# What's in a name? Challenging the commodification of pollination through the diverse economies of 'Bee Cities'

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## Abstract

One million species are threatened with extinction globally, including more than half of the native bee species in North America. In Canada, as of July 2020, 42 municipalities have signed a resolution to commit to the standards of the Bee City Canada program which includes creating and enhancing pollinator habitat, along with celebrating and raising awareness about pollinators in their communities. Our central argument is that the commodification of pollination has detrimental effects on people, pollinators, and ecosystems, and that a diverse economies framework is one conceptual model that can help shift our perspective. Within the 'save the bees' narrative, a capitalocentric, unidimensional image of pollination persists, driven by particular forms of market power and domination. Well-intentioned individuals and groups may be constrained by industry-dominated messaging that limits their understanding of appropriate interventions. Meanwhile, Bee City Canada offers municipalities the opportunity to engage in conservation efforts by starting *where they are* and building on a network of Bee Cities across the country. We conducted a collective case study involving in-depth interviews with members of Ontario Bee Cities. Our thematic interpretive analysis shows how a diverse economies framework can help us to understand the value and contributions of this initiative in previously undervalued and under-recognized ways and how they help to advance a whole-of-community approach. It is only through decentering the hegemonic market-based view of pollination that true conservation of bee diversity, and associated pollination services, can be prioritized. Our findings show that Bee Cities can animate a vibrant political ecology through a collective municipal identity, by centering bees (and other pollinators by proxy).

**Keywords:** diverse economies, political ecology, biodiversity, commodification, pollinators

## Résumé

Un million d'espèces sont menacées d'extinction dans le monde, y compris plus de la moitié des espèces d'abeilles indigènes d'Amérique du Nord. Au Canada, 42 municipalités (en date de juillet 2020) ont signé une résolution pour s'engager à respecter les normes du programme Bee City Canada, qui comprend la création et l'amélioration de l'habitat des pollinisateurs, tout en célébrant les pollinisateurs et en sensibilisant le public. Notre argument est que la marchandisation de la pollinisation a des effets néfastes sur les personnes, les pollinisateurs et les écosystèmes. Un cadre «d'économies diverses» est un modèle conceptuel qui peut aider à changer notre perspective. Dans le récit «Sauvez les abeilles», une image capitalocentrique et unidimensionnelle de la pollinisation persiste, motivée par des types particuliers de pouvoir de marché et de domination. Les individus et les groupes bien intentionnés peuvent être contraints par des messages dominés par l'industrie, ce qui limite leur compréhension des interventions appropriées. Pendant ce temps, Bee City

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Canada offre aux municipalités la possibilité de s'engager dans des efforts de conservation, en s'appuyant sur un réseau de villes d'abeilles à travers le Canada. Nous avons mené une étude de cas collective comprenant des entrevues approfondies avec des membres de Ontario Bee Cities. Notre analyse interprétative montre comment un cadre «d'économies diverses» peut nous aider à comprendre la valeur et les contributions de cette initiative plus largement, et comment il contribue à faire progresser une approche communautaire de manière sous-reconnue. Le décentrage de la vision hégémonique de la pollinisation basée sur le marché permet de prioriser la conservation de la diversité des abeilles et les services de pollinisation associés. Nos résultats montrent que Bee Cities peut animer une écologie politique vibrante à travers une identité municipale collective, car elle place les abeilles (et par implication, d'autres pollinisateurs) au centre.

**Mots clés**: économies diverses, écologie politique, biodiversité, marchandisation, pollinisateurs

## Resumen

One million species are threatened with extinction globally, including more than half of the native bee species in North America. In Canada, as of July 2020, 42 municipalities have signed a resolution to commit to the standards of the Bee City Canada program which includes creating and enhancing pollinator habitat, along with celebrating and raising awareness about pollinators in their communities. Our central argument is that the commodification of pollination has detrimental effects on people, pollinators, and ecosystems, and that a diverse economies framework is one conceptual model that can help shift our perspective. Within the 'save the bees' narrative, a capitalocentric, unidimensional image of pollination persists, driven by particular forms of market power and domination. Well-intentioned individuals and groups may be constrained by industry-dominated messaging that limits their understanding of appropriate interventions. Meanwhile, Bee City Canada offers municipalities the opportunity to engage in conservation efforts by starting *where they are* and building on a network of Bee Cities across the country. We conducted a collective case study involving in-depth interviews with members of Ontario Bee Cities. Our thematic interpretive analysis shows how a diverse economies framework can help us to understand the value and contributions of this initiative in previously undervalued and under-recognized ways and how they help to advance a whole-of-community approach. It is only through decentering the hegemonic market-based view of pollination that true conservation of bee diversity, and associated pollination services, can be prioritized. Our findings show that Bee Cities can animate a vibrant political ecology through a collective municipal identity by centering bees (and other pollinators by proxy).

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## 1. Introduction

In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) released the most comprehensive biodiversity assessment of its kind calling for transformative change to ensure a sustainable future on Earth. In the report, 145 experts identified that up to one million species were threatened with extinction globally, many within decades (IPBES, 2019). In Germany, declines in insect biomass of between 76-82 percent have been documented (Hallmann *et al*., 2017), and globally over 40 percent of insects are at risk of extinction (Sanchez-Bayo & Wyckhuys, 2019). Of particular concern is the threat to pollinating insects, with bees accounting for the majority of biotic pollination. While most people are familiar with the European honey bee, Apis mellifera, globally there are an estimated 20,000 bee species, nearly the same number as all the mammal and bird species combined (Barrowclough *et al*., 2016; Burgin *et al*., 2018). In North America, more than half of the 4,000 native bee species are in decline with nearly one in four at risk of extinction (Kopec & Burd, 2017).

To enable solutions to worsening socio-ecological problems, society-nature interactions must be better understood (Blaikie & Brookfield, 1987). This article challenges the commodification of pollination services by managed bees, particularly the European honey bee in the context of industrial agriculture and Eurocentric, capitalocentric, perspectives of production. We examine the role of the national charitable organization, Bee City Canada, and its affiliates in this regard. A 'Bee City' is a city, region, municipality, or First Nations community that makes a signed commitment, through local leadership such as municipal governments, to support pollinators through education, habitat creation, and celebration. We consider how Bee Cities can help us think about biodiversity in the context of diverse economies. Our central argument is that the

commodification of pollination has detrimental effects on pollinators with the very real risks of catastrophic effects on ecosystems (including human communities), and that a 'diverse economies' framework is one conceptual model that can help shift our perspective. The benefit of such a shift would be greater attention paid to pollinators beyond those deemed worthy from a "capitalocentric" (Gibson-Graham, 1996, 6) perspective, which can create the conditions necessary to advance a whole-of-community approach (Marshman, 2019).

Using an 'economic' framing in research on movements that subvert the capitalist regime may seem contradictory at first, but we show that it is possible to shift away from the hegemonic notion of economy as based in financial capital. Instead, by engaging a political ecology lens (Svarstad and Benjaminsen, 2020), we can highlight the contributions of "the plethora of hidden and alternative economic activities that contribute to social well-being and environmental regeneration", referred to as *diverse economies* (Gibson-Graham, 2008, 618). Pollinators and their pollination services, one of many so-called ecosystem services, contribute to diverse economies and can help us recognize that 'economy' takes place in myriad, often undervalued and under-recognized, ways. By bringing these diverse economies to the fore of our research, we can make them "more real, more credible, more viable as objects of policy and activism, more present as everyday realities that touch all our lives and dynamically shape our futures" (Gibson-Graham, 2008, 618). In the following pages we question if and how Bee Cities contribute to a new measure of economic value in a society that is increasingly thinking about social and environmental costs alongside economic costs. We propose that initiatives within diverse economies, such as the Bee City movement, can help us highlight the different ways to define 'value.' Foregrounding these diverse economies can provide important environmental stewardship services by enhancing our concept of community, through storytelling, network building, and recognition. We acknowledge that we do not provide an exhaustive review, but rather one that is sufficient to contextualize our analysis of this particular movement.

## 2. Theoretical framework

A radical political ecology is about democratizing "the organization of the processes through which the environments that we (humans and non-humans) inhabit" (Heynen *et al*., 2006, p. 2). This means reaching beyond anthropocentric privilege, which enables some humans to inhabit and alter environments in destructive ways, to embrace responsibility and foreground reciprocity. Gibson-Graham (1996; 2006; 2017) call for a reparative stance with non-human "others" to achieve "new types of ecological economic thinking and ethical practices of living" (Gibson, Rose & Fincher, 2015, vii). They present an ontological reframing of 'difference' as diversity in their concept of diverse economies (1996, 2006). Their vision centers difference as a "proliferative space" where difference is valued and reveals what is possible, bringing "the background to the foreground" (p. 623). The diverse economies approach allows for recognition of activities that generate value but are monetized little, if at all. Diverse economies include "collective economic activities for which economic benefits are only one of, and often not the primary, set of motives" (Ballamingie, Poitevin-DesRivières & Knezevic, 2019, p. 2), but are now often evaluated in terms of their 'social returns' that are assigned monetary value.

Informal, unpaid, often marginal economic practices are also increasingly framed in economic terms to help demonstrate their "magnitude and effectivity" (Gibson-Graham, 2008, p. 617). Home care (including child, elder, hospice), volunteer work, and the benefits people get from nature are increasingly translated into financial terms. The diverse economies perspective provides some conceptual tools for better understanding how initiatives like Bee Cities create value. This perspective allows us to look at value as more than can be measured in monetary terms, and prompts us to think about how seemingly marginal contributions add up to meaningful value. The value they generate is non-monetary, but it can offer indirect economic benefits through conservation of natural resources and/or contributions to social capital. We bolster this with the whole-of-community approach to bring nuance to our analysis of Bee Cities.

The whole-of-community approach is concerned with relationships that move us toward place-based communities grounded in eco-social justice and equity (Marshman, 2019). This approach, well established in health care and emergency preparedness, emphasizes comprehensive, contextualized analyses of issues, that consider all actors and the relationships among them. In these established contexts, a whole-of-community approach is a way to collectively understand what the community needs and how to best "organize and

strengthen their assets, capacities, and interests" (FEMA, 2011, p. 3). We apply this in the context of diverse economies. This novel approach enhances social well-being by widening the circle of inclusion to the more-than-human actors and co-creators of urban spaces.

Central to the whole-of community approach, is the notion of 'othering.' Othering is commonly framed in negative terms, as an exclusive or divisive concept (Haraway, 1991; Plumwood, 2002). In the case of nature, othering can create a sense of distance or "remoteness [that] negates responsibility" (Plumwood, 2002, p. 16). 'Othering' is inherently political, as it often serves to stigmatize, racialize, discredit, fetishize, and otherwise maintain a subordinate status of the 'other' (Said, 1979). Canales (2000) calls this exclusionary othering, which extorts power and privilege to maintain a superior or dominant status.

Biodiversity loss has so accelerated that it is now called a mass extinction. Contributing factors include global climate change and critical habitat loss, which are largely the direct result of human activity. In a capitalocentric perspective, profit and surplus production are prioritized, resulting in the socio-ecological crises we are faced with today. For example, in 2019, 24.6 million acres of wheat were planted in Canada, making it Canada's largest crop and biggest export earner (Statistics Canada, 2019). These large swathes of wind pollinated monocultures effectively create food deserts for pollinators, deplete soils, and reduce wildlife habitat. Globally, industrial agriculture is the primary cause of deforestation with catastrophic consequences for species loss, the full extent of which is difficult to understand given the time delays in how species become extinct (Rosa *et al*., 2016). Fundamental to a capitalocentric perspective is the perception of nature as the 'other', which provides a convenient platform from which to extract and abuse resources.

In contrast, 'inclusionary othering' is a "process that attempts to utilize power within relationships for … coalition building" (Canales, 2009, p. 19). Marginalization can only be addressed by acknowledging and naming existing inequalities and injustices and the roles that different actors play in them. Inclusionary othering recognizes that a power imbalance exists and it uses "power to create transformative relationships" and as a strategy to connect as allies (Canales, 2000, p. 26). For example, affirmative action and employment equity policies are forms of inclusionary othering. Bees have no control over pollinator-related policy and therefore are not starting from a place of equal opportunity. In other words, we must recognize their difference in order to advance diverse bio-communities. Inclusionary othering confers intentionality that uses "the authority inherent in positions of power to transform … institutions, and communities" in ways that empower, uplift, and expand the boundaries of self (Canales, 2000, p. 27). In effect, framing allyship as inclusionary othering confers resistance to things like 'colour blind' approaches to policy, which deny the historical context and resulting inequalities (Mapedzahama, 2019). These conceptualizations of othering are not dichotomous, rather, they are complex, inter-relational and context specific.

In terms of bees as the 'other', inclusionary othering is necessary for a whole-of-community approach. As humans are called on to give voice to bees and other pollinators, initiatives like the Bee City movement create the space for a whole-of-community approach that embraces and leverages inclusionary othering of bees and other pollinators. Humans can use their decision-making power and authority to advocate for better practices that help rather than harm pollinators. There are boundless measurable and immeasurable economic, social and environmental benefits to healthy pollinator populations and the ecosystem services they provide. Their value can be recognized by foregrounding our interconnectedness, decentering anthropocentric privilege, and recognizing their critical role in ecosystems.

This approach is not evident in policies and practices relevant to pollinators that still emphasize the role of managed bees, particularly the honey bee, Apis mellifera. Many management practices emphasize honey bee-centric interventions that favor the easy mobility of their hives. Historically, honey bees are the only species assessed in risk assessments of agricultural pesticide use, leaving huge gaps in our understanding of the impacts on other pollinators (Willis Chan & Raine, 2021; Franklin & Raine, 2019). This "surrogacy approach" (Franklin & Raine, 2019, p. 1) provides little consideration to native bees nesting and foraging in the same area who do not benefit from the extensive breeding programs or celebrity status that honey bees do.

*Storytelling: changing the narrative*

We hope to highlight how the multiple benefits of Bee Cities and care for pollinators are enacted, and the value this provides. Storytelling is one of the oldest art forms and infiltrates nearly all human interaction

(Gottschall, 2014). The value of storytelling is the rich narrative that conveys emotions, experiences, social and cultural meanings. The presence of good storytellers in some communities is associated with increased cooperation and teaching social norms (Smith *et al*., 2017). Gottschall (2014) calls us the "storytelling animal" (p. 11) describing how stories help us share communal experiences that unite people around common values. In some oral traditions, stories go beyond an art form or whimsical fairytale and provide the foundational teachings to pass knowledge between generations (Corntassel, Chaw-Win-Is & T'Lakwaddzi, 2009). Storytelling in different forms, "creates space for the 'Other', or those whose voices have been excluded or erased, to be included in the dominant discourse" (Thomas, 2005, p. 244).

While stories embody invaluable oral histories, cultural meanings and traditions, they can also perpetuate misconceptions, exclusion and inequality, and reproduce disadvantage (Pichler & Wallace, 2007; Pretty & Smith, 2004). For example, storytelling is foundational to food industry marketing. The idyllic farm imaginary still abounds in Eurocentric depictions of farm life (Bladow, 2015) and provides a convenient disguise for the real-life experience of farming, farm labor, and the realities of global food insecurity (Riley, 2015). Visual and digital storytelling can add to the impact of messaging. By "providing the supporting premises of a visual argument, viewers become engaged with, and even invested in a particular idea" (Riley, 2015, p. 274).

Managed honey bees dominate depictions of the 'pollinator', perpetuating industry-based priorities (General Mills, 2019; Haagen-Dazs, n.d.) and storytelling makes the dominant pollinator narrative successful. For example, the Cheerios® Bring Back the Bees campaign (General Mills, 2019) created a story around a missing bee by leaving a blank, cartoon bee-shaped space on the cereal box, and included a pack of wildflower seeds in every box. This campaign creates an illusion of a missing familiar character and the possibility (the imaginary) of the bee returning. By including a seed packet, it appears this campaign can help return the missing bee by encouraging consumers to plant wildflowers. This approach received mixed reviews, with some conservationists criticizing both the source, and the seed packs for containing seeds considered invasive in some parts of North America where they were distributed (Brown, 2017).

Storytelling remains the primary way that honey bees are privileged because humans appear to have limited capacity to *not* create stories out of the vast amounts of information presented through various media (Gotschall, 2014). Creating stories helps us to make meaning by "steep[ing] us all in the same powerful norms and values" (Gotschall, 2014, p. 139). The formula for creating the perfect fiction is "character + predicament + attempted extrication" (Gottschall, 2014, p. 186). The 'disappearing bees' narrative, combined with an air of mystery, fear, and images from mass marketing campaigns, creates the perfect conditions for our storytelling minds to engage.

Our objective is to challenge the hegemony of a capitalocentric view of pollination through a diverse economies framework. This framework can shed light on the commodification of pollination and the real and potential detrimental impacts on people, pollinators, and ecosystems. We hope to foreground how the diverse economies of pollination can contribute to a new narrative and a new measure of value. We take a normative stance that a whole-of-community approach to ecological concerns can provide economic value, albeit one that is difficult to assess using market-economy measurements of profits and efficiency. We acknowledge that the narrative we attempt to advance, like our understanding of the politics of ecological initiatives, is influenced by the first author's volunteer experiences with Bee Cities. We take an explicit critical position (Wodak, 2001, p. 9) that more-than-market economic activities are significant for community and ecological well-being, and that supporting such activities requires re-framing of challenges and solutions – in other words, it requires novel examples of storytelling.

## 3. Methods

We develop our argument through a multi-site, collective case study of Bee City Canada. A case study is an empirical inquiry that "investigates a contemporary phenomenon in depth and within the real-world context" (Yin, 2014, p. 16). Even though there are specific criteria for becoming a Bee City, the way those criteria are enacted is determined locally within each municipal affiliate. These criteria are supporting pollinators through education, habitat creation, and celebration. The analysis points to some of the intangible benefits as perceived by the participants. These perceptions, even though difficult to confirm or measure, still

have value. Qualitative research can provide a rich understanding of diverse populations and contexts, placing emphasis on meaning and experience (Johnson & Waterfield, 2004).

Data collection took place between October 2018 and July 2019 through 41 interviews with Bee City board members, volunteers, and municipal staff, ranging in length from ~0.5–2 hours. Seventeen of the 18 Bee Cities that were recognized in Ontario during that time participated in this qualitative study (Appendix A). We foreground the experiences and perceptions of the participants, along the lines of what Gibson-Graham (2014) refer to as "thick description and weak theory" which "observes, interprets, and yields to emerging knowledge" (p. S149).

Interview participants were asked about: motivations for becoming a Bee City, perspectives on the need for such a program, barriers and facilitators to implementation, details about their working group, project goals and sustainability, champions within their program, and overall Bee City plan. A thematic, interpretive analysis (Braun and Clarke, 2012) was undertaken with interview transcripts using NVivo v12. The research was approved by the Wilfrid Laurier University Research Ethics Board and where participants are identified, explicit consent was obtained.

## 4. The commodification of pollination

In North America, concern for pollinators has been mounting since the early 2000s when almost 40 percent of the honey bees in the United States disappeared, in addition to reports from Canada and Europe of millions of hives lost (Kosek, 2011; Van Engelsdorp *et al*., 2008). The phenomenon, named Colony Collapse Disorder (CCD), has since breached apiculture's borders to become part of the mainstream narrative (Klein & Barron, 2017b). While CCD events have decreased in recent years, concern for the overall health of honey bees continues to grow. Yet, often, the doomsday-style messaging we hear about the loss of bees is not about the overall value of *all* bees to ecosystems; rather it is about the impact on *human* well-being and what it may mean for human food sources and other economic measures (Phillips, 2020).

Similar to the naïve imaginary of the family farm and happy cows (Riley, 2015), we also inhabit an imaginary of happy bees as "hard-working hive-dwellers" making honey from foraging "in flowery meadows", flitting from flower to flower with their chubby, cartoonish yellow and black striped bodies (Colla, 2018, para. 3). This pollinator idyll, often presented and perpetuated by corporate players in the industrial food system, serves as a powerful form of visual storytelling (Riley, 2015).

The 2019 IPBES assessment noted that the monetary value of nature's contribution to people is an estimated US$24.3 trillion in the Americas alone. In terms of pollinators, at least 75 percent of food crops and 90 percent of flowering plants depend to some degree on animal pollination (IPBES, 2019). The loss of diversity and abundance of insects is leading to an ominously increasing pollination problem. In addition, the loss of pollinators could result in a loss of between US$235 billion and US$577 billion in annual global crop output (IPBES, 2016).

One of the threats to effective bee conservation is the co-optation of conservation efforts into the commodification of pollination. A key impact of this co-optation is "the subordination of wild bees to the capitalist penetration and financialization" of pollination services provided by the managed honey bee (Marshman *et al*., 2019, p. 3). Scientists and conservationists alike find themselves repeatedly explaining that there are more bees than honey bees in an effort to draw attention and conservation efforts to the lesser known wild bee species (Breeze *et al*., 2011; Colla & MacIvor, 2017; Fellows, 2017).

There is a growing literature in biology, ecology and entomology emphasizing the threats to pollinator populations (Alger *et al*., 2019; Biesmeijer *et al*., 2006; Willis Chan *et al*., 2019; Colla & MacIvor, 2017; Forister, Pelton & Black, 2019; Hallmann *et al*., 2017; IPBES, 2016; Sanchez-Bayo & Wyckhuys, 2019). Yet, there is little research on the human dimensions of bee conservation, particularly in the urban context, and thus we know little about the relationship(s) between people and pollinators, particularly the non-Apis species. In existing examples of social science research in this area, managed honey bees still often dominate the conversation (Lorenz, 2016; Maderson & Wynne-Jones, 2016).

Animal pollination, including pollination by bees, is credited with pollination services worth hundreds of billions of dollars annually. The gravity of bee declines cannot be stated enough: insect pollinators contribute

significantly to dietary micronutrients, global agriculture (rural and urban) (Steffan-Dewenter, Potts & Packer, 2005), and provide cultural, medicinal, and educational value as well as contribute to health and well-being (Waliczek & Zajicek, 2016). Insects enable pollination of angiosperms (the flowering plants that produce seeds), which produce food and resources for non-human animals (National Research Council, 2007), utilize carbon dioxide, provide oxygen, help purify water, and reduce soil erosion (USDA, n.d.; Government of Ontario, 2019). However, the commodification of pollination and the use of bees as livestock dilutes conservation efforts by perpetuating a unidimensional view of pollination. Conserving biodiversity is of utmost importance (IPBES, 2019), and yet financial and industry interests are threatening bee diversity by prioritizing honey bees rather than diversifying efforts for all pollinating insects.

The European honey bee is the most widespread managed pollinator in the world with an estimated 81 million hives (IPBES, 2016), and described by some as "the single most important pollinator species" (Aizen *et al*., 2009, p. 1579). The legible economic role of the honey bee renders the importance and contribution of non-Apis species under-recognized and undervalued (IPBES, 2016). For example, Breeze *et al*. (2011) showed that honey bees provide only about one third of pollination services needed in agriculture in the United Kingdom.

In industrialized agriculture, the European honey bee is responsible for pollinating large quantities of food crops. But wild, native bee species, especially the specialist bees who have co-evolved with plants in specific ways, are at least as important, if not more in some cases. For example, the squash bee is the most important pollinator of Cucurbita crops such as pumpkins, squash, and zucchini (Farms at Work, n.d.; Willis Chan *et al*., 2019). These crops have heavy, sticky pollen and depend on animal, rather than wind, pollination. Other bees such as the European honey bee or the common Eastern bumble bee (Bombus impatiens) will feed on cucurbit pollen, but they may "discard" or clean the pollen off their bodies before foraging from other flowers (Portman, Orr, and Griswold, 2019) which limits their efficacy as pollinators of these crops.

The commodification of managed bees threatens both managed and wild bees. The honey bee is a "charismatic species" (see Marshman, Blay-Palmer & Landman, 2019) and it dominates messaging about pollinators, diluting conservation communications. Disease spillover can occur between managed honey bees and wild pollinator populations (Alger *et al*., 2019; Graystock *et al*., 2016; Mallinger, Gaines-Day & Gratton, 2017; Manley *et al*., 2019; MacPhail, Richardson & Colla, 2019; Murray *et al*., 2019) and other pollinating insects (Bailes *et al*., 2018) and is already seen between honey bees and native bee species (Manley *et al*., 2019).

Another negative impact on wild bee species is that managed bees can be transported into new environments and compete for floral resources (Cane & Tepedino, 2017; Goulson & Sparrow, 2009; Henry & Rodet, 2018; Hung *et al*., 2019; Torné-Noguera *et al*., 2016) not just with wild bees but also other pollinating insects (Lindström *et al*., 2016). Some wild bee species travel only short distances to feed (Gathmann & Tscharntke, 2002), whereas the European honey bee can travel many kilometers to forage for food, encroaching on already occupied foraging areas of wild bees. Honey bees (up to 100,000 in a single hive) are imported to land consumed by industrial monocultures to provide pollination services. Although there is little research on this, we speculate that this can result in the dispossession of foraging land for native bee species. Transportation of managed bees to the large swathes of monocultures of industrial agribusiness both stresses managed honey bees making them more susceptible to illness (Melicher *et al*., 2019; Simone-Finstrom *et al*., 2016), and hastens the movement and transmission of disease between managed and wild bees (Bailes *et al*., 2018). Stress is a risk factor for latent viruses to become active (Chen, Evans, Feldlaufer, 2006) and bees are increasingly stressed due to deteriorating environmental conditions (Klein *et al*., 2017a), pesticide use (Doublet *et al*., 2015), and poor nutrition (Tosi *et al*., 2017). Managed bees may also have negative impacts on native plant populations by facilitating the spread of invasive plant species (Colla & MacIvor, 2017).

We aim to re-signify pollination as a product of diversity rather than profit, decenter managed honey bees in pollination, and draw awareness to the interactions between a highly managed bee species and the wild bees that share the same spaces and resources. This is an intentional challenge to 'bee-washing' (de Keyzer, n.d.) or "green-washing as applied to potentially misleading claims for augmentation of native and wild bee populations" (MacIvor & Packer, 2015, p. 10) which also applies to the commodification of pollination and an emphasis on honey bees. Our intention is not to vilify bee keepers or the bees they keep. For thousands of years

humans have had a meaningful relationship with honey bees, fascinating social insects that continue to provide ecosystem services and capture our imaginations. Beyond their pollination labor and the many products they provide for us, part of their intrigue is their social structure. They do not survive as individuals, but instead rely on their social hive where each bee has a critical role to play in the survival of the colony. Awe and appreciation for honey bees was captured during Bee City interviews. Pollinator working group volunteer Erica, a bee keeper who has been in the bee keeping community for almost a decade, expressed her awe:

> You have a monarchy, you have a single queen bee that's laying eggs for 50-60,000 bees that all live together, and somehow they all basically work as a single organism … certain bees go out and get the food, some get the water, some take care of the babies, there's bees that heat the adjacent bees and turn them into different kinds of bees. I have been in the bee world for eight years, and I probably know five percent or less of all information I could know about what's going on in a honey bee colony.

Kim is a volunteer and a champion in her community as one of the driving forces behind the Bee City designation in the City of Kitchener. Kim, a native bee advocate, thinks that the honey bee has drawn our attention to other pollinators:

> I think there's been a long history of cultural association with honey bees in particular. So cave paintings in France… showing people stealing honey from the bee tree. And then ancient Egyptians keeping bees in little clay houses… There's just no other animal that fascinates us like the hive mentality, the division of labor, that a honey bee colony, a hive, gives us… gives us this insight into being social, into working, using what's called a 'hive mind', working for the common good…

To be clear, it is not the bees, nor often the bee keeper, that are responsible for saturating conservation messaging. While the increasing numbers of Canadian cities becoming Bee City affiliates indicates a growing awareness and concern for the plight of pollinators, overwhelming industry marketing has resulted in concerned citizens making decisions that potentially threaten conservation efforts. In order to 'save the bees' – messaging popularized by media campaigns like the Cheerios® Bring Back the Bees (General Mills, 2019) – people are turning to backyard bee hives (Sciarpelletti, 2019). However, these well-intentioned activities can negatively impact native, unmanaged bees through things like disease spillover and competition for floral resources (Colla & MacIvor, 2017; Manley *et al.*, 2019).

Reaching beyond anthropocentric privilege means putting aside even the human need for connection. This does not mean distancing the human from the biotic community, but rather recognizing and animating realized and unrealized mutualisms as an act of reciprocity. A Bee City Canada affiliate who wished to remain anonymous due to the contentious nature of the issue, expressed concern:

> People get that there's an issue with bees, right? But. I think there are interest groups, there are groups with certain interests that try to play on that. And say, "Do this and save the bees." But in reality, some of those things have been shown to not necessarily be that good for the bees. For example, you know there's a lot of research that's come out over the last few years that says placing honey bee hives on your roof within the city is not necessarily good, may not be good for native bees. Yet, a lot of groups, companies, private enterprises, you know will tout that on their sustainability, on their [corporate social responsibility] CSR reports.

The companies may claim to be 'doing their part' to help bees or other environmental causes. Critics would argue that these companies are hiding behind visual or rhetorical apologia when they are often the culprit of some of the biggest drivers of pollinator declines through large-scale agribusiness that destroys habitat, uses unprecedented amounts of chemical inputs, and creates what are effectively food deserts for pollinating insects

(Spivak, 2013). Renee runs Small Scale Farms in Southern Ontario and has championed the Bee City designation in two municipalities. She said, "It has to change on a cultural level or else it's just another gimmicky [pause]… you know what it is? It's another seed pack in a box of Cheerios."

The Executive Director of the Xerces Society for Invertebrate Conservation is famously quoted as saying "Conserving honeybees to save pollinators is like conserving chickens to save the birds" (as quoted in Sierra Club, 2018, para. 2). Marketing perpetuates the honey bee as the defining bee species when it is non-Apis species, outside of the spotlight of big food marketing and much of the public policy, that are endangered or of concern in North America and beyond. In Canada in September 2019, there were eight species of native bees identified as endangered or of concern, and due to insufficient research on most of North America's native bee species, this number is likely much larger.

In Canada, there are an estimated 5,600 commercial bee keepers and 1,400 hobby bee keepers, although hobbyists are likely under-reported (Canadian Honey Council, n.d.). Honey bee colony losses are of concern for commercial bee keepers, however, a 2019 study found strong evidence of adaptation to colony losses (Rucker, Thurman and Burgett, 2019) and contrary to popular media messaging, the European honey bee is not found on any endangered species list, primarily because of widespread global breeding programs to maintain populations due to their extensive use in industrial agriculture.

Fostering connectivity requires recognizing and valuing the contributions of all community members, both human and non-human, in a whole-of-community approach. There are multiple reasons to problematize industry-based, reductive views of pollination. **First**, commercial honey bees are generally used for monocultures, and the environmental risks associated with monocultures have been well understood for many years (Altieri, 1995; Magdoff, Foster and Buttel, 2000; Weis, 2007). They are now increasingly understood for monocultures of honey bee colonies as well (Chen, Evans & Feldlaufer, 2006).

**Secondly**, for some native bee advocates, there is a tension in the conversation about native bees and honey bees, so much so that it seems more appropriate to say native bees *versus* honey bees (Alaux, Le Conte & Decourtye, 2019; Colla & Nalepa, 2019; Durant, 2019; Goulson & Sparrow, 2009). There is also an existing tension between bee keepers themselves where distinctions are made between small scale and industrialized commercial bee keeping (Lorenz, 2016). Rather than alienate bee keepers in the face of a growing biodiversity crisis, it is important to unite stakeholders to find ways to "reconcile wild pollinator conservation with responsible and sustainable beekeeping practices" (Alaux *et al*., 2019, p. 3). Sustainability requires a critical perspective that looks beyond honey bees to inform regulatory decisions and conservation efforts (Franklin & Raine, 2019).

## 5. The Bee City movement

In light of the socio-ecological crises we face, Bee City certification provides one way to begin to engage communities in conservation issues, with potentially far-reaching impacts. In Canada, Bee Cities are municipalities and First Nations communities that sign a resolution to support and protect bees and other pollinators in the following ways: creating habitat, celebrating achievements, and raising awareness through education (Bee City Canada, 2019a; Bee City USA, 2019). As of March 2021, there are 48 Canadian Bee Cities, with 32 municipalities in Ontario with the Bee City designation where this research took place. In addition, councillors in the Regional Municipality of Waterloo Region voted unanimously in favor of becoming the first Bee Region in Canada (Anderson, 2019). This region comprises three cities (Kitchener, Waterloo, and Cambridge) and four townships (North Dumfries, Wellesley, Wilmot and Woolwich). The Regional Chair was instrumental in moving forward the decision, "Being a Bee Region is the right thing to do. It engages our community in a proactive way to help ensure our environment remains healthy, ecologically diverse and with a sustainable food supply", she said [Redman, K., personal communication.].

The Bee City movement began in the United States in 2012 in Asheville, NC, led by bee advocate Phyllis Stiles with the help of members of the Buncombe County Chapter of the North Carolina State Beekeeping Association (Stiles, P. Personal communication, as cited in Marshman *et al*., 2019, p. 6). In June 2018, Bee City USA joined the Xerces Society for Invertebrate Conservation, the world's largest pollinator protection organization (Bee City USA, 2019).

In 2016, environmentalist Shelly Candel championed the Bee City movement in Canada. After approaching several organizations to take ownership of the Bee City brand in Canada, Shelly independently moved the initiative forward with the City of Toronto. The timing was opportune as Toronto was launching their Pollinator Protection Strategy, created to "to support the vision of [Toronto] being home to diverse pollinator communities that contribute to resilient ecosystems and enhance urban biodiversity" (City of Toronto, 2018, p. 2*)*. Former Toronto City Councillor Sarah helped champion becoming a Bee City in 2016. She saw the potential not only for Toronto to be recognized for their leadership, but also how that leadership could have a positive impact on other communities:

> [Becoming a Bee City] doesn't just benefit us, it benefits Ontario, it benefits Canada…if we can get [the greater Toronto area] to be Bee Cities - it's that domino effect. You tell two friends and they tell two friends and slowly you're moving your way up to North Bay, you're moving yourself out of Ontario, you're moving further around Canada. So it doesn't just benefit us as a city, it benefits our farmers, north of the city, you know? Not many fruits and vegetables are grown in mass quantities here in Toronto to feed Torontonians. So if we as a city can encourage other municipalities, other groups, to participate by us becoming a Bee City, [then] we should do it.

Our study focuses on Bee Cities, but notably, schools, businesses, and faith groups can also receive the Bee City designation in Canada by committing to the same criteria. There is no registration fee for the initial application but there is a sliding scale fee for renewal, based on population size, that is used to support the administrative costs of managing a non-profit organization (Bee City Canada, 2019a). Nick, former Director of Communications for Bee City Canada, described the organization as follows:

> Bee City Canada is a National, charitable, federally recognized organization that advocates for pollinators. They do that primarily by advancing education around pollinators and how we can protect them. And more so than working with individuals… Bee City Canada works with municipalities, schools, universities and businesses to try to encourage them, to inspire them, to do things that are helpful to pollinators…things such as developing habitat, protecting habitat, educating their residents, their employees, their students about what they can do, the choices they can make, actions they can take. It's about Pollinators.

Bee City Canada Director Shelly described education as the primary role of the organization, "I think the most important thing is education - that people learn that there's other insects, besides the honey bee, that pollinate." Ursula is a former Bee City Canada educator and volunteer who provided pollinator workshops in schools in 2016-2017:

> You have to declare that you're going to actually *do* something for bees. So you have to be committed to take meaningful action to help bees and that can mean any bees. So yes, meaningful action of some sort. It doesn't mean that your city is bee friendly at all. It just means that your city … wrote a mandate that they're going to try to achieve [a] specific goal.

This seeming contradiction of not being "bee friendly" enough but still eligible for the Bee City designation is not seen as a weakness by Bee City Canada leadership, but as a strength and opportunity. Nick explained that less experienced or knowledgeable municipalities can learn from others with more knowledge or experience:

> I think it can bring together communities that are doing a lot of work, that have been focused on this for quite a bit of time, focused a lot of energy into tackling these issues. And [it can attract] relative neophytes that say, "We get that there's an issue, we want to help but we don't know how."

The idea that people need to start learning and working from *where they are* – with their physical spaces, their knowledge base, and their available resources – is foundational to how Bee City Canada operates. Gibson-Graham (2006) suggest this "ubiquitous starting place of *here* and *now*" is a way to recognize the "potential fruitfulness of any particular location and moment", offering that the "scope and scale of a project's effectiveness are not limited by its starting place" (p. 194-195). This place-based, context-specific way of welcoming municipalities under the Bee City Canada umbrella fosters a community of learning rather than a hierarchy. Doug said, "So I would say the idea is created by the Bee City affiliate, the idea of what they would like to do in their space, and then the role of Bee City Canada, from my perspective, is to provide them with as many resources, and as many avenues to success as possible."

This approach also makes the program more accessible to small and rural communities, as well as communities who value a highly manicured or ornamental plant esthetic in their yards, gardens, and municipal green spaces that may act as food deserts for pollinating insects (Bryce, 2018). Karen from the Wellesley Horticultural Society, a Bee City volunteer and one of the driving forces behind becoming a Bee City in her area, said:

> In a farming community we have to support our farmers' efforts and the current government approved practices [herbicides, pesticides, etc.] they follow to grow our food, by planning our Bee City projects without alienating them. How can we work together for all to be successful? It is also important to encourage the use of all garden styles, from tidy with lots of ornamentals to naturalized with all natives and everything in between. In that way everyone is encouraged to participate.

Achievements are celebrated and viewed as part of a learning continuum, and although not all conservationists agree with the approach, all bees are included. While Bee City Canada does not exclude honey bees, native bees are foregrounded. Director Shelly said:

> On our application, there's no word about honey bees. It talks about pollinators and who are the pollinators, but it says nothing about honey bees… it's about habitat, that's what we stress... but, you know, our experience, my experience has been that everybody talks about honey bees because that's what people know.

Ursula, a former bee keeper, agrees, "Some people, they hear there's problems with bees, so they want to become a honey bee keeper because that's what they know ... people find out there's a problem with bees so they want to make more bees. They only know one kind of bees." Many people describe honey bees as a gateway to discovering other pollinators and a new appreciation for non-human nature. Erica, who volunteers on the City of Kitchener's pollinator working group, credits honey bees for our growing understanding of declining pollinator health:

> People know about bees, and the peril of bees, because of honey bees. I mean I say the peril of bees in general because of honey bees, right? Honey bees are like the canary in the coal mine. … I know that some people aren't huge fans of the European honey bee here, but the reality is if they weren't everywhere, I'm not sure if we would have noticed that our pollinator numbers were going down.

Ursula agrees, pointing out that for her, honey bees acted as a catalyst for learning more about bee issues, and about other bee species, "I personally don't think there's anything wrong with being a bee keeper. I was a bee keeper and I will continue to probably bee-keep. But that was a necessary step for me to know about these other bee problems. I wouldn't have known otherwise. And I wouldn't have known about *other bees* otherwise." [emphasis added]

Kim sees the interest and focus on honey bees as a gateway to learning about other pollinators and their connection to our food:

> I find that this is a great way …to bring to more people's awareness ...issues of food production, you know, a lot of people don't know how their food is grown, and they don't realize that there are these differences between production systems and what it does to the environment and what it does to our pollinators. So this is a great way to get that information across to address misinformation, you know people might think that "Oh, honey bees are all that we have" or " all bees make honey".... yeah, so this is a really great way [to address misinformation].

Victoria is co-chair of a non-profit organization for pollinator conservation in Guelph, Ontario and a PhD candidate at York University. Victoria recognized that the criteria for becoming a Bee City are not strict, "Bee City [Canada], it's not exactly... it's not gonna turn people away…it's not likely going to turn into, 'Oh, you're not pollinator-friendly enough' [so you can't be a Bee City]. If you appear supportive enough in saying, 'Yes I want to help pollinators', then you're in."

In fact, neither Bee City Canada, nor Bee City USA has ever turned away an applicant. Bee City USA founder Phyllis explains that 'weak' applications can provide important learning opportunities:

> We have never turned a city away if they meet the eligibility requirements, but we have had lengthy discussions over months or years in some cases about expectations before they are certified. They may have questions about the commitments and we want to ensure that the commitments and process are transparent from the beginning for all involved. As we often say, the program is a marathon, not a sprint, with the goal of changing America's landscaping paradigms. (P. Stiles, personal communication).

The perceptions of Bee City volunteers and municipal staff reflect these values. The Natural Areas Coordinator and Bee City staff liaison for the City of Kitchener, Josh, describes the organizations as follows, "I would say [Bee City Canada] acts as the umbrella organization that kind of brings us together to help us find common goals, similar initiatives, problem solving, delivery mechanisms, ways that we can share the same message in many different ways with many different communities."

While the criteria to be a Bee City are the same for every affiliate, the ways that the criteria are enacted are determined at the local level. According to Lorne, formerly with The Ontario Ministry of Food, Agriculture and Rural Affairs and a policy expert on the Bee City Canada Board of Directors, taking action through formal channels is the best way to ensure progress:

> By having a formal commitment from the city to be a Bee City, that puts the onus on them to take action locally, in a way that does not happen if it's just "Oh yeah this is a great idea we should do something about it". [Now] we've got a piece of paper that says [our city] commits to [these things] and I personally think that's the only way of getting real gains … is to have it formalized through policy.

Aimee, a Planner in the Parks Planning and Development Division in the Town of Whitby, highlighted the place-based nature of the program: "There's more flexibility [than some other approaches to pollinator conservation], there isn't a specific checklist to fill, it is more general, to be able to form tasks to be completed specific to the community", and adding, "The Bee City program is very flexible, it's easy to integrate." Bee City Canada presents a unique opportunity to draw attention to bees and other pollinators with their focused conservation model that requires commitment at the municipal level.

As the action-oriented, certifying entity for Bee City affiliates, Bee City Canada has a responsibility to promote evidence-based research about pollinators and Director Shelly feels it is important to provide good information to everyone interested in supporting pollinators. She said, "I think our role is really providing

information, scientific information, the latest about what's going on. So I think our role is not to draw a line to say 'if you're going to have so many honey bee hives in your city [then] you can't be a Bee City.' I don't think that's our role, I think our role is to provide the information."

Ursula agrees that inclusion is important, "We want to include honey bee keepers because we want honey bee keepers who are already seen as people with special knowledge, [and] people respect their bee knowledge." Doug, a teacher with the Toronto District School Board and member of Bee City Canada Board of Directors, agrees that providing accurate information is especially important given the misinformation that abounds. He said, "There's a lot of information flying out there, on social media in particular, that might not be 100 percent accurate. So people want clarification on the status of bees, and they want to get involved … but they don't quite know how to do that. So I think Bee City Canada should be the first line, that's the first resource that people can access."

Kim similarly believes that her Bee City working group can address misinformation about what is good for bees. She said,

> Ultimately I see the benefits of being a Bee City would be addressing some misinformation ... so a lot of people ask me, "Hey is it a good idea to start a honey bee hive and save the bees". No, it's not. And the reason is, that species, Apis mellifera, is not under any threat of extinction. The bee keeping industry itself is hurting, and the bee keepers themselves have been hurt by losses…But there are plenty, plenty of bees around, there are plenty of ways for them to increase their colony size once again.

Bee City Canada can be a catalyst for knowledge dissemination, awareness building, and networking, and compel municipalities into environmental action. The name itself epitomizes and animates inclusive othering by sharing in the collective municipal identity, making space for enacting a whole-of-community approach to urban living. The privileging of honey bees suggests that commodification of pollination has greatly shaped how pollinators are recognized and valued; however, this study's interview data indicate that this valuation is not universal. The study participants identified multiple and diverse benefits associated with Bee City and, more generally, care for pollinators. But these arguments are difficult to articulate to policy-makers who are (and often have to be) concerned with the monetary economics of healthy ecosystems. On the other hand, those concerned with the social and environmental benefits of pollinators may be reluctant to discuss ecological concerns in financial terms.

It is here that Gibson-Graham's model offers an opportunity for a common language. Their iconic iceberg figure (2006) works as a metaphor that visually demonstrates the vast range of non-monetary activities. It indicates that such interactions are disproportionally more common than monetary transactions, even though they may be hidden, and that they can be viewed as the foundation for monetized economic activities. We can demonstrate the commodification of pollination in the same way by positioning managed bees at the top of the iceberg, and the rest of the pollinating bees and some of their associated benefits below the surface (Figure 1).

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Now that we know what Bee Cities are, we look at the commodification of pollination through a diverse economies lens. This perspective highlights how identity and value are provided within activities of diverse economies, beyond the dominant discourse of the monied economy. In the following discussion we analyze aspects of the data that deal with storytelling, recognition, and networking in order to foreground this perspective.

Stories can give new meaning and justification for inclusion and action. In Niagara Falls, the Manager of Cemetery Services, Mark, knew that education and awareness-raising were among their biggest challenges. Rather than create a pollinator meadow in a rural space where it would garner little attention, the city dedicated two acres of their busiest cemetery to pollinators, including a series of educational signs about the importance of native plants for pollinator habitat. Signage can be an engaging and effective way to promote inquiry, stimulate conversation, and offer a communal form of information-sharing (Church, 2015; Wandersee, 2007).

Signage can tell a story that begins to re-signify how we perceive and interpret urban green space, and who is included in those spaces.

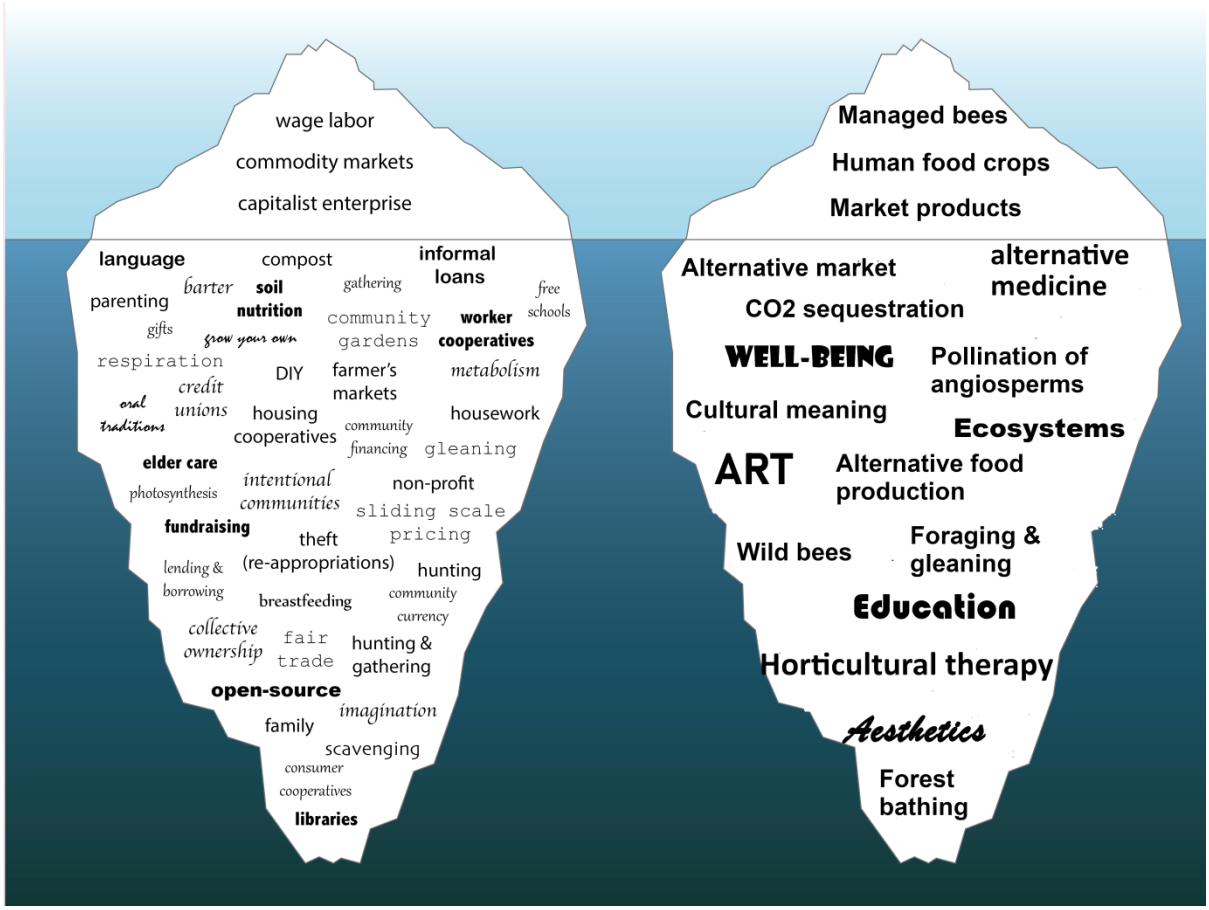


Figure 1**:** *Left*: the Diverse Economies iceberg by Ken Byrne from the Community Economies Collective. Accessed March 2021 from http://www.communityeconomies.org/index.php/resources/diverse-economies-iceberg (CC-BY Share Alike licence). *Right*: the commodification of the pollination iceberg.

In some cases, stories are fear-based, compelling action through a desire to create change. Fear-based stories around food and food production abound. When combined with dramatic imagery of empty grocery store shelves and barren landscapes, these stories take hold in mainstream consciousness. This doomsday narrative is a call to action for some. Lorraine sits on the Bee City Canada Board of Directors and is one of the founding members of Bee City Stratford. Lorraine believes that Bee City helps dilute some of the 'doom and gloom' messaging with hope, "Bee City Canada offers hope and direction. It does not resort to the doom and gloom approach of making people feel that what they do won't make a difference."

This reframing of 'the story' was expressed by many participants, including Myles, the Environmental Education and Engagement Coordinator at the City of Richmond Hill: "I feel hopeful that joining the Bee City network will help raise awareness about the importance of bees and pollinators in general, for our ecosystem and community health. There is certainly power in numbers, so the more towns and cities that join, the better."

To unseat the capitalist reproduction of nature, which relies on the reductionist othering of nature, and particularly the exclusionary othering of wild (unmanaged) bees, a whole-of-community approach can be

engaged. Along with being a 'feel-good' story, receiving the Bee City designation means that bees become part of the collective municipal identity. While Bee City Canada is still in its infancy and municipalities engaged with the Bee City movement still have knowledge gaps about pollinators, they set the foundation for greater awareness-building, which can be a catalyst for stewardship and action.

*Networking and recognition*

We have established the privilege that comes with recognition of the European honey bee. Bee Cities create a network of interconnected municipal entities, practically and conceptually joined by the common designation of 'Bee City.' Membership in social networks provides benefits and resources not otherwise accessible (Eriksson, 2011). Sustainable stewardship activities are more likely to achieve longevity when social capital is high (Pretty & Smith, 2004).

Pollination Guelph is another pollinator-focused non-profit that provides pollinator events, education, and research as well as a yearly Pollination Symposium. Pollination Guelph has been a leader in pollinator protection since 2007 and many other individuals, groups, and organizations refer to them for the latest information and research (Pollination Guelph, 2019). And yet, they were acting primarily within the local context and limited by resources on how far they could extend their reach. Co-chair Victoria said Pollination Guelph recognized this limitation, "We kept getting asked by different cities about how do we get involved, 'how do we do the same thing you guys are doing?' And we try to help where we can, but we kept saying "we need a *national* organization to help motivate, inspire, [and] organize." [Emphasis added]

When this research was carried out, there were 29 Bee Cities across Canada, 18 of which were located in Ontario, with 17 participating in this research. In Ontario, Bee Cities are forming a growing network of municipalities concerned with pollinator health. Within each Bee City affiliate, municipal staff, councillors, volunteers, and others, work together to educate people about the needs of pollinators through various methods. When asked about the role of Bee Cities in creating a network, Patricia, Parks Program Officer with the City of Toronto, pointed out how the network can extend beyond the immediate members of Bee City affiliates to anyone interested in pollinator health. The outreach activities extend the reach beyond the converted (such as people already involved in their local Bee City program) to those who would otherwise have limited exposure.

In September 2018, Bee City Canada held the first Bee City Pollinator Summit for Bee Cities in Ontario. During the Summit, several Ontario Bee Cities shared their Bee City initiatives along with presentations from researchers and other experts. Participants agreed that the Summit had been a highlight of the Bee City experience. Josh from the City of Kitchener said, "We attended the Bee City summit. I would say that was a really good start to start making those connections, and meeting those people, and seeing where staff fits in on their respective Bee City committees." This knowledge-sharing creates the space for reflexivity, where municipalities can learn from each other, gauge progress, evaluate successes, and gain insights about diverse Bee City programs.

Many municipalities see the benefits of being part of a network, and many have joined other initiatives as well, such as the David Suzuki Foundation-supported Blue Dot movement, a national grassroots campaign promoting a healthy environment as a right (David Suzuki Foundation, 2020). Many respondents identified the importance of being part of something bigger, part of a movement. Along with knowledge-sharing and celebrating successes, networking and coming together as a collective supports a new realization of community, or a whole-of-community approach. Former Communications Director, Nick, saw the need for recognition as a motivating factor in the Bee City applications: "Municipalities come to Bee City Canada with different 'wants', but one of them that they all have in common is they want to be recognized. They want to be recognized as communities that are concerned, and are acting to make positive change."

Reframing stories, networking and recognition all point to different ways in which value is understood and realized. In contrast to the commodified image of honey bees, Bee Cities offer a more inclusive view of pollinators, and a more interconnected portrayal of the human-pollinator relationship. By considering more than the commercial value of crop pollination, this approach assigns *diverse* values to a variety of pollinator benefits, including how pollinators can catalyze building social relations. Such comprehensive understanding of value, which de-prioritizes monetary value, creates the conditions for a whole-of community approach to pollinator conservation, and more broadly, to human dimensions of conservation.

## 7. Conclusion

More than half of the native bee species in North America are threatened with extinction. As of March 2021, 48 Canadian Bee Cities have signed a resolution to commit to the standards of the Bee City Canada program since its inception in 2016. This commitment includes creating and enhancing pollinator habitat, along with raising awareness and celebrating pollinators in their communities. Within the 'save the bees' narrative, a capitalocentric, unidimensional image of pollination persists, driven by particular forms of market power and domination. Well-intentioned individuals and groups may be misled or constrained by industry-dominated messaging that limits their understanding of appropriate interventions. However, novel storytelling is helping to change the narrative by reframing the story into one of inclusion and diversity.

In the interest of uniting allies and caretakers of pollinating insects, Bee City Canada's approach to conservation and network-building is an inclusive one. This path risks alienating potential allies: the native bee advocates who believe managed bees under current conditions pose unacceptable threats to the health and status of wild bees; and bee keepers who consider themselves stewards, many of whom understand the need to resist and enact alternatives to industrial agriculture. These issues are not going away soon, and in the meantime the number of threatened and endangered native bees species continues to grow, conferring the need to prioritize their care. The Bee City call to action fits an animation of conservation that includes "actions that are intended to establish, improve or maintain good relations with nature" (Sandbrook, 2015, p. 565).

Bee Cities are still in their infancy, and there remain questions about their transformative potential. While Bee City Canada is still a relatively new organization, our analysis presents both practical and theoretical implications for creating praxis networks that have the potential to erode capitalocentric notions of pollination. Many Bee Cities utilize municipal property for creating place-based pollinator projects and when municipalities "do not seek to manage their land for profit", this is an act of de-commodification (Gerber and Gerber, 2017, p. 554) or non-commodification which values the act of the pollination for its inherent worth, rather than emphasizing spaces for profit. Most participants who identify as native bee advocates were introduced to honey bees first, indicating that this charismatic species can act as a gateway into the diverse world of pollinators. Even though more work is needed to further develop a clear and consistent vision for Bee City Canada as the umbrella organization, Bee Cities, by their very name, augment and expand our concept of community. What we have shown is that, while difficult to measure, there is value in qualitative approaches to understanding our interactions with conservation movements like Bee City. This research provides an important foundation for more deliberate work in this area which can ask questions such as, is a little bit of advocacy enough? What value is there in small scale, practical, projects? How much is enough?

Navigating the complexities of Bee City Canada offers municipalities the opportunity to engage in conservation efforts by starting *where they are* and building on a network of Bee Cities across the country. While the depth of the Bee City program may not be sufficient on its own to create comprehensive system change, viewing it as a function of diverse economies does serve to build awareness and advance a whole-of-community approach. In addition, we have shown how Bee Cities can animate a vibrant political ecology through a collective municipal identity, by centering bees (and other pollinators by proxy). It is only through decentering the hegemonic market-based view of pollination, and addressing the systemic, capitalocentric practices of agriculture and development, that true conservation of bee diversity can be prioritized.

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## Appendix A

| City | Month | Year | Invited to participate: | Participated: | Paid staff or Councillor interviewed | Volunteers interviewed |
|---|---|---|---|---|---|---|
| City of Toronto | | 2016 | Yes | ✔ | 2 | 1 |
| Township of King | Nov | 2017 | Yes | ✔ | 1 | 1 |
| St. Catharines | July | 2017 | Yes | ✔ | | 1 |
| Kawartha Lakes | July | 2017 | Yes | ✔ | 1 | 1 |
| Stratford | April | 2017 | Yes | ✔ | 1 | 1 |
| Town of Whitby | Dec | 2017 | Yes | ✔ | 1 | |
| City of Niagara Falls | March | 2018 | Yes | ✔ | 2 | |
| Waterloo | March | 2018 | Yes | ✔ | 1 | |
| Ajax | June | 2018 | Yes | | n/a | n/a |
| Newmarket | April | 2018 | Yes | ✔ | 1 | |
| Kitchener | Jan | 2018 | Yes | ✔ | 1 | 5 |
| Guelph | June | 2018 | Yes | ✔ | 2 | 1 |
| Township of Wellesley | July | 2018 | Yes | ✔ | 1 | 1 |
| Town of Mono | June | 2018 | Yes | ✔ | 2 | |
| Richmond Hill | July | 2018 | Yes | ✔ | 2 | |
| Oshawa | Oct | 2018 | Yes | ✔ | 1 | |
| Township of Selwyn | June | 2018 | Yes | ✔ | 1 | |
| Barrie | June | 2019 | Yes | ✔ | 1 | 1 |
| Orillia | June | 2019 | | | | |
| Township of Severn | April | 2019 | | | | |
| Town of New Tecumseth | Sept | 2019 | | | | |
| Mississauga | June | 2019 | | | | |
| Township of Georgian Bay | Aug | 2019 | | | | |
| City of Timmins | Oct | 2019 | | | | |
| Municipality of Trent Hills | Oct | 2019 | | | | |
| Region of Waterloo | Jan | 2020 | | | | |
| Town of Orangeville | Jan | 2020 | | | | |
| City of Hamilton | Feb | 2020 | | | | |
| Augusta Township | June | 2020 | | | | |
| Blind River | August | 2020 | | | | |
| Midland | January | 2021 | | | | |
| Collingwood | N/A | 2021 | | | | |