

Towards a New Approach to Beekeeping Policy in Urban Ontario

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Executive Summary

Urban agriculture and food production in cities has recently experienced a huge growth in interest. In response to concerns about the safety and sustainability of our existing food systems, many people in cities are looking for ways to produce more of the food they eat within the city itself. Part of this trend is a growing interest in urban beekeeping. Advocates of urban beekeeping argue that it can be a safe and healthy practice with a number of environmental, economic, and social benefits, for practitioners and cities alike. While many municipalities in North America have taken steps to legalize and regulate urban beekeeping, existing legislation in Ontario largely prohibits keeping hives in cities. With the existence of a number of high profile beekeeping initiatives in Ontario cities, and the growing visibility of urban beekeepers, the gap between the regulatory framework for beekeeping in the province and actual practice continues to grow. It is time to reconsider our approach to urban beekeeping in Ontario.

In Ontario, beekeeping is regulated by the Ontario Ministry of Agriculture, Farms, and Rural Affairs (OMAFRA). OMAFRA does not currently address urban beekeeping as a separate practice and maintains a uniform set of regulations for both urban and rural hives. Crucially, the Ontario Bees Act (1990) requires that all hives be kept further than 30m from the property line of the lot where they are kept. This regulation effectively prohibits beekeeping in dense urban environments. While this regulation is intended to mitigate potential dangers associated with the proximity of hives, there is evidence to suggest that other measures could serve this purpose more effectively, and, in any case, it seems that a number of registered hives exist in cities which do not conform to this rule. This policy gap and selective non-enforcement indicate a need for a new approach to regulating urban apiculture. Advocates and practitioners see the need for responsive and responsible regulation which can balance mitigating potential harms with supporting and fostering the practice of urban beekeeping.

This report examines the current state of urban beekeeping policy in Ontario and identifies a number of opportunities and challenges. Advocates of urban beekeeping point to impacts such as pollination services, niche small business opportunities, and sustainable mixed-use land practices as rationales for legalization and regulation. Competing views suggest that these benefits are exaggerated, and a set of regulations specifically addressing urban beekeeping would be unnecessary. We have attempted to sort through these differing perspectives and have found that, while some of the claims of beekeeping advocates may be overstated, there is evidence that beekeeping can be an important and safe component of urban agriculture. Furthermore, our case studies suggest that regulations specifically tailored to the demands of beekeeping in an urban context can successfully mitigate any harms associated with this practice.

Our research team drew upon the knowledge and experience of beekeeping experts and policy makers in Ontario in order to better understand the origin and rationale for the existing regulatory regime. Policies and practices in other jurisdictions were considered in evaluating the strengths and weaknesses of Ontario's current approach and also informed our recommendations regarding the future of beekeeping in the Province.

Based on our investigation, this report provides a number of recommendations for extending urban beekeeping in Ontario. These include:

1. More decision-making should be left to the municipalities;
2. Regulations ought to consider honey bee flight paths over concerns for distance.
3. Voluntary best management guidelines can be highly effective;
4. Support networks within the industry and with governments are critical;
5. Education of beekeepers and the public is essential.

We have also proposed a series of steps that advocates of urban beekeeping might take to pursue change. We identify a number of steps that can immediately be taken at the community and organization level including: consult beekeepers and beekeeping associations in Ontario; develop the business case for urban beekeeping; and create an inventory of sites in Ontario cities where hives could be kept in compliance with the current Bees Act (1990). Municipalities are advised to become involved by conducting research about the state of the practice within their community and considering what regulatory framework is most appropriate to their needs. Finally, all of these actors should work with the province to change Section 19 in a way that allows urban beekeeping to move forward. There is much work to be done before that point will be reached, but we hope this report provides a useful starting point for a new approach to urban beekeeping in Ontario.

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Introduction

Recently there has been a surge of interest in urban agriculture. Food production, once seen as largely incompatible with modern city life, has seen an incredible rise in activity as organizations and individuals increasingly seek out innovative ways for urban regions to produce more of the food they consume. Urban agriculture is being held out as an important goal for the creation of sustainable cities, as a means for urbanites to develop connections with nature, and as a way for communities to improve access to fresh, healthy food. Organizations like the Toronto Food Policy Council, which just released “Grow TO: An Urban Agriculture Action Plan for Toronto,” are seeking to expand the scope of food production in cities. More and more municipalities in Ontario are recognizing the importance of urban agriculture and are looking for ways to encourage it.

One aspect of this trend is a growing interest in urban apiculture, or beekeeping. In Toronto, a number of high profile beekeeping initiatives exist, including hives on the Royal York, one of the city’s oldest and most prestigious hotels. Organizations like the Toronto Beekeepers Co-op, which recently won a ‘Green Toronto Award’ in recognition of its contribution to urban sustainability, are bringing increasing visibility to this practice. Urban beekeepers argue that raising bees in cities is a safe, healthy pursuit with a number of ecological, economic, and social benefits. Other cities have recently developed regulations enabling urban apiculture; their experiences suggest that beekeeping can be compatible with city life.

While urban beekeeping is being encouraged by a number of municipalities in Ontario and recognition of its importance is growing, the regulatory framework for urban beekeeping has not kept pace. Currently, the main legislation regulating beekeeping in Ontario, the Ontario Bees Act (1990), presents obstacles for expanding the practice of urban beekeeping. In particular, Section 19 of the act requires hives to be kept further than 30m from any property line adjacent to residential land. Although our research suggests that a number of existing hives in the city do not comply with Section 19, it remains a barrier to the practice of urban beekeeping in Ontario.

As urban apiculture grows, various organizations - including Sustain Ontario, for whom this report was prepared - and beekeeping advocates are seeking ways to address this gap between existing regulation and beekeeping practice. This report aims to provide a broad understanding of opportunities and challenges of urban beekeeping. It points to key considerations and recommendations for stakeholders who wish to take further steps toward refining related policy and regulation in Ontario.

Methodology

Our research began with a policy, literature, and media review of the current state of beekeeping in Ontario, in order to better understand the origin and rationale for the regulatory regimes which create barriers for urban beekeeping. Several case studies of urban beekeeping and best management practices in other jurisdictions were examined and compared against Ontario's approach. Furthermore, key-informant interviews were conducted with: policy makers; provincial/state apiculturists and inspectors; academics in the field of apiculture; as well as select practitioners. The rationale for mainly interviewing this demographic, which does not include general urban beekeepers and bee associations, was due to a limitation in the scope and scale of the project, including the fact that there are varying categories of beekeepers (ranging from hobbyists to commercial). These entire populations could not be interviewed and selective interviews would not have been adequately representative, therefore, the demographic that was consulted served as a proxy to gauge the perspectives of urban beekeepers and associations for the purposes of this report.

Did You Know?

There are two registered bees for every resident of Toronto

(Young and Zilky, 2012)

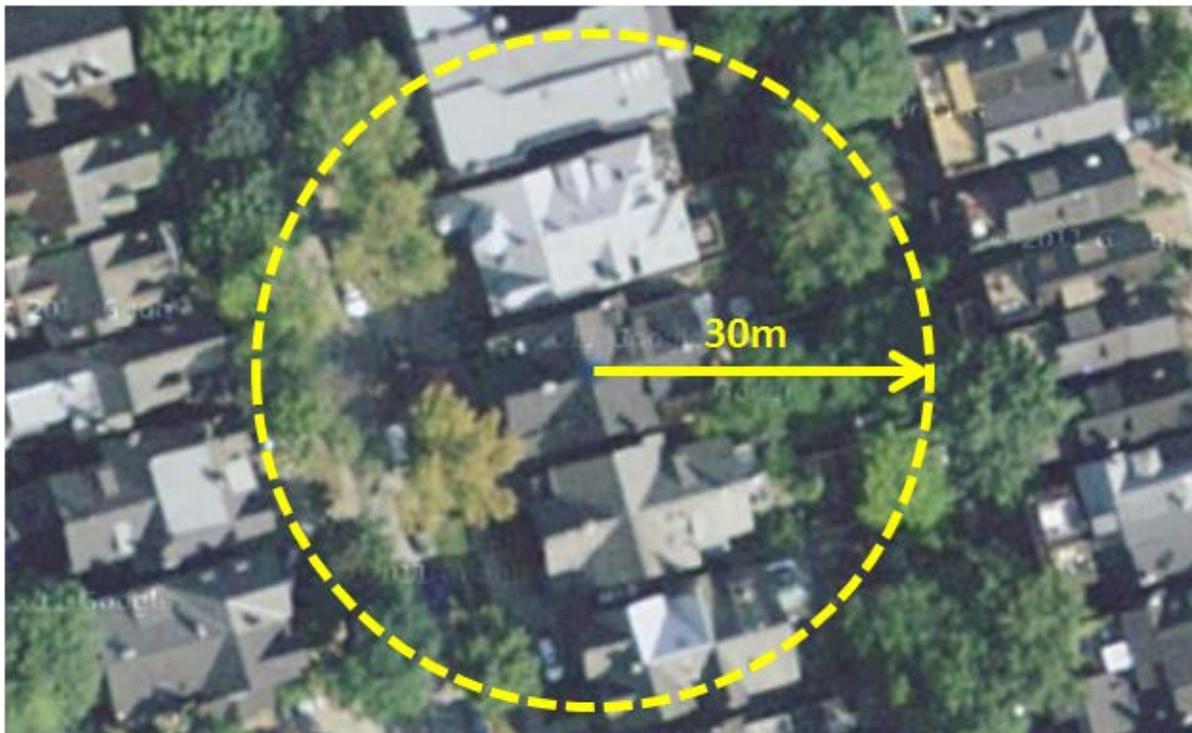
Background

The major piece of legislation addressing beekeeping in Ontario is the Ontario Bees Act (1990). According to OMAFRA the purpose of the act is “to protect the health of honey bees, by registering beekeepers and providing detection and response powers” (personal communication, 2012). The Bees Act requires that all hives be registered with the province and empowers the province to appoint a provincial apiarist tasked with inspecting and managing the province’s bee operations. The Bees Act contains one area of particular concern for urban beekeeping. Section 19 of the Act states that:

No person shall place hives or leave hives containing bees within 30 metres of a property line separating the land on which the hives are placed or left from land occupied as a dwelling or used for a community center, public park or other place of public assembly or recreation.

The prohibition of keeping bees within 30 metres of a property line effectively bars beekeeping in many residential neighbourhoods where lot sizes are much too small to accommodate such a large separation. Figure 1 below illustrates this fact with a 30m radius applied to an average Toronto neighbourhood.

Figure 1: Visualizing 30 metres



Google Maps, 2012

While the primary goal of the Bees Act is to protect the health of Ontario's bees, Section 19 is also intended to prevent public nuisance and health risks associated with the presence of beehives. In a recent interview, Paul Kozak, Ontario's provincial apiarist, described that Section 19 of the Bees Act is intended to overlap with basic best management practices for beekeeping by separating bees from human activities. Furthermore, while measures intended to mitigate negative interactions between people and bees have been implemented by other jurisdictions, Kozak stated that such measures may not prevent these problems in all cases. Thus, Section 19 is considered an appropriate regulation because it provides stronger protection for the public and has the additional advantage of providing consistent legislation for all beekeepers in the province, whether they are located in rural or urban settings. Furthermore, Kozak expressed concern that some urban areas might be inappropriate places to keep beehives and may not meet the needs of bee colonies. He argued that beekeepers should instead look for areas with larger separations where they could raise bees in conformity with Section 19, and, in any case, most beekeepers living in cities keep their hives on rural land elsewhere.

There are, however, a significant and growing number of apiculturists who keep hives in urban areas. According to a recent article in the Globe and Mail, there are 107 registered beehives in the city of Toronto alone, many of which are in parts of the city where they are "very unlikely to be 30 metres away from the property line" (see Figure 2). The article goes on to say that OMAFRA "did not directly reply to a question about why these registrations took place when the beehives likely violate the Bees Act, but did indicate that ministry inspectors are conscious of distance separations and work with beehives they think might need to be modified" but that they received few complaints about existing hives (Young & Zilke, 2012). It seems likely, then, that many of the existing beehives in Ontario cities do not meet the criteria set out in Section 19 of the Bees Act; currently most of these hives do not present a nuisance or hazard and largely coexist with other human activities.

Figure 2: Location of Registered Hives in GTA as of July 2011



Map by Global News, 2012, with data from OMAFRA.

Any effort to change legislation around urban beekeeping would have to effectively deal with the issues that the existing act is intended to address. Preventing negative interactions between bees and humans - such as stinging - and protecting the health of bee colonies would be paramount concerns. There is reason to believe that the current regulatory framework does not fully address the needs of urban beekeeping, and – at least in the case of the 30m rule – is being applied inconsistently. While there is value in maintaining a uniform set of rules for urban beekeeping, there may be some justification for recognizing the different needs of cities by developing a policy framework that specifically addresses urban apiculture. Doing so would require a change in the Bees Act, since all municipal by-laws must conform with relevant provincial statutes. Municipalities can work to develop capacity for regulating beekeeping within the context of existing legislation, but change to the 30m rule will ultimately have to come from the province.

In the sections that follow we set out some of the reasons why we think keeping bees in cities should be encouraged, and discuss some of the ways that other municipalities have balanced the concerns of public safety and bee health with the practice of urban beekeeping.

Considerations for Approaching Urban Practice

This section introduces a number of important considerations relevant to urban beekeeping. We have grouped these arguments under three broad categories: environmental, economic, and social. We first consider the role of bees in urban ecosystems and the impacts of urban ecology on bee health. We then examine the economic rationales for urban beekeeping, which we situate in the context of the potential for commercialized urban apiculture. Finally, an examination of the social aspects of beekeeping in cities demonstrates compatibility with wider urban planning objectives and urban agriculture. A summary of opportunities, challenges, and strategies is provided at the end of this section in Table 1.

Environmental Considerations

In the summers of 2006 and 2007, honey bee colonies across North America experienced an unprecedented rate of mortality. More than 1 in 5 beekeeping operations in the USA lost 30 – 90% of their hives without known cause (USDA, quoted in Ragsdale et al., 2007). This condition came to be known as Colony Collapse Disorder, or CCD, which is characterised by a disappearance of adult worker bees, a high ratio of brood to adult bee populations, delayed invasion by pests and late or absent kleptoparasitism from neighbouring colonies (vanEngelsdorp, 2009). While no single cause has been found for CCD, dominant theories suggest that commonly used pesticides are weakening the immunity of colonies to infection and are also negatively influencing bees' ability to learn and remember (Economist, 2012a). In one study, bees treated with thiamethoxam were twice as likely to fail to return from foraging trips as untreated bees. Mathematical models project that this loss rate could easily cause population collapse (Economist, 2012b).

The loss of any species is a tragedy in its own right; however the disappearance of the honey bee is a significant concern for humans as well. Scientists estimate that *A. mellifera*, the most common species of managed honey bee, provides 80% of the pollination required by food crops. Furthermore, it is estimated that one in three mouthfuls of food worldwide are made up of crops that require pollination (Lawrence & Anderson, as quoted Ragsdale et al., 2007). In addition to problems associated with pesticide use, the health of rural bees is impaired by the vast monocrops that often characterize agricultural landscapes. Because monocropping only provides forage within a relatively short, uniform time-frame, commercial bee colonies must be transported across the USA and Canada to ensure access to pollen, and to provide pollination for food crops, throughout the bee season. These long journeys can put tremendous stress on hives.

Against this backdrop, urban beekeeping can be understood as a refugee program for this crucial pollinator. Many cities have pesticide bans in place that make nearly all pollen and nectar safe for bees (Young & Zilke, 2012). In addition, the variety of plants available in urban settings allows bees

to forage from a single location throughout the entire growing season, eliminating the need for stressful movement of hives. Finally, the urban heat island effect can mean that cities are up to 10 degrees warmer than rural environments, which lengthens the foraging season for colonies, putting them under less stress in winter (Kim, 1992).

Though the city may be an important habitat for honey bees, it is not correct to assume honey bees are an important pollinator for cities. Dr. Ernesto Guzman, Head of the Honey Bee Research Centre at University of Guelph, suggested that the city is home to a huge variety of pollinators that can adequately fulfill the city's pollination needs (personal communication, October 18). A study from Poland documented strong wild bee diversity in an urban area (Banaszak-Cibicka & Zmihorski, 2012). However, a study based in Vancouver, where urban beekeeping is a popular practice, discovered that while *A. mellifera* was the most commonly found bee in the city, at no point in the growing season did it make up the majority of the bees found in any of the variety of the urban habitats studied (Tomassi et al., 2004). This study suggests that honey bees can live in balance with other pollinators. Thus, while honey bees may not be needed for the sake of urban biodiversity, their introduction to cities through the practice of urban beekeeping does not seem to pose a significant threat to species richness of pollinators in urban centres.

Urban bee health and public safety are another concern that warrants consideration. Mylee Nordin, staff beekeeper at Toronto's FoodShare, cautions that cities generally have low rates of common bee diseases and pests, but these can be expected to rise in correlation with hive density (personal communication, October 19). Population density within each hive must also be carefully monitored; crowded hives cause swarms of bees to leave the colony and seek a new home. A new colony of bees is likely to be perceived as an unwelcome addition to public space. These concerns highlight the need for proactive policy and regulation to ensure bee health and public safety are protected and enhanced through responsible practice.

Economic Considerations

Making the economic case for urban beekeeping is not without its challenges. Opponents of urban beekeeping point to its small profit margins, the inconsistency of urban honey, and the difficulty of staying in business in a market saturated by large, commercial beekeepers. However, it is unfair to evaluate urban beekeeping under the same lense as traditional, commercial beekeeping. Due to higher survival rates and honey yields of urban bees; beehives being extremely land-efficient; and an increasing demand for small-scale, traceable, local food, urban beekeeping has the potential to serve as an important component of a commercialized urban agriculture sector.

A key challenge for urban beekeeping is the relatively small profit margins associated with honey production. In Canada, the average honey yield per colony is around 56 kg (or 123 lbs) per year

(Melham et al., 2010) and the average price of honey in Ontario is around \$1.75 CAD per pound (Statistics Canada, 2010). These numbers indicate that one colony would generate only \$215 per year from the sale of its honey and that if a beekeeping business is to be viable, it must be operated on a much larger scale. This would be troublesome for urban beekeepers because a large scale operation would not be practical in a dense and fragmented urban environment.

Furthermore, a broad overview of the honey industry might suggest that its current structure is not accommodating to new, small-scale urban beekeepers. In 2009, Canadian honey production was valued at \$126 million (Statistics Canada, 2011), accounting for less than 0.5% of Canada's farm agriculture and livestock cash receipts (CANSIM, 2011). Also, the Canadian market for honey products is experiencing very slow growth (Statistics Canada, 2011). This suggests that the market for honey has been saturated for decades. These characteristics present a challenge for small-scale operations, and over the last 20 years big commercial beekeepers have pushed half of Ontario and British Columbia's beekeepers out of the industry (Melham et al., 2010).

Another issue for urban honey producers is the general market preference for clear-coloured, consistently-flavored honey. This results from the difficulty of controlling the pollen and nectar source of bees in a dense urban environment. In rare cases, the honey of urban bees may even be affected by man-made products or contaminants. This happened recently to beekeepers in Ribeauville, France when their bees brought sugars and dyes from a nearby M&M's factory back to their hives, resulting in bright red, blue and green honey (Genthon, 2012). Canada's Food Safety and Quality Act regulates the selling of honey and requires that it meet specified grading measures based on its colour and clarity (Food Safety and Quality Act, 2001). Preferences for standardized products present challenges for small-scale organic production generally, but the growing success of this sector shows they are not insurmountable.

While these characteristics of beekeeping and its industry seem to undermine the economic viability of urban beekeeping, they do not tell the whole story. Consumer priorities are rapidly changing in a way that is promising for urban beekeeping. There is growing demand for local, natural and organic food and other products. Between 2004 and 2009, the specialty food industry - natural and local food products typically made by small entrepreneurs - in Canada grew faster than overall retail, at an increase of 35% (Agriculture Canada, 2012). Similarly, retail sales of organic produce in Canada have been averaging an above average growth rate of 15% per year (Alberta Agriculture, 2012). In addition, these specialty food products are able to extract price premiums that can be as much as double that of their traditional counterparts, thus mitigating against the low profit-margins associated with honey production (Melham et al., 2010). This suggests that urban beekeeping is placed in a strong, growing market, which need not directly compete with large-scale

commercial operations. Urban beekeepers generally deliver a very different product through, different distribution channels such as local farmers markets, to different customers.

Furthermore, the generally healthier colonies associated with urban beekeeping mean higher stability and productivity that result in a lower financial risk and higher honey yields. One study of beehives in Massachusetts found that the overwinter survival of bees was 64% higher in an urban environment than a rural environment (Noah Wilson-Rich, 2012). This higher survival rate reduces operational uncertainty and means that urban beekeepers require fewer resources to recoup their bee populations in the spring. Additionally, data from the same study indicated that honey yields were 63% higher in an urban environment than a rural environment (Noah Wilson-Rich, 2012). This suggests that urban beekeepers enjoy a superior working capital productivity ratio and lower financial risk.

Beehives require very little land and can be placed almost anywhere; infertile land, brownfields and rooftops, for instance, can all easily accommodate beehives. These characteristics make urban beekeeping one of the most flexible and land-efficient forms of urban agriculture. This is especially important as one of the barriers to the proliferation of urban agriculture has been the high cost of urban land.

Social Considerations

Finally, from a social perspective, urban beekeeping fits within an emerging model of land-use regulation that moves away from rigid separation of uses and instead looks at ways to create an urban pattern based on fine grained, multi-use communities, in which the practice urban agriculture is a growing area of interest for citizens and policy makers. Urban beekeeping is also part of the concept of 'ecological citizenship,' which seeks to reconnect people living in cities with natural systems and processes through a reintegration of ecology into the urban fabric. One key issue here, from a regulatory perspective, is how we determine personal landowner and user rights. This is an issue common to other practices of urban agriculture, such as chicken keeping, where objections to the practice normally hinge on nuisances associated with such uses. The shifting of urban planning practice to incorporate mixed-use communities and permissive, performance-based land use standards, and a move away from a prohibitive, prescriptive framework, coincides with a desire for greater freedom of activity to pursue low-intensity urban agriculture where it does not impact neighbouring uses.

Understanding how we conceive of the right to undertake activity on a parcel of land is important. According to Freyfogle (2006), private property is seldom the literal ownership of dirt and rock, but more importantly the right to exercise control over nature in a given parcel. Land ownership then implies the existence of a number of rights that are malleable over time as society changes

Honeybees are gentle and rarely sting, but can be confused with these stinging insects:

(Freyfogle, 2006). They reflect societal values at a point in time, but may become obsolete. Generally, it is held that private property may be used for a wide range of activities as long as they are not harmful to others.

The impacts of different uses and harms associated with them are of course much different in the dense urban environment than sparsely populated rural areas, where beekeeping has traditionally been carried out. Common law establishes reasonable limitations on specific types of activities, which are generally assessed by the scale and intensity of any given use (Chung, 1994). In one of our interviews, a prominent urban beekeeping practitioner and advocate argued that those interested in urban apiculture should be left to carry on a reasonably unobtrusive activity, and expressed a desire to be recognized as doing so within an accepted legal framework (Khalsa, personal communication, Oct. 17, 2012). From the perspective of a harms-based approach, apiculture should be treated according to an analysis which considers each situation according to its facts and individual merit and seeks to mitigate associated harms, rather than an approach which sees agriculture as a general category of uses which have no place in the city.

Furthermore, for those who wish to establish apiaries for small commercial production, whether as a full-time endeavour or side business, the argument can be made that the right to earn a livelihood may not be denied unless exceptional nuisance or harm is created by the activity (Makuch, 2004). The practice ought to be regulated in such a way that protects both practitioners and the public (Khalsa, 2012). A regime that effectively prohibits the practice without a strong rationale will lack legitimacy and support from those who are subject to it or must enforce it. From this perspective harm mitigation, rather than the prohibition and undergrounding of such activities, is the preferred approach.

Beekeeping presents additional challenges to a harms based approach: it would have to address very real issues which arise from fear of bees and the public perception of bees as being generally undesirable. Indeed, for some individuals allergic reactions make proximity to bees with any likelihood of being stung a serious concern. It is important to note that a number of insects sting and while some bee species are aggressive, honeybees are generally docile and unlikely to pose a problem for humans unless in very close proximity to the entrance of a hive. In any case, this is a consideration which must be addressed by regulators through measures which prevent direct contact between neighbouring residents and



honeybee hives and possibly through the development of a dispute resolution mechanism where conflicts arise.

In considering ways to integrate beekeeping safely into urban communities, we should recognize that, while some kinds of apiculture may fit within a single detached home property, other land parcels for urban beekeeping could also be developed. The adoption of mixed-use zoning ought to allow for beekeeping as either a primary or secondary use. This would provide a fairly straightforward approach to opening new venues in the city for this activity, and supports broader strategies designed to promote and enhance urban agriculture (City of Toronto, 2010). As a complement to this approach cities could provide public open spaces which could allow for urban agriculture, including beekeeping, as permitted uses (Hossain & Talukdar, 2011). The adoption of such measures by cities would, however, rely on a rationalization of provincial regulation to allow for these types of small-scale operations.

Doing so is important because urban apiculture can provide numerous benefits as a part of the local and sustainable food supply (Salkin, 2012). In addition to gardens and plantings, urban agriculture is increasingly understood to also encompass various types of livestock which can be compatible with cities (Hossain & Talukdar, 2011). Urban agriculture does not seem to be inherently incompatible with the built environment of cities. Based on work by Thibert (2012), there is seen to be a role for local governments through municipal planning powers (or delegated powers) to enable and integrate such practices. This is increasingly the case as we adopt a permissive interpretation of municipal powers, which, in contrast to the types of prescriptive interpretations which used to predominate, allows municipalities much more leeway to determine matters like this for themselves as long as they are compatible with higher order legislation.

Finally, urban beekeeping fits within a praxis of ecological citizenship which can be defined as “the fulfillment of ecological aims in a city concerned with both caring for ecosystems and building better civic communities” (Marzall, 2005; Travaline & Hunold, 2010, quoting Light, 2003). Beekeeping allows practitioners to engage with nature seldom found in urban areas, and to develop like-minded communities. From this perspective the benefits of beekeeping encompass the well-being of communities broadly, as citizens provide their own secure food supply and build connections with otherwise sometimes distant nature.

We should, however, be careful in advancing these types of arguments. Webb (1998) contests that few of the ‘sustainability’ benefits purported for such activities are clear or supported by empirical research and others argue that the local property of a practice does not inherently produce a more just, socially democratic, or environmentally sustainable practice (Purcell and Brown, 2005). Nevertheless, for individuals who choose the practice as a part of their lifestyle, the personal

satisfaction derived from beekeeping may connect them with the wider ecology not always accessible in an urban area. It may also be portrayed as a means of “distributive justice” (Travaline and Hunold, 2010) whereby citizens of otherwise limited means practice environmentalism by fostering bees or benefitting from the fruits of those who do. These perceived benefits on the part of practitioners should be taken seriously and valued accordingly.

What is clear from this discussion of the debates surrounding beekeeping is that, while cities survive and sustain themselves without urban agriculture and related industries, these practices have great potential to contribute to the quality of life for citizens. While honeybees may not be an essential part of urban ecologies, they are highly valued by beekeepers; and the city flourishes in many small ways when we are willing and able to accommodate such forms of land use and activity. Now more than ever it is pertinent for regulators to reconsider obsolete policies which impede the development of these emerging practices.

Table 1: Summary of Opportunities, Challenges and Relevant Strategies for Urban Beekeeping

Opportunities	Challenges	Strategies
<u>Economic</u>		
<ul style="list-style-type: none"> • Honey production is higher in urban env. • Bee survival is higher in urban env. • Beehives are flexible and very land-efficient • There's a rapidly growing market for local and natural products • Beekeepers can demand huge price premiums for their local and natural bee products 	<ul style="list-style-type: none"> • Overall market is quite small • Market saturated and controlled by large and efficient commercial beekeepers • Margins from most honey production are small, suggesting that large scale operations are needed. This scale would be difficult in a dense urban area. • Concerns around inconsistency and contamination of urban honey. 	<ul style="list-style-type: none"> • Urban beekeepers must differentiate their products from commercial bee products • Creating urban business models that are mobile and spread across city (e.g. leasing space) • Incorporate beehives with existing urban agriculture plots • More research needed on urban beekeeping uncertainties and support to mitigate it (e.g. education, insurance)
<u>Environmental</u>		
<ul style="list-style-type: none"> • Provide pollination services that are crucial for biodiversity and food security • Sheltered from pesticides that may be causing colony collapse disorder 	<ul style="list-style-type: none"> • May compete with native pollinators • Increase density of honey bees may encourage spread of disease • Improper management can lead to bee swarming into public space 	<ul style="list-style-type: none"> • Further research on urban pollinator ecology • Assure education of beekeepers to avoid mismanagement of hive populations
<u>Social</u>		
<ul style="list-style-type: none"> • Integration and adoption as part of a mixed-use land strategy • Many land-use opportunities, from backyards, to commercial areas • Supportive component of Urban Agriculture movement • Component of food sovereignty • Ecological citizenship 	<ul style="list-style-type: none"> • Nuisance impacts on adjacent property • Potential neighbour non-support and public opinion • Standard Euclidean zoning bylaw • Small in scale, limited interest in practice • Unlikely to achieve reasonable scale of economies to become effective part of the food chain 	<ul style="list-style-type: none"> • Consider harms-based approach to new zoning standards, which allow all forms of reasonable urban agriculture • Regulate urban operations according to a framework developed with practitioners, OMAFRA, municipality • Require consent of neighbouring property owners • Public education campaigns • Small business partnerships and advocacy

Policy Precedents

The potential benefits of urban beekeeping have been recognized by a number of jurisdictions in North America, many of which have developed policy frameworks to address this practice. We examined beekeeping policies and practices in some of these jurisdictions to build case studies that can help to assess and inform beekeeping policy in Ontario. These jurisdictions are identified in Figure 3. To build these case studies, we looked at a number of available documents outlining their approach to beekeeping and, in most cases, supplemented this information through interviews with bee experts and policy makers from those jurisdictions.

Figure 3: Map of Selected Case Studies



These cases all support urban beekeeping through a variety of regulation, from strict enforcement to voluntary best management practices. In each case the regulations adopted are successfully mitigating the public concerns over stinging and swarming without resorting to separations like those found in Section 19 of the Ontario Bees Act. The different approaches these jurisdictions took to regulating beekeeping can be found in Table 2, which provides an overview of the policy framework in each jurisdiction and ranks the various measures by their commonality. Additional detail on beekeeping policy and education in each jurisdiction can be found in Appendix I. In particular, these case studies illustrate that Ontario's 30m restriction is unusually strict in comparison to other North American jurisdictions.

Table 2: A Snapshot of North American Beekeeping Policy

Legend:
 = N/A **Red** = Mandatory **Blue** = Voluntary / Alternatives

Regulatory Framework	
Beekeeping is regulated under	Is Registration Required?

Requirements / Voluntary Measures



Health (Bees and/or Public)	Rights of Inspector	Movable Frames	Flight Path: Hedge or Fence	Number of Hives	Water Source	Distance from Adjacent Property	Flight Path: Height Above Ground	Proximity to Other Hives
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Ontario Toronto	Bees Act	Yes	Yes	Yes				98 ft / 30m		
Alberta Calgary	Bee Act	Yes	Yes							
	City Beekeeping Guidelines		Yes	Yes	5 ft	2-4 / lot	Yes	20 ft		
British Col. Vancouver	Bee Act	Yes	Yes	Yes						Yes
	City Beekeeping Guidelines		Yes		6 ft	2-4 / lot	Yes	25 ft	20 ft	
California San Fran.	Food / Agri. Health	Yes	Yes							
	Health Code / Nuisance									
Illinois Chicago	Bee and Apiary Act	Yes	Yes							
	City Zoning Ordinance					< 5 hives				
Manitoba Winnipeg	The Bee Act	Yes	Yes							
	Not permitted in residential zoned areas*									
New York NYC	Agriculture		Yes	Yes						
	Health Code & Bee Assc BMPs	Yes	Yes	Yes	6 ft		Yes		< 6 storeys	
Quebec Montreal	Animal Health Protection Act	Yes	Yes	Yes	8 ft			49 ft **		

*Beekeeping is currently not permitted in Winnipeg's residential areas but is expected to change soon. Details outlined in Appendix.
 ** Distance requirement in Quebec can be substituted for solid fence of 8 ft. Details in Appendix.

As is the case in Ontario, each of these jurisdictions has a state or provincial policy which mandates that hives be registered with a government agency. This reflects a shared interest in keeping healthy bee populations and ensuring the health of colonies through regular inspection of hives. However, each state or province limits their power to these responsibilities and leaves other measures to the local level of government.

At the local level, it is common for governments to ensure that urban beekeeping remains safe by developing voluntary best management practices in consultation with local beekeepers. In Calgary, Vancouver, and New York, municipal governments have worked with local beekeepers, as well as provincial or state authorities, to provide guidelines that encourage best management of bees in the urban area. These best practices frequently include provisions that hives be kept at a certain height above the ground, or that a barrier be installed to intercept the bees' flight path. They also frequently recommend that beekeepers provide a water source for their bees in order to prevent problems that can arise if bees seek out other water sources, for example in neighbouring swimming pools. These measures can serve to mitigate the potential for bees to become a nuisance to surrounding properties.

Another key method these jurisdictions use to mitigate public nuisances of bees is education, of the public and of beekeeping practitioners. Public education which seeks to inform the public about the importance of bees to the local ecosystem as well as the differentiating between honeybees and other insects such as wasps has been an important component of municipal approaches to beekeeping in a number of cases. Many municipalities have programs aimed at educating beekeepers about how to safely maintain their hives, these are often developed and implemented informally through interaction with beekeeping associations, the respective city authority, and beekeepers themselves. This informal education allows for active and non-threatening conversation to be had about the importance of keeping bees in conformity with known best practices. In Winnipeg, the municipality is considering a mandatory course for beekeepers at the local university (Report to Standing Policy Committee on Protection and Community Services of the City of Winnipeg, September 6, 2012).

Overall, each of the cases we examined are successfully allowing beekeeping to take place in their local urban jurisdictions with hives less than 30m from adjacent properties. The success of these cases should inform and guide potential changes to beekeeping policy in Ontario.

Recommendations

Through these case studies we identified five overarching themes that are especially applicable and valuable to the current regulatory regime around beekeeping in Ontario.

1. Leave Decision-making to Municipality

This recommendation is predicated upon the subsidiarity principle, which states that matters should be exercised by the lowest level of government capable of addressing the matter effectively and that matters should only be moved to higher orders of government if there exists a strong case for doing so. The majority of the states and provinces in our case studies leave much of the decision-making power in the hands of their municipalities. Moreover, the people we interviewed made it clear that provincial/state regulations were intentionally developed this way to leave room for municipalities to tailor beekeeping policy to the local needs and values of their constituencies. They did, however, agree that one area that was critical to keep at the provincial/state level was an overarching policy which protects the health of bees and colonies in their regions. When comparing these jurisdictions to Ontario, Section 19 of the Bees Act (1990), stipulating a 30m restriction, appears out of place. Making a shift in Ontario towards municipal regulation of some aspects of beekeeping would result in the development of localized policy that responds to the needs and values of the local government, bee experts, and urban beekeepers.

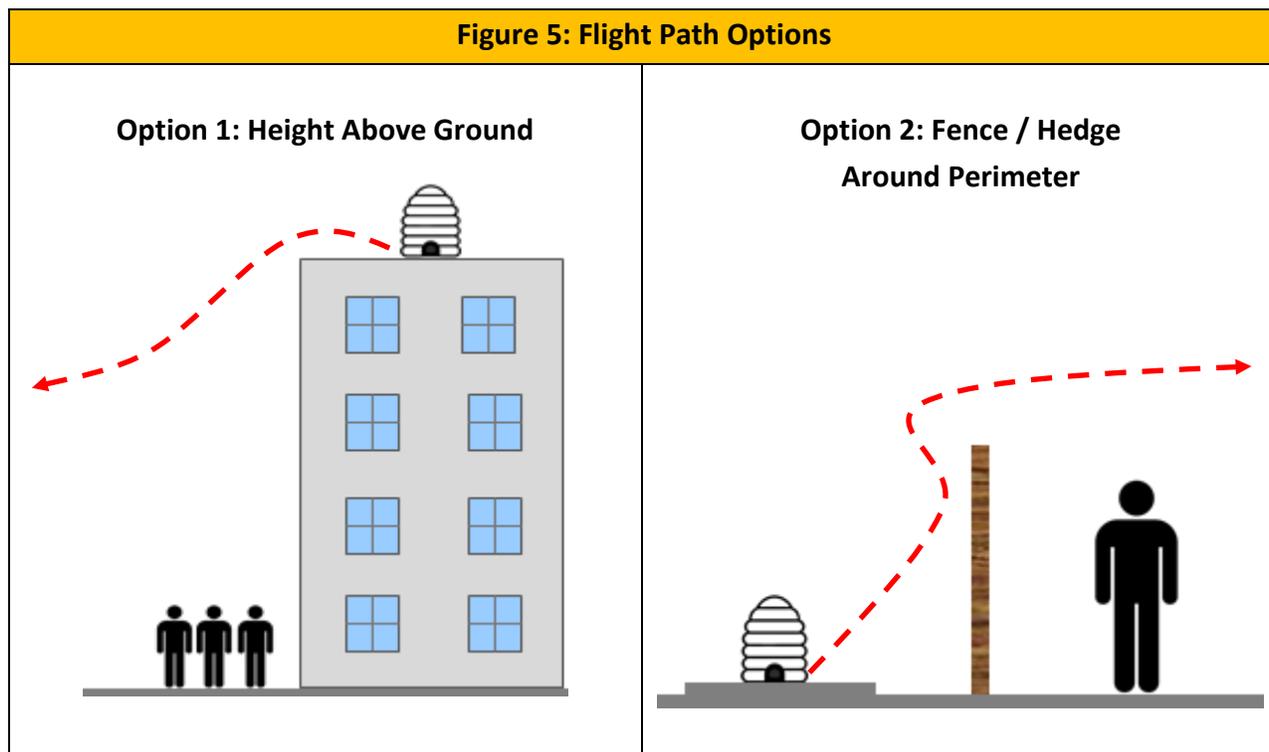
Figure 4: Policy Concerns and the Most Common Level of Government Addressing Them

Municipal Level		Provincial Level	
Distance from adjacent property	Appropriate locations	Bee health	Bee transport
# of hives / lot	Flight path & BMPs	Registration for health inspection	Rights of inspector

2. Regulate Flight Path, Not Distance

Policy in these jurisdictions is less concerned about the 2-dimensional distance between hives and adjacent properties than it is with the flight path of the bees. Vancouver, Calgary, and Winnipeg all recommend or mandate that certain measures to control the flight paths of bees be implemented by hive owners. The most common such measure is to place the hive behind a fence or hedge, six or more feet tall, running parallel to the property line. This barrier forces bees to fly above any passersby as they enter or leave their hives. This limits interactions with humans near hives, where bees are most likely to become aggressive. Another alternative used by municipalities was to

require that beehives be situated eight or more feet above the ground. When we discussed Ontario’s 30m rule with respondents, the general consensus was that there are other, more flexible, ways to mitigate bees’ impact on public health and safety. In fact, one Provincial Apiarist even indicated that “from a public safety and health perspective, there is no bearing whatsoever on distance; flight paths are the issue” (Personal Communication, October 25).



3. Voluntary Measures Can Work

Voluntary best management guidelines can play an important role in regulating beekeeping, especially at the municipal level. In both Vancouver and Calgary municipalities worked in partnership with provincial governments to establish voluntary guidelines for urban beekeeping. These guidelines include: limits on hive densities per acre; the appropriate location of bees on properties; and strategies to control flight path. Our respondents in these jurisdictions felt that these guidelines are being practiced by most urban beekeepers and are indeed mitigating issues like swarming and stinging.

4. Cultivate Communication and Support Networks

Cultivating strong networks of support between the beekeepers, local beekeeping associations, municipalities and the province is essential. Provincial and state respondents indicated that many municipalities are not familiar with, or do not have the resources to address, problems that might arise from urban beekeeping. Thus, many municipalities, especially smaller ones, may opt to make

urban beekeeping illegal in their jurisdiction to mitigate the risks associated with uncertainty (Provincial Apiarist, Personal Communication, October 25). Developing and cultivating strong networks of support between beekeepers, local beekeeping associations, municipalities and the province is critical to ensuring that policy is developed properly and any problems are dealt with quickly and fairly.

5. Education is Paramount

It is extremely important to provide free or low-cost education about bees and beekeeping for both the public and apiculturists. In the municipalities we studied, education is primarily occurring in the form of community workshops led by local organizations and municipal governments. For example, in San Francisco, inspection processes by vector control are accompanied by local beekeeping experts, which serves as a method of informal education. Some municipalities may even make education programs mandatory for beekeepers by requiring a certification program, as has been suggested in recommendations for Winnipeg's on-going regulation review by the municipality.

Next Steps

This section provides direction for urban beekeepers, beekeeping organizations, and local governments interested in changing the current regulatory regime regarding beekeeping in urban Ontario. The following section is divided into local, municipal, and provincial strategies for pursuing changes to beekeeping policies and practices in Ontario. These also broadly conform to short, medium, and long-term approaches. We envision most of the short-term work happening at the local scale and action in the medium and long-term occurring at the municipal and provincial scale respectively.

Community and Organization Level

In the absence of any change to the regulatory framework at the provincial level, it is possible to build local capacity for beekeeping in the following ways:

- Consult local beekeepers and organizations further on their practices, needs, and values. Draw upon the knowledge of bee experts and successful best management practices in other leading jurisdictions to inform this process.
- Research health and safety concerns affecting urban communities, beekeepers, and bees.
- Investigate the economic viability of local honey production within the municipality and consider developing a business case for urban beekeeping.
- Develop an inventory of locations in cities where beekeeping can occur in conformity with Section 19 of the Bees Act.

Municipal Level

At this stage, local organizations and stakeholders should engage the municipal government to further develop a strong network of support to address the issue of urban beekeeping within their jurisdiction. Key tasks should include:

- Further develop research undertaken by local organizations and stakeholders, and address the capacity of municipalities to regulate urban beekeeping in the future, especially as it concerns budgetary constraints and limits to available human resources.
- Consider how tools such as zoning can regulate commercial and residential practices relating to beekeeping.
- Explore alternatives to a strict regulatory approach to urban beekeeping such as voluntary best management practices developed in consultation between municipalities and local beekeepers.
- Consult with the province throughout the development of these guidelines or regulations. Maintaining strong relationships between these levels of government is essential for successful urban beekeeping.

Provincial Level

Developing a provincial strategy at this stage will allow for opportunities to examine the needs and interests of the province, municipalities, and local beekeepers regarding the practice of urban beekeeping. In this stage:

- There should be sufficient information to evaluate how best to amend the current regulatory framework and to begin to shift decision-making to municipal governments.
- Ontario policy makers should explore options to mitigate bee health and public safety concerns without the use of the rigid 30m rule. We have identified two options for how this might be done:
 - Option 1: Make 30m more flexible by including flight path options
 - For example, allow for one or more of the following: (1) the beehive should be located 30 metres or more from adjacent property line; (2) there should be a six foot fence or hedge around the beehive; OR (3) the beehive is to be situated eight or more feet above ground level. Furthermore, there should be mention of ensuring access to water sources.
 - Offering this flexibility would ensure public safety and health at a Provincial level while allowing more urban beekeepers to legally keep bees.
 - Option 2: Remove current Provincial regulation on distance
 - Consider leaving this type of decision-making to the municipalities. Work in partnership with local governments and organizations in order to develop bylaws or voluntary best management practices.

Conclusion

Adopting these recommendations will bring the regulatory framework for urban beekeeping in Ontario in line with a growing body of practice in other jurisdictions which treats apiculture as a pursuit that, in the context of proper management, can be a safe and healthy component of urban communities. Developing an appropriate management regime for urban beekeeping, in consultation between the province, municipalities, beekeepers and the public, is the way forward. Beekeeping in cities has the potential to provide a safe habitat for honeybees, opportunities for small-scale commercial honey production, and a number of social benefits as people connect with natural processes through maintaining and caring for hives.

The municipalities we highlighted in this report are examples of how apiculture can be integrated into cities. They do so in a way that successfully mitigates any potential harms associated with keeping bees in close proximity to people. They show that: municipalities and local beekeepers can effectively determine best management practices that work for them; managing flight paths rather than distances can work; voluntary management practices and networks of support can make for safe beekeeping; and that education, both for the public and for beekeepers is paramount.

There is work that still needs to be done to understand the most appropriate path for Ontario to take regulating urban beekeeping. One key area will involve building networks between urban and rural beekeepers to ensure that any change to policy meets the needs of all beekeepers in the province. It will also be necessary to do more research into what best management practices should be in place for urban beekeeping, and to find the balance between voluntary, cooperative approaches and statutory regulations. Advocates of urban beekeeping should work with their local communities, municipalities and provincial authorities to develop the knowledge and capacity necessary for addressing the needs of beekeepers, urban communities, and bee colonies. For those wishing to pursue changes to existing legislation, we hope that this report can serve to initiate a discussion about urban apiculture and provide guidance for a new approach to beekeeping in urban Ontario.

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APPENDIX I: Summary of Case Studies

Summary of Case Studies	
Government	Summary of Beekeeping Regulations
<p>Calgary, Alberta</p>	<p>Alberta Alberta’s Agriculture and Rural Development regulates apicultural activities under the Bee Act, which requires anyone owning, using, or operating beekeeping equipment to register annually (at no cost) with the Provincial Apiculturist. The Act also outlines regulatory measures for controlling disease and swarming, importing bees or equipment, inspection, and appeals processes (Province of Alberta, 2010).</p> <p>Calgary In Calgary, there is a by-law against city livestock, however, beekeeping is legal by omission as the public has not expressed serious concerns about the practice (Piche, 2010). Formal bylaws regulating urban beekeeping do not exist, however, voluntary best management practices were developed by the City, in consultation with the Province and local beekeepers. The guidelines were developed through a series of white papers intended to address the growing practice of urban beekeeping in the City. Furthermore, due to budgetary constraints, this approach was particularly favourable as there are limited funds for the municipality to assume the responsibility of formally regulating the practice. The provincial apiculturist involved in this process confirms that this approach has been successful as it adequately addresses public health concerns, the well-being of the beekeepers, as well as the bees themselves. Furthermore, this model continues to be successful as strong relationships and a network of support was cultivated between the City, Province and local beekeepers—all of who are committed to educating the public about urban beekeeping.</p>
<p>Montreal, Quebec</p>	<p>Quebec Quebec’s Animal Health Protection Act permits urban beekeeping under certain conditions. There are special provisions regarding bees under the Act, such as ensuring that all hives contain movable frames, controlling the presence of parasitic diseases as well as swarming, and containing a bee colony within 15 metres of a public road or dwelling (unless a solid fence at least 2.5 metres in height extending beyond the limits of the hive for a distance of no less than 4.5 metres) (Canadian Legal Information Institute, 2012).</p> <p>Montreal Some Montreal boroughs permit the practice, as long as it does not present a public nuisance.</p>
<p>San Francisco, California</p>	<p>California California’s Food and Agricultural Code Sections 29040-29056 regulates apiaries although direct registration is overseen by the commissioner of each county if they exist, if not the director of food and agriculture for the state will oversee a uniform process of registration for apiaries. All apiaries must only operate on residential land owned by the apiarists and be marked by a sign that there are hives on the premises unless an ordinance is passed in the county or city that sets out specific details about identification of apiaries.</p>

	<p>San Francisco</p> <p>Honey bees are an exempted exotic animal in San Francisco’s Health Code which makes them explicitly legally kept in the area although there are no regulations enforcing specific practices. Sec. 581 of the San Francisco Health Code (2006) states that no person shall have upon any premises or real property owned, occupied, or controlled by him/her any public nuisance except for harborage of honey-producing bees regulated by the CA Agricultural Code which are determined not to be a nuisance under State law. When honeybees do cause a nuisance, Vector Control relies on local experts in apiarists associations and networks to educate new or poorly practicing apiarists (Karen Peteros, Director and Co-Founder of Bee-Cause, personal conversation 2012)</p>
<p>Winnipeg, Maditoba</p>	<p>Manitoba</p> <p>Beekeeping in Manitoba is regulated under The Bee Act (1988) which requires a onetime mandatory registration and the rules that provincial inspectors must follow in order to protect bee populations from disease. The Act (1988) does not specify any specific requirements for keeping bees with regard to flight paths, number of hives, distance from property lines etc.</p> <p>Winnipeg</p> <p>Winnipeg is currently in the process of reviewing its regulations around beekeeping. To date, there are very few sites zoned in a way that permits apiarists to practice within the City i.e. University of Manitoba, the zoo, etc. The review process is looking at strictly regulating beekeeping within the City; the proposed regulations are reflected in the in-depth case-study chart.</p>
<p>Vancouver, British Columbia</p>	<p>British Columbia</p> <p>The Ministry of Agriculture and Lands permits beekeeping under certain conditions. These restrictions are outlined in Chapter 29 of the Province’s Bee Act and in summary, include: a person must register apiaries under the act; an inspector who has reasonable cause to believe that a person is contravening the registration requirements may seize and destroy or otherwise dispose of bees or beehive equipment; the owner of an apiary must maintain a sign at the apiary showing the name of the owner (BC Laws, 2012).</p> <p>Vancouver</p> <p>Beekeeping is allowed in the City and Council even openly encourages it. The following municipal <i>guidelines</i> complement the provincial standards: beekeepers will maintain bees in a condition that will reasonably prevent swarming and aggressive behaviour; beekeepers are to provide adequate water sources; hobby beekeeping is limited to one and two-family dwelling districts, agriculture districts, community gardens, or sites where beekeeping will form part of an educational program; a maximum of 2 beehives per parcel of land less than 10,000 sq ft or a maximum of 4 on lots greater than 10,000 sq ft; beehives are restricted to rear yards; beehives must be situated 8 feet or more above ground level OR the beehive entrance is to be situated behind a solid fence of hedge that is 6 ft in height OR a beehive will be located a minimum of 25 feet away from the neighbouring property line. (City of Vancouver, 2006).</p>
<p>Chicago, Illinois</p>	<p>Illinois</p> <p>The State’s Bees and Apiaries Act allows beekeeping under certain conditions. In summary, these conditions include: every person keeping one or more colonies of bees must register with the state’s Agriculture Department annually; the registration number must be posted</p>

	<p>in a prominent place within each apiary; the bee hives must not be a “nuisance” (i.e. diseased, have parasite, or be an exotic strain of bee); hives must be easy to inspect; hives cannot be transported across state lines without a permit (Illinois General Assembly, 2012).</p> <p>Chicago Urban beekeeping is legal and is being actively promoted by the City. In fact, City Hall currently has two beehives on its roof. The only restrictions that the City makes above and beyond that of the state is in setting the maximum number of hives an individual may keep, five (City of Chicago, 2012).</p>
<p>New York, New York</p>	<p>New York State The State’s Department of Agriculture and Markets allows apiaries under most conditions. These conditions, outlined in Article 15 of the Agriculture and Markets Law, are primarily concerned with the health of the bees and taking the proper precautions to mitigate risks associated with infectious disease. In summary, the conditions include: the commission may cause inspections to be made of apiaries; the commission shall have access to all apiaries; no person shall keep any colony of bees affected with a contagious or infectious disease; the hives must have frames and combs that may be easily removed; the shipping of bees across state lines requires a permit (ESHPA, 2012).</p> <p>New York City In March of 2010, bees were removed from the list of animals that residents were prohibited from raising and urban beekeeping was therefore legalized across the five boroughs, subject to certain restrictions. Beekeepers must: adhere to appropriate beekeeping practices; maintain bee colonies in moveable-frame hives; provide a constant and adequate water source; locate hives so the movement of bees does not become an animal “nuisance” (as defined below); be able to respond immediately to control bee swarms and to remediate nuisance conditions. “Nuisance” is defined in section 161.02 as “...aggressive or objectionable bee behaviors, hive placement or bee movement that interferes with pedestrian traffic of persons residing on or adjacent to hive placements; and overcrowded, deceased or abandoned hives” (NYC Beekeeping Association, 2012).</p>