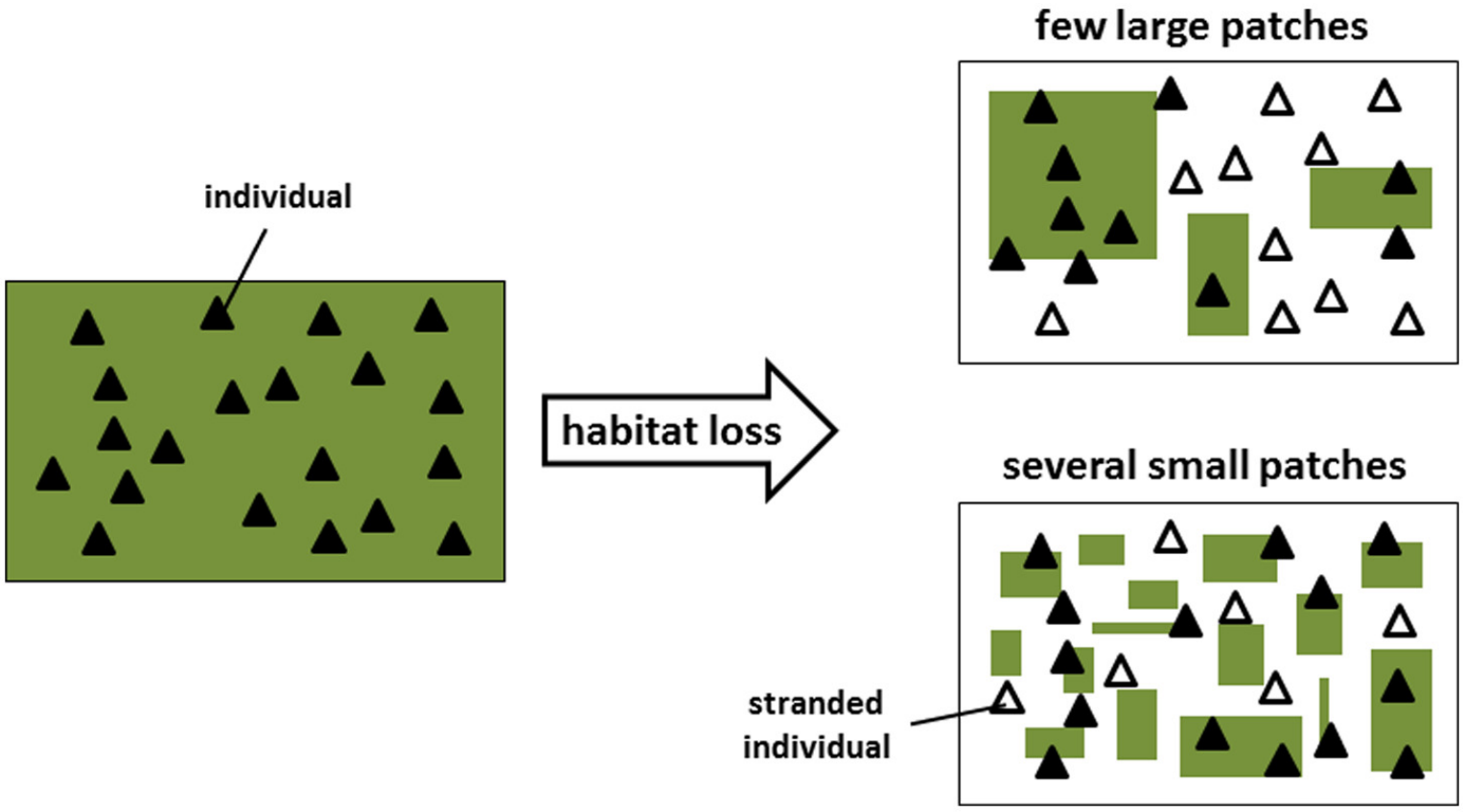
GROWING THE FUTURE – Expanding our services

- Replacing grass on residential boulevards with native plants offsets habitat loss.

- Providing forage and nesting services, so insects and other wildlife may use these areas to breed, promotes wider population distribution.

- Our garden corridors present a variety of ecological services, increasing species diversity and resilience as populations adapt.

We are working to expand structural and functional connectivity



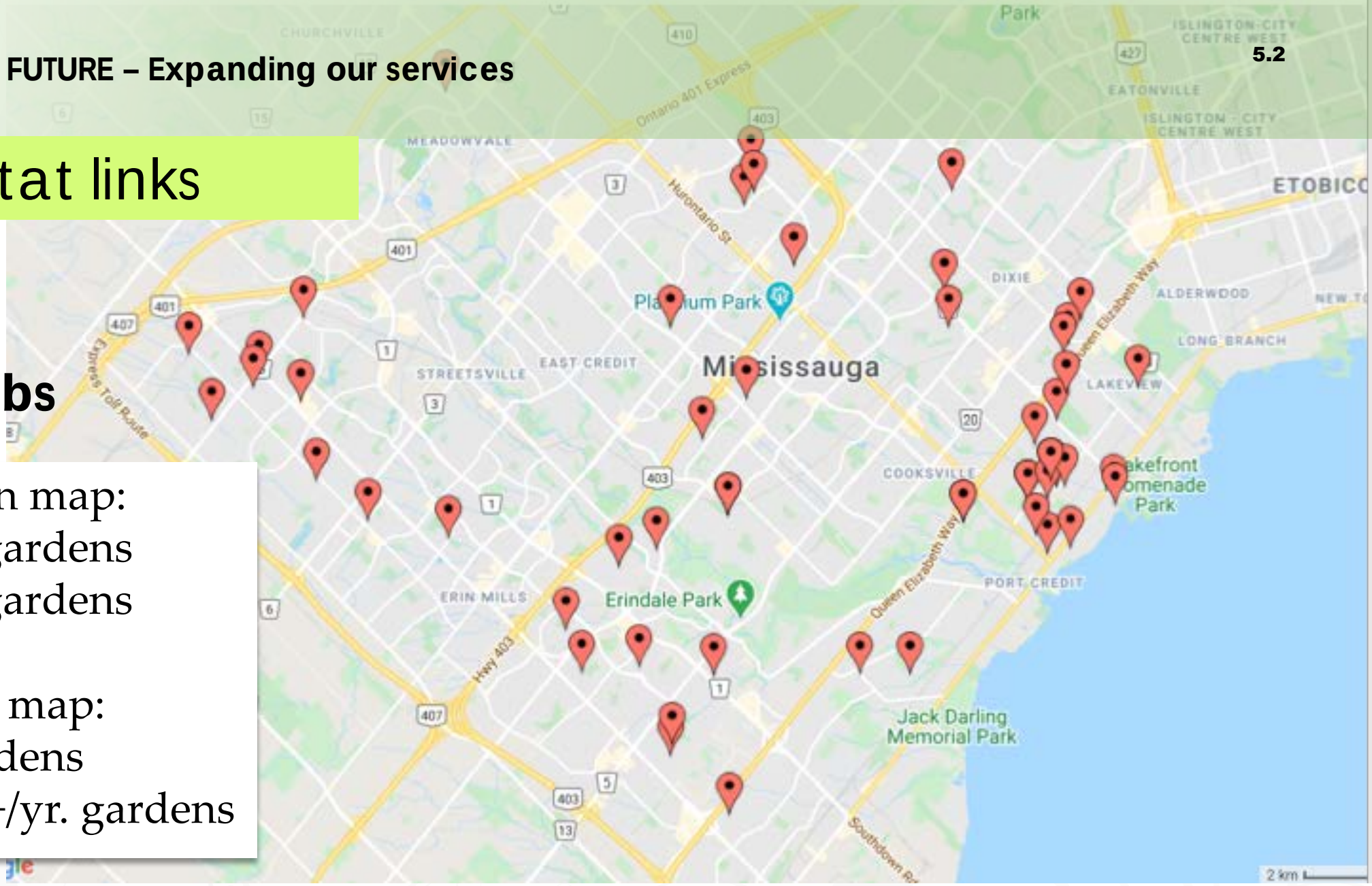
✓ Habitat links

Creating garden hubs

Years 1 & 2 on map:

- 2019 = 13 gardens
- 2020 = 39 gardens

Year 3 not on map:
2021 = 75 gardens
2022 …= 150+/yr. gardens



✓ Habitat links

We are creating garden hubs that form corridors to link park patches.

Map shows 2019-2020 gardens.

Establishing functional corridors connecting community parks and parkettes promotes species gene flow.

Core Habitat, Habitat Edge and Connectivity

Maximum habitat interior (core habitat) and minumum edge

Maximum habitat edge and no interior habitat

Connect core habitat 'nodes' to prevent habitat fragmentation

Images courtesy of Benjamin Penington, 1000 Friends of Florida

Maintain large circular nodes (core areas) of habitat to maximize interior habitat and minimize edge. Habitat edges occur at the border of incompatible land and are generally detrimental to priority wildlife species because edges are more accessible to predators and parasites that reduce the survival of their young. For this reason, wider wildlife travel corridors are better. Wildlife also need to be able to travel through uninterrupted, contiguous habitat.

4.

Finding solutions

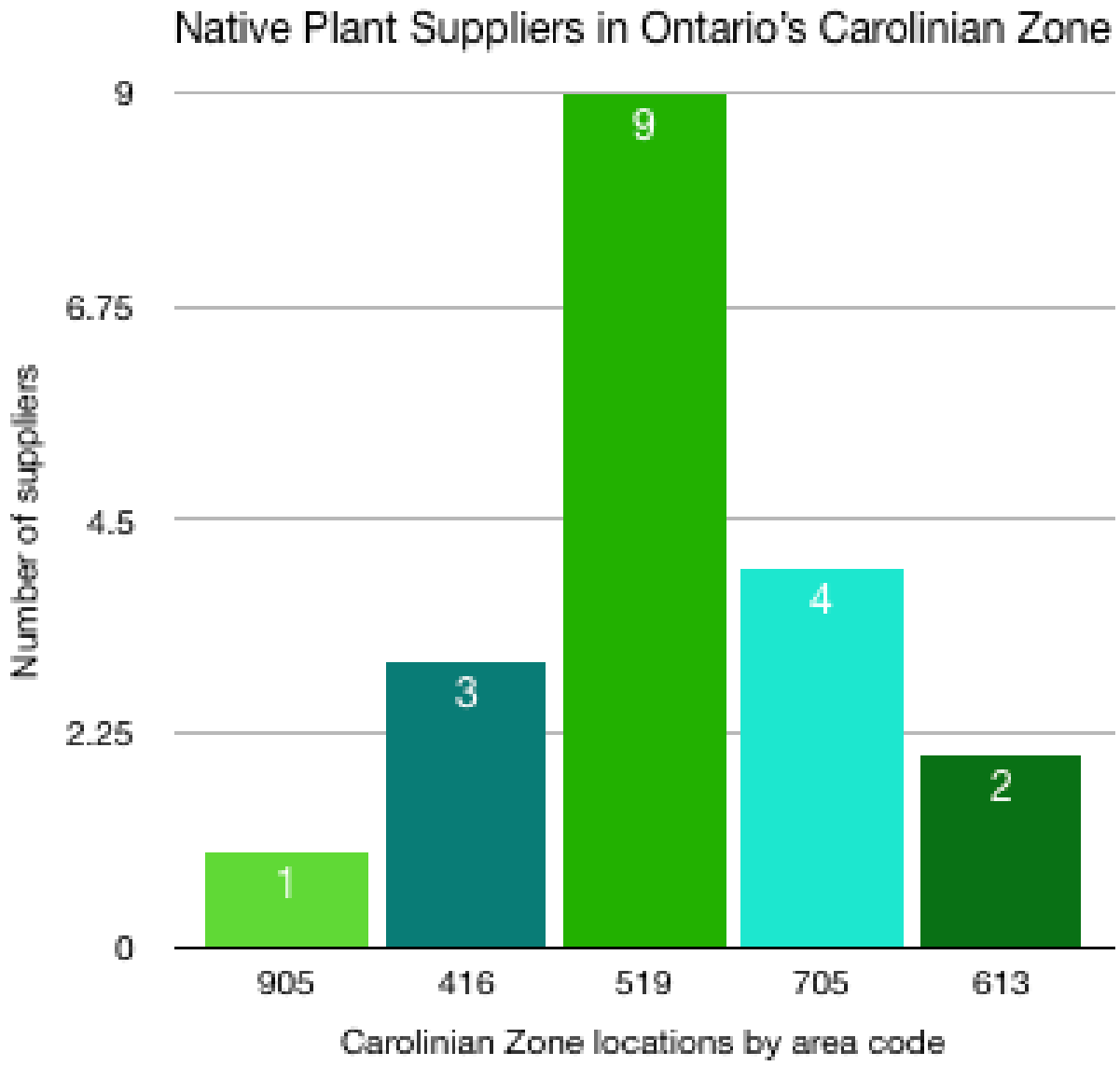
Sourcing Credit Watershed seeds

One of our mandates which supports the LGMP and the CCAP is the **preservation of Natural Heritage**. That's why we are very careful with our species selection and use seeds from local sources as much as possible.

Seed sources

At present, the City sources its native plant material and seeds from suppliers in Vineland and Uxbridge - both different ecoregions than south Mississauga's 7E-4. Other seed source locations:

Puslinch, Mulmur, Omemee, Peterborough, Kilworthy, Mono & Orangeville , Owen Sound, Pefferlaw, Kitchener, **Claremont,** Frankford, Melancthon, Guelph, Cobden, St. Williams, Port Robinson, Tiverton,Mount Forest,



GROWING THE FUTURE – Finding solutions

Wildflower Farm in Coldwater is 147 km from Port Credit

These seeds are Ontario natives but are not sourced from plants in the Credit River watershed

Local seeds are not widely available to conservation groups, who must source plant and seed material further afield.

If we used seed from wild plants growing in our own local prairie remnant areas, we could better preserve our local ecosystem

– Society for Ecological Restoration, Ontario Chapter, 2010

Raising our own plants would help protect the inherent adaptive traits of our indigenous Credit River watershed species, potentially increasing resilience to climate change stress.

Scale is a factor

We are limited in what we can do:

- we need a reliable supply of indigenous plants - and that doesn't exist.
- So, we raise the plants ourselves.
- Our present production is relatively small
- We need a place to do this on a larger scale.

3,000 native seedlings grow in my spare room.

GROWING THE FUTURE – Finding solutions

e option to keep up to 10% of the plants they grow.

* Required

8 trained volunteers are growing 1,444 more in their basements

At 7500 sq ft/yr, we will cover 1.75 acres (.7 hectares) in 10 years.

This is not enough.

In order to scale up our efforts, we need a facility, such as a **municipal greenhouse**, where many more native plants can be grown to use in City environmental initiatives.

A greenhouse = more, better-adapted native plants

- Leased space to community environmental groups.
- Used for instruction and raising awareness.
- Used to provide plants for restoration of Natural Heritage sites.

I would like the City to provide a greenhouse for use by community conservation groups to grow native plants.

It could also function as a community environmental education center.

Inspiration

Kayanase Greenhouse, based on the Six Nations Reserve, near Brantford, Ont.

Maajiigin Gumig Greenhouse

Aamjiwnaang First Nation and Return the Landscape have a working relationship in developing a native plant nursery. Shell Canada funded the building of this greenhouse and provides continual support for this project.

We are working together to increase our inventory of native species. Currently we grow more than 150 species suitable for different soil types, moisture levels, and shade tolerances. View a plant list **here**. We supply native plants to Degroots Nurseries and also sell directly from the Maajiigin Gumig greenhouse. We are scheduled to be open for sales on Thursdays, but feel free to stop by any time during the week; if we are there, we will help you pick out the plants that are right for your site.

Green belt Native Plant Center

Staten Island, NY

Greenbelt Native Plant Center

The Greenbelt Native Plant Center (GNPC), a facility of the New York City Department of Parks & Recreation, is a 13–acre greenhouse, nursery, and seed bank complex located on Staten Island, NY.

- GNPC Home
- Mission
- Products and Services
- Programs
  - Greenhouse/Nursery Production
  - Founder Seed Production
  - Seed Collection & Banking Program
- Projects In Partnership
- History
- Education, Volunteers, and Interns
- Contact Us/Staff

Greenhouse/Nursery Production

The Greenbelt Native Plant Center's chief mission is to propagate and grow native plants from appropriate local ecotypes for New York City habitat restoration. We collect seed from local plant populations, then germinate and grow plants to the size needed for such restorations.

Greenhouse Program

Plant propagation requires an understanding of how dormant seeds germinate in the soil of their natural environment. Our native seeds have evolved to withstand the harsh winter conditions of the Northeast, so prior to propagation in the artificial conditions of the greenhouse, these and other environmental triggers must first be replicated to break seed dormancy. This involves using physical and biological processes specific to each species. For example, some plants set seed in late summer and eventually make their way into the soil where they are exposed to months of cold, wet conditions before they germinate. Other seeds are eaten by birds and are exposed to stomach acids before they are deposited into the soil.

Many of these pre?conditions have been documented, but many other species are unpredictable, even with the use of published propagation techniques. **As we develop our own protocols for the germination of the species native to New York City and the region, we will post our protocols on these pages.**

At the GNPC, we:

- Propagate over 336 species of native plants collected from local wild populations.
- Propagate 200,000–400,000 individual plants annually.
- Maintain six greenhouses with 17,000 square feet of bench top production space.
- Maintain a 1,105 square foot propagation range with heated bench top and automated misting system.

Great Lakes Greenhouse Gives Native Plants a Second Chance

Posted by Janel Crooks, Hiawatha National Forest, U.S. Forest Service in Forestry
Feb 21, 2017

Volunteers help harvest native seedlings at the Hiawatha National Forest greenhouse in Marquette, Mich. U.S. Forest Service photo.

"Coordinating all the actors and tasks necessary to respond to fragmented, heterogeneous and dynamic ecosystems in cities involves significant cooperation. **Partnership is a cornerstone of urban ecosystem integrity."** J.F. Cerra / Landscape and Urban Planning 157 (2017) 586–597

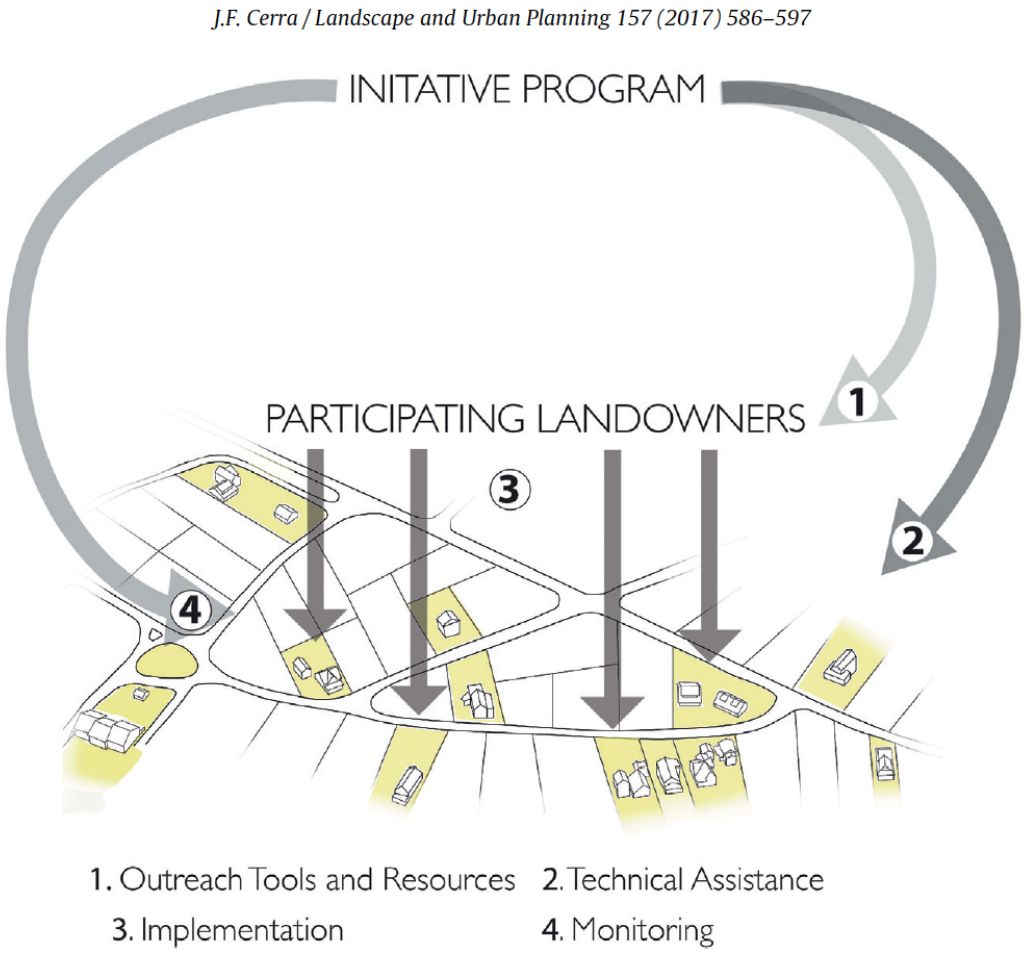


Fig. 3. Community-based initiative strategy diagram.

Thank you!

Blooming Boulevards
Connecting Neighbourhoods to Nature

• www.bloomingboulevards.org

Connecting neighbourhoods to nature…

Blooming Boulevards

www.bloomingboulevards.org

- Native Pollinator Gardens
- Education
- Community Outreach
- Environmental Advocacy