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RESIDENTS WHO REMOVE TREES: UNDERSTANDING RATIONALES AND EXPLORING DETERRENTS

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Why do residents remove healthy trees and how can these removals be stopped? My lab group (HOUSE Lab, University of Toronto, Mississauga) has spent the last six years exploring residents' attitudes and actions related to trees on their property, including yard tree removal. Through a better understanding of the decisions residents make when removing a tree, we hope to identify strategies for minimizing future removals.

Through surveys and interviews with homeowners in the Greater Toronto Area (Ontario, Canada), we found that approximately two-thirds of residents have removed at least one tree on their property. Based on the reasons provided by residents, about one-third of those trees were removed because they were dead, injured or diseased (Conway 2016). This was the most common reason given for tree removal, and the number has likely gone up over the last few years as emerald ash borer (EAB) has become widespread in the region. Removal of dead or dying urban trees is a potentially justifiable decision to reduce risks, so we were interested in focusing on the other reasons people give for removing trees.

The next most common reason residents gave in our survey was to reduce risk to property and people (17%). To be clear, these were healthy trees that posed a risk. They typically had branches overhanging roofs or roots suspected of getting into pipes or foundations. Not surprisingly, assessment of risks appears to be based on residents' perceptions, which are shaped by knowledge and experiences, rather than any formal risk assessment method that an urban forestry professional might rely on. For example, in a study exploring residents' reactions to a major ice storm in the Toronto area in 2013, which caused widespread loss of electricity that was attributed to

falling branches taking down wires, we found residents' assessment of tree risks increased and their willingness to accept such risks decreased, at least in the short-term (Conway and Yip 2016).

Positive messages from city officials and urban forest advocates after major storm events that highlight tree risks could help counter both personal experiences and media coverage of the storm damage (which tends to focus on destruction) possibly dampening residents' desire to remove trees. For example, after the Toronto ice storm, several NGOs were proactive in promoting positive messages about urban trees and the need for post-storm replacement planting, hoping to counter messaging from Toronto Hydro (the local utility company) that trees were the reason so many lost electricity during the storm and why restoration of service took so long (Conway and Jalali 2017).

Other reasons provided by residents for healthy tree removal were improving the aesthetics of their yard (15%), reducing maintenance (8%), and a desire for more sunlight in the yard (8%). At the same time, most people reporting that they had removed at least one tree also planted replacement trees, suggesting residential behavior limits the number of mature trees but does not necessarily reduce tree density. The pattern of young trees dominating an urban forest is quite common (City of Toronto 2013; McPherson et al. 2016), and appears to be at least partially a result of premature tree removal by residents.

When we asked residents why unwanted trees had not yet been removed, about half of the time the monetary costs associated with removal was the reason. This situation often occurred when the tree was unwanted because it was 'too big' in the eyes of the residents. Cost is clearly an effective deterrent for some, but potentially plays out differently across households. While our survey data suggests household income is not related to tree removal (Conway 2016), cost is likely less of a barrier for wealthier households.

Reducing Tree Removals Through Better Planting Decisions

"*[the tree seller] said 'it's gonna be huge' and I said 'that's okay'.' And at that time I thought 'sure, I don't care'. But now I do care, now that I see how it's growing and how large it is and how much work it is for me to keep it trimmed. I should have listened...*" Homeowner, Greater Toronto Area

Several residents who reported removing healthy trees had actually planted the tree; these trees were not inherited from previous owners. When asked why these healthy trees were removed, many residents' admitted that they had chosen the wrong species or planted it in an inappropriate location (Conway 2016). Basic knowledge gaps related to the growth and mature height of common species were quite apparent. The importance of educating homeowners about tree planting and care is well-recognized (Driscoll et al. 2015), including the oft repeated mantra of "right tree, right place." The tree removal decisions we documented are a reminder that good decision-making at the planting phase can reduce premature tree removals, and that the right tree is as much about the homeowner's desires and expectations as the site conditions.

Regulating Private Tree Removal

How can healthy tree removals on private property be reduced? Many municipalities in the Greater Toronto Area regulate private tree removal through a permitting process. In Toronto, residents are required to apply for a permit to remove any tree over 30 cm (12 in) diameter at breast height

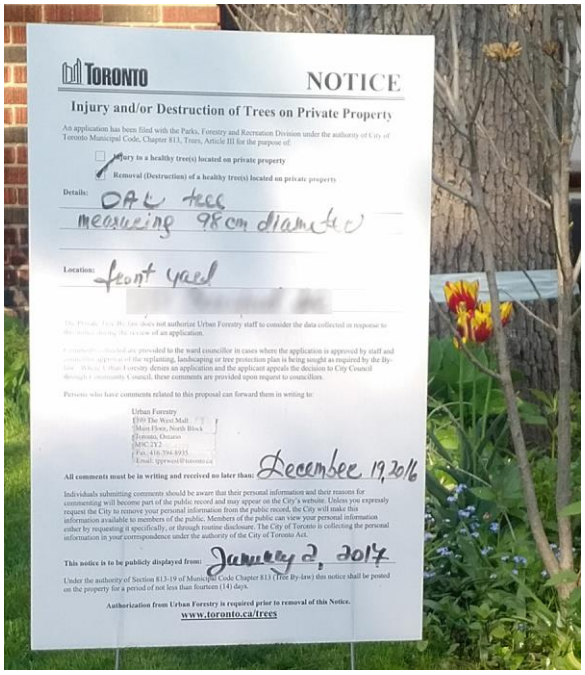

Figure 1. A public notification sign in the front yard of a Toronto homeowner who has requested a permit to remove a private tree on their property. The specified tree is in the background.

(http://www.toronto.ca/311/knowledgebase/65/101000042065.html). The application requires a small fee, an arborist report, and a landscaping plan. A public notice is then placed in the front yard for at least two weeks (Figure 1), alerting the community to the removal request and providing options to submit comments. Final approval is dependent on the local city counselor signing-off on the permit, with anecdotal evidence suggesting that counselor approval rates are uneven across the city.

Is a regulatory approach effective? Maybe. The application process itself is likely a deterrent to some residents, although this was not a response we documented in our research. Of course, permit applications can also be denied, particularly if replacement trees are not included in the landscaping plan. However, Toronto's approval rate has been as high as 95%. As one urban forestry practitioner told me, "It is called the 'Private Tree by-law' not the 'Private Tree ***Protection*** by-law' for a reason" (personal communications, May 5, 2016).

Given the high rate of permit approval, some argue that the real goal of private tree regulations is educating homeowners about the importance of retaining trees, rather than actually disallowing removals. It is challenging to assess how effective this approach is. Our recent survey of homeowners in Toronto and neighboring municipalities found that awareness of private tree removals was quite varied across different neighborhoods and one-third of residents did not support regulation of trees on private property. While property-rights rhetoric is not as pervasive in Canada as the US, there were many residents who felt that municipalities should not regulate what happens in private yards. Thus, a sizable population may violate these regulations out of ignorance or defiance.

Enforcement of private tree by-laws in the Toronto region is very limited, due to costs and the logistical challenges of confirming a private tree was unlawfully removed, although a few high profile exceptions have occurred in recent years (i.e., media coverage of the city's investigation of the rapper Drake's property where

multiple trees were allegedly removed without a permit; Winter 2016). Lack of enforcement highlights the importance of education not only about the existence of the by-law, but also its purpose. Additionally, arborists and others employed to remove trees play an important role. Several residents we have interviewed over the years said that the company they wanted to hire to remove a healthy tree refused to do so until a permit was in-place.

While some residents are removing healthy trees from their yards, better education at the time of planting could help reduce premature tree removal.

For private tree regulations to be effective deterrents to healthy tree removal, extensive outreach about their existence and purpose is needed.

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