



Petrified Forest

Toronto's trees are water deprived, stressed out, bug infested and old. If we don't stop killing them, they might just kill us [By Andrea Curtis](#)



*A Norway maple near Coxwell and Danforth, uprooted by a storm last summer
Image credit: Brian Labelle*

The summer of 2007 was not a good one for Toronto's trees. It was one of the driest periods on record since the dust bowl of the 1930s, and the city was hammered by vicious windstorms. The urban forestry department logged 7,700 storm-related calls before the end of August alone. Branches down, roads blocked, cars totalled.

In the middle of June, a fully grown Norway maple near Coxwell and Danforth was uprooted, crushing a two-storey home. An elderly man who was inside at the time narrowly escaped injury. In late August, a group of friends attending a party near the Scarborough Bluffs weren't so lucky. Roasting marshmallows in the backyard, the seniors, members of the Scarborough Singles Social Club, heard several loud cracks from

a 60-foot willow nearby. The tree began to sway. The party-goers ran for the house, but they couldn't move quickly enough. The tree fell across the yard, and three people were injured, one of them rushed to Sunnybrook in critical condition. A 70-year-old grandmother died on the spot.

If the problems of the city's urban forest were a whisper before, the deadly Scarborough willow was an ear-splitting shriek. There are 6.5 million trees in Toronto, and a quarter of them, according to the urban forestry department, are in need of maintenance. Our tree canopy declined six per cent between 1994 and 2002, the result of budget cuts and increased stress from climate change, development, pollution and invasive species. Plus, many of the trees that lend such downtown neighbourhoods as Riverdale and the Annex their character are dying; planted around the same time, they're reaching the end of their lifespans together, too.

It's a bitter kind of paradox that the depth of the trouble with the city's existing tree canopy is becoming clear at a time when trees and the environmental and health benefits they offer are starting to seem like the only thing separating us from a wholesale slide into a polar bear-less, smog-choked, drought-stricken desert. The slogans are everywhere: plant a tree, cool the globe; a tree a day keeps the carbon at bay. Talking about what trees "give back" has become commonplace for everyone from environmentalists to real estate agents. In property-mad Toronto, trees are said to increase house values by up to 25 per cent. Planted as a windbreak, they can reduce heating costs by five to 15 per cent. Used for shade, they act like a giant parasol, cutting down air conditioning use by 20 to 40 per cent. And recent research showed that schoolchildren were better able to concentrate and control their impulses with merely a view of trees or other plants.

It's not overstating it to say that trees make it easier to breathe. A stand of 40 maples absorbs as much carbon dioxide in a year as is produced by a car travelling 20,000 kilometres. And that same stand produces enough oxygen every day to sustain more than 150 people. The leaves of Toronto's trees also remove 997 metric tonnes of air pollution—nitrogen dioxide, sulphur dioxide, ozone and carbon monoxide, among other pollutants—every year. The urban forest even cuts down on water pollution, since trees absorb and filter rainwater.

It's enough to bring out the tree hugger in anyone. And it has. Last summer, 59-year-old Ken Wood chained himself to one of nine 40-foot linden trees across the street from his Lansdowne Avenue home in order to stop a city forestry crew from cutting them down. In Dufferin Grove Park, residents rallied against a proposed replacement of a wading pool because it risked damaging the large Norway maples that shade it. And at Yonge and Eglinton, a group of women tried to pressure the school board and a private developer into saving eight mature silver maples from destruction on the grounds of North Toronto Collegiate. They posed for media photos (futilely, it turned out) to show their opposition, hands dramatically clasped together around the base of one of the trees.

We're finally realizing how much we all have riding on the branches of a bunch of aging, water-deprived, salt-licked, stressed-out, soil-hungry plants. But what if it's too late?

The concept of a forest within the city limits is a relatively new one. When the first European settlers arrived on the shores of what would become Toronto, they were confronted by dense stands of willow, poplar and cedar and, a little further north, butternut, beech, ash, oak, elm, maple and the towering white pines for which the Don Valley would become known. But within 100 years, much of the indigenous forest was cut down. By the mid- to late 19th century, with the population ballooning and sawmills churning out wood for the settlers' many needs, native trees had been largely beaten back into marshes, ravines, woodlots and hedgerows—replaced by horse chestnuts and other species more familiar to the newcomers.

- Page 1 of 4

[Petrified Forest](#) - Page 2 [From the April 2008 issue](#)

The city didn't take responsibility for these trees until 1895, when a crew of three men was hired to plant and prune young specimens, as well as remove dying ones. A decade later, more workers were brought on because of alarm about the number of trees that had become a danger to life and property.

It was then and over the next 50 years that the neighbourhoods we now think of as established were built. Entire streets were planted at once, many with a single kind of elm, maple or linden. Non-native species, such as the now-ubiquitous Norway and Manitoba maples, adapted well to the harsh conditions of urban life, elbowing out many of the remaining native trees and plants as they reproduced.

Toronto became known as the City of Trees, but it was for their aesthetic—not environmental—value that they were prized. Trees were still considered the private horticultural concern of individual homeowners.

The devastating Dutch elm disease outbreak of the 1950s and '60s, which wiped out at least 80 per cent of Toronto's 35,000 white elms, did much to awaken urban dwellers to the wide-ranging environmental, sociological and economic significance of the trees in their midst. Entire city blocks were stripped of their cover; the coveted tunnel effect that elms can create, leaning over a street, embracing in the middle, vanished.

It was during that losing battle with the deadly fungus that Erik Jorgensen, a Danish forestry professor working at the University of Toronto, coined the term "urban forestry." It neatly conveyed the growing understanding that the city's public and private green spaces are profoundly interconnected. In the past decade or so, however, the idea of the urban forest has been transformed again, from something worthy of scientific thought into an urgent collective responsibility.

A controversial 2004 bylaw that restricts tree cutting on private property is both a symbol and a litmus test of this new attitude. Based on the belief that we all have a vested interest in maintaining the urban canopy (because we share its benefits), the bylaw requires property owners who want to remove any specimen larger than 30 centimetres in diameter to jump through several hoops. First they must submit an arborist's report (starting at about \$150 and heading upward), then apply and pay for a permit (another \$100 per tree, \$300 if the removal is construction related). Failure to comply brings with it fines ranging from \$500 to \$100,000.

Predictably, it's been the source of a new suite of tensions. Critics object to what they see as municipal meddling in private affairs. *Who are they to tell me what I can do on my own lawn?* But urban foresters and environmentalists hail the bylaw as a victory, especially since it provides a legal check on contractors and real estate developers, for whom the issue of tree removal is most pressing on a day-to-day basis. Yet, with just 16 forestry staff assigned to monitor infractions across the city, it's not an easy bylaw to police (their job is made more difficult since roughly half of Toronto's trees are on private property, many of them hidden from public view). Last year, about a thousand applications for permits were received, with 2,700 trees approved for removal. Only four infractions had to be referred to the city's legal department to pursue via prosecution.

David Miller's ambitious climate change plan, dubbed "Change Is in the Air," acknowledges the critical role trees play in the health of the environment. One of its key proposals is to double Toronto's canopy—which currently extends over 17 per cent of the landscape—by 2050. Few would argue against planting; it's insurance for when older trees die or insects and drought wreak havoc. And in a decidedly unsexy business, it's sexier and more photo op ready than, say, pruning and mulching. But when the emphasis is on putting new trees in the ground, the city's existing stock can get short shrift. Ignoring the mature canopy is also environmentally counterproductive, since bigger trees are 60 to 70 times more effective at removing air pollution than their smaller counterparts. In any case, before we can increase the canopy, we are going to have to slow down the losses.

"We wouldn't have this problem if we'd planted trees in 1957, 1967," says Todd Irvine, a boyish 35-year-old arborist with an architect's funky glasses. "My concern is it's going to get worse before it gets better." Irvine and I are in front of the ROM's old entrance on Queen's Park just south of Bloor, admiring the tenacity of a 150-year-old 70-foot white oak that has defied the considerable odds stacked against it, including three museum renovations, two subway lines built underneath and countless idling cars, buses and trucks pulled up alongside.

"Look," Irvine says, directing my gaze toward the oak's canopy. "It's in full leaf. It's not just healthy, it's still growing."

[Petrified Forest](#) - Page 3 [From the April 2008 issue](#)

Without warning, he begins pacing north toward Bloor, counting under his breath. He takes big, wide strides, his black Mountain Equipment Co-op bag bouncing against his back. “Twenty-three, 24, 25 metres. That’s a pretty big canopy for an oak. If it wasn’t here [in the middle of downtown], its roots could be twice as wide.”

Part tree expert, part advocate, Irvine splits his time between working for the nonprofit group LEAF (Local Enhancement and Appreciation of Forests) and Bruce Tree Experts, the company responsible for ensuring the ROM oak made it through the most recent renovation intact. (Six 20-foot red oaks lining Bloor were sacrificed to the renovation’s jutting Crystal.) Still, he admits, its survival is due as much to the tree’s solid start a century and a half ago—when it was surrounded by market gardens and small cottages—as anything his team did.

Today’s street trees—especially those planted in raised concrete boxes without enough space for their roots to thrive—face a less hopeful future. Irvine points out a spindly green ash growing in a precast coffin across the street as illustration. The bark is flaky, and a tumorous growth bubbles out near where the tree meets the hard, grey, garbage-strewn soil. It and others like it have an average life expectancy of five years.

Even trees planted in residential neighbourhoods tend to be an aesthetic afterthought, dropped in once building or repair is finished, instead of being treated as the essential city infrastructure they are—as important as hydro poles or sewer lines. And with greater population density and redevelopment pressure, trees and the soil they need to grow get squeezed out.

“It’s not just a matter of sticking trees here and there,” says Irvine. “A lot of the street corners in Toronto are now equivalent to a desert in their conditions. We can’t even grow the native species that were once here. We have to completely rethink what we plant and how we build our cities.”

Simply focusing on regular watering and pruning would increase their chances of survival enormously. City trees, arborists agree, should be pruned every five to seven years; in Toronto, trees can go unattended for as long as 20 years. And maintenance invariably takes a back seat to emergency work. Though the city recently boosted urban forestry’s budget by \$3.12 million to deal with the serious backlog, last summer’s wild weather ate up a big chunk of it. It’s a vicious cycle, since lack of maintenance now, especially in older neighbourhoods, will result in more emergency calls in the future.

As Irvine and I turn onto Philosopher’s Walk, tracing the winding path that mimics Taddle Creek underneath, he tosses off botanical anecdotes as if laying a trail of bread crumbs. He points to beech trees with bark like an elephant’s hide, a big old English oak, a knobbly horse chestnut, a graceful willow, its branches hanging down like a sigh. His enthusiasm is low-key but infectious, and I find myself noticing bark protrusions and branch architecture I never would have paid attention to before. We end up near a row of

elms bordering the sports field behind University College—some of the few that survived the Dutch elm disaster.

Today, it's new invasive alien species, such as the Asian long-horned beetle (whose preferred host is the maple) and the emerald ash borer—both likely transported to North America in shipping crates—that arborists are most concerned about. The Asian long-horned beetle got a lot of attention in 2003, when it was discovered in an industrial area between Vaughan and Toronto, and nearly 30,000 trees had to be destroyed. The Ministry of Natural Resources has allocated up to \$1 million in compensation to replant the worst-hit areas, but it will take at least 30 years for these new trees to reach the same level of maturity as those cut down. And the threat hasn't gone away. As recently as last October, trees near Jane and Finch and Jane and Sheppard were identified as infested. Those specimens, and trees in a 200-metre radius—roughly 1,200 in all—were removed and chipped to prevent the infestation from spreading further.

Last December, the emerald ash borer—a pretty, metallic-green insect that has the potential to destroy the city's 420,000 ash trees—was found to have broken the quarantine zone holding it at bay in southwestern Ontario. Thirty-five trees in the vicinity of Sheppard and Highway 404 were reportedly infested. Foresters don't yet know how to control the spread of this one; removal alone has proven ineffective, and the insects are known to be able to travel six kilometres in a single flight—more if it's windy. A full-fledged infestation would also be financially devastating, costing the city \$40 million in removal and replacement costs for street trees alone. The hundreds of thousands of ash trees in parks, ravines and on private land could be affected to the tune of several hundred million more.

“The problems of the urban forest aren't going to be fixed easily,” Irvine says as a windstorm batters the field, the elm trees sheltering us from the worst of it. “Some people say that because of the difficult environment our trees face now, especially new ones going in the ground, we might never again see what we have today.”

- Page 3 of 4

[Petrified Forest](#) - Page 4 [From the April 2008 issue](#)

In the forests of Northern Ontario, even in the countryside surrounding the city, we're used to being awed by the humbling beauty, the strength and fickleness of nature. In the city, it sneaks up on you. Most of us don't even think about Toronto's trees unless they're dead or dying or crushing our car. And yet, they're central to the conversation about what it is to be city dwellers, their very existence helping to shape and define our idea of ourselves and our neighbourhoods.

It's an insight that won't soon be lost on the residents of Lansdowne Avenue, where Ken Wood's two days spent chained to a tree resulted in saving seven of what the

neighbourhood came to call the Linden 9. Those remaining had big orange Xs spray-painted on their trunks, a reminder, as if any was needed, of their vulnerability.

It's also something Toronto's chief forester, Richard Ubbens, is reminded of every day. We're at the Garrison Nursery, Toronto's halfway house for trees, tucked behind a high fence near Fort York, between the railway tracks and the eroding concrete of the Gardiner Expressway. Row upon row of silver maples and lindens, shagbark hickory and a few black walnuts, an entire squad of skinny red oaks stand at attention like a ragtag army waiting for the command to advance.

Ubbens is dressed in a dark suit and sky blue dress shirt, a pinky ring on his right hand, a gold wedding ring on his left. He's young looking and clean shaven, tall, with the whippet-thin physique of a long-distance runner—not exactly the Paul Bunyan type you might expect from his title.

“Trees, especially when they're not in a traditional forest, create a real sense of place,” he explains as he leads me around, pointing out the trees shipped from various growers, placed upright in loose topsoil and mulch, waiting to be planted around the city. “A subdivision has all the amenities but lacks a sense of place. Trees can provide that. It's like a backyard umbrella that people gather under. Trees convert that subdivision into a neighbourhood.”

As we're talking, I'm distracted by the sight of an old bathtub parked along the east side of a small, nondescript office near the entrance. The tub is yellowed and looks like it was yanked off a wall during a renovation project. Ubbens spots John Early, a forestry technician who supervises the 9,000-odd trees that go in and out each growing season, and we ask him about it. Early is tanned, a bit leathery looking, like a man who's spent his life in the bush. The tub, he confesses, is something he dragged here for wetting tree roots, but it was commandeered by two insistent mallards who visit daily, flying in and out of his office like they own the place. He calls the birds Lunch and Dinner.

“There was a fox, too, for a while,” he grins. “But I haven't seen him the past two years. I don't think he's around because now I see a lot of rabbits. And there's a mockingbird. It imitates the sound of my cellphone, and I never know if it's the bird or my ring.”

The men go inside the office, and I stroll around on my own for a bit. I can see the CN Tower peeking up past the eight-foot-high fence and the battlements of Fort York, hear the rumble of the expressway to the south. The air feels cool, moist, fragrant with the dense, rich smell of growing things. It's why I wanted Ubbens to bring me here. Years ago, when King West was an industrial brown field and an encampment of homeless people had set up shop in the park by the old soldiers' graveyard, I was out for a run and discovered this place. It was a shock and delight to emerge from that urban wasteland and come upon this secret forest (albeit behind a chain-link fence). It made the chaos of the city seem suddenly beautiful and strange, even full of hope.

Of course, ensuring the health—and growth—of Toronto’s tree canopy is going to take more than hope. Ubbens says he sees lots of potential for planting in places like ravines, industrial right-of-ways and on new suburban streets. And he figures that if all 2.5 million Torontonians committed to planting a couple of trees each, we could almost reach the mayor’s climate change goal. But it’s going to take decades. “What we have now has been built up over 20 to 100 years,” he says. “It was a forest and we put a city in it. Now we’re trying to put the forest back in.”

Something else he told me keeps ringing in my mind: trees are the canary in the coal mine, significant in and of themselves, but also as an indicator of the health of the environment in general. “Trees aren’t going to clean up the city on their own,” he said. “Toronto could have 100 per cent canopy, but if every one of us is driving an SUV, the pollution is still going to be bad.”

Standing in this weird, temporary forest, it’s easy to forget about all that—the environmental obstacles, the political promises, even the fume-belching SUVs—because in this place, where rabbits thrive and ducks drink from bathtubs, the daunting project of finding a way for nature and artifice to coexist seems something close to possible.

I’m near enough to hear John Early when he shouts, “There it is!” pointing at the sky. I catch a flicker of feathers as the mockingbird rises into the air. It sings out its teasing cellphone ring and disappears into the trees.

- Page 4 of 4