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Editor JIM HENDRY life@peterboroughexaminer.com 745-4641 ext. 242

LIVING

In the forest, life after death

Dead and dying trees provide important service to a complex community

As a child, there was nothing I liked better than to turn over old logs on the forest floor or peer into the cavities or under the loose bark of dead trees. Some fascinating critter would almost always scurry away for cover. With a bit of luck, I might find a snake or salamander which I would catch to show my friends and parents. More than anything, however, there was always the thrill of never knowing just what I might find.



Drew Monkman

OUR CHANGING SEASONS

A forest is a community. It is much more than an assortment of living trees. It is also the understory, wildflowers, ferns, mosses, bacteria, and myriad animal life, both large and small. Sunshine, rain, wind, rock, soil, and leaf litter are part of a forest, too. In this community, the lives of its inhabitants are woven together in an intricate web of complex, often poorly-understood relationships. What we do know, however, is that the removal of any one element of the community can have a serious impact on the community as a whole.

An element of forests that some people may consider dispensable is dead or dying trees. These are sometimes referred to as den trees when they are alive and have a cavity in the trunk or large branch. The term "snag" is used when the tree is dead. Eventually, when a snag or part of a snag falls to the ground, it will become a log. As we will see, these trees and logs are a key component of a healthy forest community. We therefore need to challenge the notion that dead trees are untidy and aesthetically objectionable or that leaving them standing is somehow wasteful because they could be used for firewood.

CAUSE OF DEATH: VARIED

Trees die as a result of everything from disease and injury to drowning and malnutrition. Occasionally, they may simply succumb to old age. Walking through the woods we see might see a dead white pine, with its bark ripped from top to bottom as a result of a lightning bolt. In a grove of hardwoods, we may come across a beech or butternut dying a lingering death from disease. In denser areas of the forest, there may be trees that have simply lost the battle for space and sunlight. Holes in trees usually develop when a branch breaks off and the exposed wood is invaded by fungi, bacteria, and invertebrates such as carpenter ants and boring beetles. Eventually, cavities may result. Later, when the tree dies, a large portion of the trunk itself may become hollow.

Rather than removing these trees, we need to leave them standing in order to decompose naturally. Dead and dying trees are used by wildlife in almost every stage of their decay. A large variety of animals make nests in hollow cavities and crevices in standing deadwood. By attracting insects, dead trees also serve as a convenient, one-stop smorgasbord for wildlife looking for a snack. The higher branches often serve



and daddy-long-legs run for cover. There's also a good chance you'll also see a silk-covered ball of spider eggs and the artistic patterns engraved in the wood by bark beetles. You may even find a spring peeper or wood frog hiding out or even hibernating under the bark.

An equally fascinating world awaits you on the underside of the log. When you roll it over, there are likely to be sow bugs, slugs, snails, earthworms, spiders, crickets, firefly larvae and various adult beetles. There may also be a salamander such as the red-backed, yellow-spotted, blue-spotted, or red-spotted newt. Snakes such as the red-bellied, ringneck, and milk snake are all possible finds, well. Don't be surprised if you find a deer mouse's nest, too, with its store of seeds. After having a look, be sure to carefully roll the log back in place.

Rotting logs also provide drumming perches for ruffed grouse. Drumming, a part of the grouse's mating ritual, is performed by the male. In the spring, he

stands on an elevated site such as a stump or log and beats his wings to create an accelerating series of muffled thumps. The same site may be used year after year. If you find a drumming log, you can return year after year to witness this spectacle of spring.

Finally, rotting logs and stumps serve as excellent nursery sites for trees such as yellow birch. Birch seedlings have little success taking root in the thick leaf litter of the forest floor but are able to root in

rotting wood. Within a few years, the seedling's roots grow down through the rotting wood to ground level. But, when the nurse log or stump decomposes and disappears, the birch is left standing on "golden stilts" - the original roots of the tree. This phenomenon is easy to see anywhere in the Kawarthas where yellow birch grows.

MEET A SQUIRREL

Right now is a good time of year to get a sense of just how common tree cavities, snags, and large, rotting logs are near your home or cottage. Watch especially for trees with large cavities and nesting holes. If you knock sharply on the trunk of a dead tree with a stick, the occupant of the hole - a flying squirrel for example - may even peer out to see what all the commotion is. You may also find snags where woodpeckers have been busy excavating. For example, pileated woodpeckers, the crow-size birds with a red crest, typically make long, oval holes and leave piles of thumb-sized wood chips on the ground. You may still be able to find salamanders underneath, as well, as long as the temperatures remain fairly mild.

Exploring den trees, snags, and rotting logs can open your eyes to whole new world of fungi, plants, and animals. Take along a few field guides, a hand lens, and a camera, and enjoy becoming a kid again. Next week, I'll look at how we can best conserve these features of a healthy forest, woodlot, or even a naturalized backyard.

Drew Monkman is a Peterborough teacher and author of *Nature's Year in the Kawarthas*. He can be reached at dmonkman1@cogeco.ca. Visit his website and see past columns at www.drew-monkman.com.



DREW MONKMAN photos

Dead and dying trees like these (lower left and centre) provide homes and hothouses for mushrooms (top) and salamanders (above). The pileated woodpecker (right) both benefits from the death cycle of trees and pushes it along.



as look-outs from which raptors and even songbirds such as

flycatchers can spot potential prey. Nooks and crannies provide a great place for animals to cache food. And, once the tree has fallen to the ground, moss, lichens, and fungi all aid in the return of vital nutrients to the soil. Seedlings, too, often grow on these "nurse logs" while a plethora of organisms make a living both inside and underneath.

CHICKADEE TO EAGLE

Some of the most valuable and interesting animals of our Kawartha woodlands are absent when there are no trees with dead limbs, holes or hollow trunks. Many birds make nesting cavities in these trees or use existing, older excavations. Some of these species

include nuthatches, chickadees, brown creepers, woodpeckers, tree swallows, purple martins, chimney swifts, great crested flycatchers, winter wrens, wood ducks, hooded mergansers, kestrels, screech owls, barred owls and saw-whet owls. Ospreys and bald eagles often build their nests on broken-topped or dead trees.

Many mammals, too, depend on snags. Deer mice, red squirrels, gray squirrels, flying squirrels, raccoons, and even foxes use cavities in these trees for denning. Little brown bats - an increasingly endangered species - find refuge under the loose bark. Maybe even more importantly, snags provide habitat for insects such as beetles and ants which, in turn, are an essential food source for birds and mammals. They are also where butterflies such as the mourning cloak and eastern comma overwinter and where wild honey bees make their hives.

When a gust of wind finally brings a snag crashing to the ground, another act in the drama begins. Some fallen trees rot more rapidly than others, depending upon the kind of tree and whether or not it lies in contact with damp soil. Bacteria and the root-like threads of fungi - the fruit of which we call mushrooms - continue to invade the dead wood, leaving it soft and easy to break apart. The mushrooms growing on the outside of the rotting log may include everything from puffballs and parasols to boletes and morels - to name but a few. When you pull off a big piece of loose bark, you get a sense of the wealth of invertebrate life within as ants, centipedes, millipedes, beetles,