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Arboriculture

Toronto's urban forests face new challenges

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Gnarled, knobby and wrinkled, heritage trees stand sentry over the city's history. Some are older than the country itself. Many have lived through events that only occupy our distant collective memory.

There is a tree in the northeast segment of Queen's Park with a huge branch that juts out as if it's making a fist and about to flex its bicep. It is knotted and notched with holes. Fungus is growing in the crevices between its trunk and its appendages. A large hollow in its base is home to local wildlife. Yet the tree stands erect in its old age.

This "granddaddy tree" has as much if not more value than some of the younger, more aesthetically pleasing trees in the park, says Philip van Wassenauer, an expert with Urban Forest Innovations. They are as vital a part of the city's heritage as the Queen's Park Building or Royal Ontario Museum.

Yet some arborists, or tree experts, know very little about how to maintain these aging sentinels, says Mr. van Wassenauer, who can often be found examining the rough bark of trees with his hands, an old backpack resting in the dirt nearby.

Just because a tree is ugly, doesn't mean it isn't healthy and some arborists are too quick to cut down an older tree because it has blemishes that speak to its age. The older trees add to the diversity and ecology of the city's urban landscape, Mr. van Wassenauer says. Researchers in Britain have discovered rare organisms that are only able to survive in these older trees.

But Toronto's urban forests, the smattering of ravines and groves of trees that add green to the city's landscape of grey concrete, face a number of challenges, including demand for root space, disease, and climate change, which became most evident in this summer's extreme heat.

Janet McKay, the executive director of LEAF (Local Enhancement and Appreciation of Forests), issued a news release pleading for Torontonians to help urban trees weather the heat by watering them.

"Often by the time the effects of drought become noticeable, it's too late," writes Ms. McKay.

It is best to water in the early morning or evening and to use a low-flow hose to ensure water soaks into the soil rather than running off onto the pavement.

It's an effort that Ms. McKay says is well worth it because on particularly hot days, trees provide important relief – not just by providing shade – but improving air quality by trapping pollutants and aiding in storm-water absorption.

Evapotranspiration, the evaporation of water absorbed through tree roots and released through the leaves, creates a natural cooling effect, says Ms. McKay. “Trees can have an effect in terms of helping us live with the effects of climate change.”

Younger trees are more at risk in extreme weather conditions.

“A lot of those recently planted trees either this year or the last couple years, they're just frying right now,” says Mr. van Wassenauer.

They have a limited root system and without supplemental water supply from rain or watering, they just can't make it, he says. Larger, older trees have vast root systems drawing moisture from a larger area.

In extreme heat conditions, trees begin to shut down in order to survive. Their canopies wilt, branches may die off and leaves shrivel.

“I have seen many young trees crisped in the last few weeks,” says Mr. van Wassenauer.

These conditions can have long-term impacts. “Those newly planted trees are supposed to be our future urban forest,” he says. If they die before reaching maturity, Toronto's streets and parks will be significantly less green over time, but it's hard to measure the number of trees that will die, he says.

As well, the city of Toronto recently announced it would have to remove most of the ash trees because of an unstoppable infestation of the emerald ash borer. The city stands to lose an estimated 8 per cent of its canopy because of the insect.

And as the city grows, pavement encroaches on the soil where the root systems of trees collect and store nutrients that help them reach those epic age numbers. The city's recently introduced new sidewalk system, which allows for the roots of trees to grow underneath, may help.

The only reason the older trees like the three outside St. James Cathedral have survived is because they were on land owned by the church long before there was a Toronto or a Canada, says Bruce Bell, a Toronto historian.

“Everything else has been torn down to build,” he explains.

The grand old oak that sits outside the old entrance to the Royal Ontario Museum was protected during the building's recent renovation and now has enough root space in the large expanse of grass at its base to spread out and thrive. The oak near the steps of St. James Cathedral in the eastern part of the downtown core survived the great fire of 1849.

“I bet when you chop that tree down you might find a ring that's all black,” says Mr. Bell.

According to an old English saying, a tree grows for 300 years, thrives for another 300 and then expires gracefully for another 300. In Toronto we have trees around 200 years of age that are in the process of gracefully expiring, and will do so for another 100 if treated well, says Mr. van Wassenauer.

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