



Green Giants

Old growth forests are unique ecosystems that are not renewable. So why does the provincial government continue to allow them to be logged with impunity?

By Cecily Ross

At the north end of Catchacoma Lake in Peterborough County there is a tree, an eastern hemlock that, at 375 years of age, is one of the oldest of its kind in Ontario. It was discovered in 2019 by forest ecologist Peter Quinby. As part of his work with the Peterborough County Old-Growth Forest Project, Quinby had been studying maps produced by the Bancroft Minden Forest Company, the firm licensed to harvest much of the woods in the area, when he noticed what appeared to be a large cluster of older forest near the lake. “I suspected this forest could be special,” he recalls.

He asked his two sons, who live in Peterborough, to hike into the woods and evaluate the size of as many trees there as they could, and also look for signs of human disturbance. After a four-hour bushwhack exploring a small section of the forest, the sons returned with tree diameter measurements and

Life support: Dead trees provide habitat for plants such as Canada mayflower.



CANADA MAYFLOWER



DUTCHMAN'S BREECHES



photographs that reinforced Quinby's suspicion that this was indeed an old-growth eastern hemlock forest. Old hemlocks are often overlooked, he says, because they may not be as large as other species of old growth. Subsequent visits, as well as aerial survey analysis and core samples taken to count rings,

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confirmed his hunch and revealed a total of 662 hectares of old-growth hemlock forest. With trees ranging in age from 140 to nearly 400 years, it is the largest stand of old-growth eastern hemlock in Canada—about the size of Toronto's downtown core. Since then, Quinby has been leading the fight to save that old tree and others in the forest.

Ontario has some of the planet's most important old-growth forests. The Temagami and Wolf Lake areas contain some of the largest known stands of old-growth red and white pine that remain globally. Ancient cedars, some of which are more than 1,000 years old, grow on the Niagara Escarpment. Nevertheless, the clearing of Ontario's forests that began three centuries ago to make way for agriculture and mining and to feed a voracious logging industry continues apace. Today, a scant 1 percent of the ancient forest ecosystems that once covered the Great Lakes region from the St. Lawrence River valley to the Manitoba border remain. To make matters worse, the Ontario government's new Forest

Sector Strategy will actively encourage double the amount of logging in the province, from 15 million to 30 million cubic metres of wood per year by 2030. While some stands of old-growth forest are protected on Crown land, there is little in the way of monitoring and enforcement, as the Catchacoma stands marked for felling indicate.

Today, imagining what Ontario's pre-settlement forests were like is difficult. In *Roughing It in the Bush*, Susanna Moodie's chronicle of her pioneer family's life in the backwoods north of Peterborough in the 1830s, she describes soaring trees with a “solemn aspect, and the deep silence that brooded over their vast solitudes inspiring the mind with a strange awe.” Amber Ellis, executive director of Earthroots, a non-profit dedicated to the protection of Ontario's wilderness, envisions a landscape that 200 years ago featured groves of white pines rising 20 storeys high, with trunks up to two metres in diameter—trees that might be expected on the west coast of Canada but not here. Most such monumental giants are gone, but a few remnants endure, as yet undisturbed by industrial development, though always under imminent threat of destruction. They are reminders of what once was. “To me,” says Ellis, “old-growth forests are magical—ancient spiritual places where nature is the dominant force shaping the landscape.”

Old-growth forests connect people with a forgotten past. They form increasingly rare habitats that harbour secret knowledge that, if action is not taken soon, is in danger of being lost forever. Franco Mariotti of the Sudbury Naturalists, a passionate advocate for ancient forest ecosystems who is engaged in an



EASTERN HEMLOCK



Unsustainable harvest: *Many current logging practices are not sustainable.*

ongoing fight to save the Wolf Lake red pines, notes that in the Sudbury area “it took only four generations to turn a massive forest into a moonscape. How did we let this happen?”

Most people, when they think of old-growth forests, think of old trees. But old growth is more than that; it is an entire ecosystem—not an end point but “a continuum,” according to Quinby. He acknowledges that definitions of old growth vary, but there are three main criteria: there must be trees 90 years old or older, dead wood in the form of logs and snags and a lack of human disturbance, at least since settlement by Europeans.

What does such a forest look like? In the Temagami region, many of the tall pines, red

Ancient ecosystem: *Many species are dependent on intact old-growth forests.*

CERULEAN WARBLER



and white, are approximately 260 years old, and a few have reached the venerable age of 400, their crowns rising majestically above the canopy. Interspersed with these elders is a thriving younger generation of mature pines, as well as other species—red oak and a few hemlock and yellow birch. Beneath them in the clearings is an exuberant understory of shrubs and saplings. Standing dead trees—snags—provide habitat for birds and small mammals. And overhead are openings in the canopy left by old trees that have died or been felled by wind or fire, the gaps they leave letting in precious sunlight that allows younger trees to thrive.

The forest floor is an undulating sea of leaves, dead wood, decomposing logs and branches rich in nutrients, an organic sponge retaining moisture and providing shelter to small mammals, amphibians and insects. The ground teems with plant life: mosses, fungi, lichens, bacteria, flowers, ferns and tree seedlings. Here and there old trees lie where they have fallen, decaying slowly, returning to the soil from which they came, the mounds created by their

exposed roots providing favourable conditions for other tree species to germinate. So the cycle of living and dying continues in ancient forest ecosystems touched only lightly by human activity for hundreds, even thousands of years.

A host of species of birds, amphibians and mammals depend on intact old-growth ecosystems to survive. The forests provide habitat for creatures such as flying squirrels and pine martens, as well as rare forms of mosses and lichens. Dead trees, which are often limited in younger “managed forests,” provide essential habitat for important plant species such as Canada mayflower and Dutchman’s breeches. The destruction or degradation of old-growth forest threatens, sometimes to extirpation, the plants and animals that live in them, as with Catchacoma Forest’s at-risk five-lined skink and cerulean warbler.

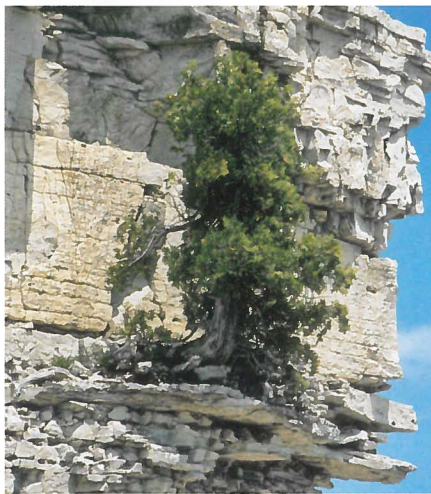
Not only are these forests among the most diverse ecosystems on earth, but they also sequester more carbon than any other. Huge reserves of carbon accumulated over centuries are stored in very old trees and in the undisturbed soil and rotting logs beneath them. And these trees continue to pull carbon out of the atmosphere. In fact, an ancient tree 50 to 60 centimetres in diameter absorbs as much carbon each year as the amount *contained* in one mid-sized tree. And, contrary to some forestry industry claims, old-growth forests are not renewable resources. “They cannot be logged and recreated using forestry techniques,” says Quinby. Once the continuum is disturbed by human activity, these complex ecosystems are irreversibly altered or destroyed and the sequestered carbon

is released. "The more of them we save, the more carbon we keep out of the atmosphere," says Quinby.

Unfortunately, data on Ontario's old-growth forests are scarce, and no systematic approach exists for designating the remaining forests. In 1994, Ontario's Crown Forest Sustainability Act established a policy for timber management on Crown lands that puts the onus on the forestry industry to manage the province's forests, including identifying old growth and protecting it. Since then, little effort has gone into surveying the remaining old-growth tracts in Ontario, with the result that no one really knows how much is left or whether it has been or is being harvested. "The province is responsible for forest management of old growth in Ontario but they've never enforced it [the Crown Forest Sustainability Act]," says Quinby. "The policy is pure lip service. They've never put it into effect."

In theory, old-growth trees on Crown land and in most provincial parks (except Algonquin, where selective logging is allowed) are protected. But the stands of red pine at Wolf Lake and the ancient white pines of Temagami, although

designated as forest preserves, are nevertheless under constant encroachment by logging and mining companies. Quinby estimates that in Algonquin Provincial Park, 65 per cent of the 6,000 to 7,000 hectares of old-growth pine and hardwood



EASTERN WHITE CEDAR

left is available to logging. Ontario Nature's executive director Caroline Schultz has no illusions. "The current government has no appetite for further designation of protected areas," she says, adding, "This

Precarious position: *Niagara Escarpment's ancient cedars are threatened by development.*

province is looking at undermining protections we already have. Old growth isn't even part of the conversation. Bad things are coming down the pipe."

That leaves the fate of the eastern hemlock of Catchacoma in the balance. Surveys undertaken by Ancient Forest Exploration and Research, a non-profit Quinby created, and its partners, which include Youth Leadership in Sustainability, the Wilderness Committee, and the local municipality and First Nations communities, found not only the ancient trees in the forest but also 10 species at risk, among them the cerulean warbler, the Algonquin wolf and the eastern hog-nosed snake. As for the 375-year-old hemlock, the fight may already be lost: when it was discovered, emblazoned on its otherwise unremarkable trunk was a vivid slash of yellow paint marking it for cutting. Logging of the Catchacoma Forest began in December 2019. 🐦

Cecily Ross is the author of *The Lost Diaries* of Susanna Moodie (HarperCollins Canada).

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