

Maples in Peril

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Remember that kid at school who was good at everything? Smart, athletic, popular, usually in a higher income bracket – seems there was one in every class who must have been near the head of the line when luck was handed out. It was hard not to find them annoying some days.

I imagine that's how the rest of the forest community feels about sugar maple, *Acer saccharum*. Also known as hard maple, this native icon of Canada has worn out more camera shutters than any other tree. Whether it's the stunning fall foliage, the welcome summer shade they provide, or the stately sense of grandeur a line of maples bring to back roads, the sugar maple stands apart.

In terms of firewood, it's is the gold standard, and it is prized for making gorgeous furniture and flooring. Then there's its sweetness. Never mind that maple production is important to our regional economy, pass the syrup already!

No one knows how far back the tradition of sugaring goes. But the Haudenosaunee (Iroquois), who taught many European settlers how to make syrup and sugar from maples, still hold the tree in high esteem, and observe the annual Maple Thanksgiving to express gratitude for yet one more gift from the Creator.

In rural back yards across the region every spring, barbeques and homemade wood stoves are fired up to boil down maple sap. Who cares if it takes an entire tank of propane to make a pint of syrup, the point is that you made it.

Possibly you'd feel a bit jealous of sugar maple if you were an ironwood or poplar. I think the rest of the forest should give maple some slack, though, given its health problems. Sadly, our maples are not doing as well as they seem.

In October 2015, the alarming results of a study looking at four decades of maple growth rings were released by the Environmental Science and Forestry College of the New York State University at Syracuse. One of the study's co-authors, Dr. Neil Pederson, an ecologist at Harvard Forest in Massachusetts and an expert on tree-ring studies and climate change, is blunt:

“Outside of studies of red spruce in the 1970s, I have never seen anything quite like this. Most tree-ring studies of canopy trees in the region do not show a decline like what we see in these sugar maple. Combined with evidence of reduced natural regeneration of sugar maple in the region, it is a concern.”

Considering the more immediate effects of other stressors, this does not bode well for maples. Over the past 30 years we've had more frequent droughts, including the severe, and in terms of soil moisture, unprecedented, droughts of 2012 and 2016. Fluctuating populations of the European fruit lecanium scale (*Parthenolecanium corni*) and the native maple leafcutter (*Paraclemensia acerifoliella*) are locally problematic.

As if that wasn't bad enough, maples now face new threats from invasive species never before seen in North America such as the spotted lanternfly. Asian jumping worms (*Amyntas* and *Metaphire* spp.), which sound like a joke, could singlehandedly (if they had such appendages) put a major damper on the health of hardwood forests should they get established here.

One indication of the exceptional stress our hard maples are under is the fact that in the fall of 2018, they did not produce any red colour. The yellow and orange ranges are present in leaves, unmasked as chlorophyll breaks down in autumn. Red (anthocyanin), however, is synthesized at a sizable cost to a tree's energy budget. You might say it's optional for the small number of species able to produce it. Every forester and arborist I queried said the same thing: it was the first time in living memory this happened. The fall of 2019 was a little better, but not much.

That popular and gifted "kid," the hard maple, has fallen on hard times. In light of this, most research-based guidelines now recommend no more than a single tap per tree, regardless of size. Moderate nitrogen applications appear to have some benefit, but contact a Registered Professional Forester for more details. To avoid undue root damage, harvest contracts should spell out that heavy equipment must remain on skid roads, and that operations cease in very wet conditions.

Paul Hetzler has been an ISA-Certified Arborist since 1996, and is a member of ISA-Ontario, the Canadian Institute of Forestry, and the Society of American Foresters. His book "Shady Characters: Plant Vampires, Caterpillar Soup, Leprechaun Trees and Other Hilarities of the Natural World," is available on [amazon.ca](https://www.amazon.ca)