



Wombat Forestcare Newsletter

Spring is on the way and the weather is warming. The Welcome Swallows have arrived from northern Australia and are building their nests. Soon Rufous Fantails, Satin Flycatchers and Sacred Kingfishers will visit to breed and raise their young. Explore some of the beautiful gullies in the Wombat and you may be fortunate to see the elusive Rose Robin nesting in Musk Daisy Bushes.

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Dead But Not Redundant

Words and images by Alison Pouliot

I am sitting with an elderly log in the upper reaches of the Werribee River. It's an old friend. We've been hanging out together for over a decade and admittedly we're both showing our age. A light drizzle softens the forest and all its smells seem to circumfuse in the log. I breathe it in, admire its elegant repose, sculpted by weather and the industry of cryptic inhabitants.

Old wood refers to dead trees or their parts. Old wood also exists in living trees in the form of hollows, dead limbs and decay columns. It's odd to think that someone who is unproductive or redundant in the workplace is referred to as *dead wood*. The idiom is as inappropriate as dead wood (or rather, *old wood*, as

wood is technically already dead) is highly productive. To be dead, in the case of wood in the Wombat, is certainly not to be redundant. Old wood is highly dynamic and the storehouse of the Wombat's excess energy (silly *Homo sapiens*, I hear the log sigh...). Whether a dead tree remains standing as a stag or falls to the forest floor, it will be slowly dismantled through a series of mechanical, biological, chemical and often cultural processes, releasing its locked-up nutrients, perpetuating forest life.

Natural processes and 'forest management' keep the composition of the Wombat's vegetation in endless flux. However, one worrying change in recent decades is the decline of old wood. Old wood underpins forest health by stabilising soils, sheltering seedlings, cycling nutrients, releasing nitrogen, storing carbon and providing habitat for a multitude of organisms. However, these vital processes are often overlooked



The clandestine actions of fungi, including lichens, underpin forest health.

continued next page ...

by some fire managers who regard it only as fuel. Fortunately, not everyone thinks like that.

It is often said that a dead tree supports more life than a living one. Hollows in dead trees shelter numerous forest inhabitants including gliders, possums, phascogales, bats, lizards, owls, parrots, treecreepers, kookaburras and kingfishers. Hollow formation is a slow process and large hollows in trees such as messmates and stringybarks can take hundreds of years to form. Countless spineless inhabitants also call old wood home. Many of these rely on fungi and bryophytes that also inhabit and rely on old wood.

Over the years I've watched the log transition through successional stages of decomposition. Ever-changing entourages of bacteria, fungi and invertebrates form intimate alliances, performing diverse ecological roles in dismantling the log or each other. Wood-boring and bark beetles are among the early colonisers. Their tunnels allow moisture and spore-laden air currents to enter the wood. Wefts of fungal mycelia penetrate the inner layers, releasing powerful enzymes that modify its structure and forge entry points for further invertebrates. Slugs in turn feast on fungal fruitbodies. Armies of ants embark on labyrinthine explorations. Lichens commence their gradual creep. Over time predators, parasites and scavengers such as spiders, pseudoscorpions and ichneumonid wasps each claim their territory.

During the mid-successional stages mites, millipedes, centipedes and hoverflies investigate their new terrains. Fungi such as inkcaps (*Coprinus* spp.) adorn the log with thousands of ephemeral fruitbodies. While fungi can degrade pretty much any organic material containing carbon, among the two most significant are cellulose and lignin. Together they form the

major structural and strengthening components of wood. Bacteria and invertebrates also contribute to decomposition processes, but only fungi can dismantle lignin. Some fungi are generalists deconstructing a variety of compounds while others are specialists. White-rot fungi metabolise lignin, brown-rot fungi break down cellulose and hemicellulose, while soft-rot fungi have a shot at rotting them all. These first decompositional stages may take decades, depending on the type of wood, the amount of rain and other environmental conditions. In the final decompositional stages soil organisms like earthworms replace saproxylic insects. Amphibians, reptiles, birds and small mammals might also set up camp. Fungi such as the species-rich genus *Mycena* move in toward the end of the decomposition process. This enterprising menagerie of largely unseen creatures are the forest's engineers, creating new niches and driving forest processes.

Old wood also provides habitat within the Wombat's watery environments. Old wood in rivers and creeks creates diverse flows, pools and sheltered areas. Leaf litter accumulates in slow-flowing areas supplying shelter and food for invertebrates and fish. Sediments retained in pools and backwaters provide safe places for frogs, fish and other aquatic life to rest and spawn. Diverse streambed topography creates microhabitats and ideal hiding places. Protruding limbs provide roosting sites and vantage points for fishing birds.

The Wombat's thousands of old wood-dependent species each has particular needs. Many occupy very specialist niches and are likely to be rare. Without their woody old homes they could disappear altogether. Every forest needs old wood of various sizes, age and quality. It is not just fuel. Re-conceptualising the log as an ark of extraordinary and exceptional lives could open up more plural and inclusive concepts of old wood, of the Wombat, of nature. All it requires is an imaginative shift in the frames of reference that shape our perceptions.

Henry Miller said, "I have always looked upon decay as being just as wonderful and rich expression of life as growth". Miller was referring to art, but the sentiment is equally apt for the astonishing artform of the elderly log. ■



Fungi and wood become one in the transformative recycling process.