



THE HEART OF NATIVE FORESTS

REESE HALTER LOOKS AT THE COMPLEX AND VITAL ROLE ANIMALS PLAY IN MAINTAINING DIVERSITY.

What makes earth's unique native forests so sacrosanct? The sheer breadth and width of the world's tallest flowering trees, the mountain ash, are one reason that's often discussed, but there's so much more to this diverse environment.

I've been exploring native forests for almost 50 years. As a postgraduate student at Melbourne University, I lived in the bush and cut my teeth investigating snow gum root growth on Mount Stirling, Victoria. These days, my zoogeochemistry colleagues are exploring the role of animals in the carbon and nitrogen cycles, looking at their link to ecosystem robustness. And for good reason: native forests are Mother Earth's most complex, long-lived and widespread carbon storehouses.

Native forests are holy ground because of the time-tested, self-organised networks of cooperative biological communities that thrive there.

If, as people say, trees are the "lungs of the planet", then animals are the "veins and arteries", and the wee ones, such as termites, Bogong moths and others, are the "capillaries". Together, the animals are the heart of native forests.

Wildlife bring undeciphered languages, liveliness and much mystery to nature's woody neighbourhoods. They are indispensable mineral, nutrient and energy circulators, vital for growth and system fitness.

Essentially, animals are the scaffolding for colossal carbon-cellar castles that tower over the countryside.

"These animal inter-relationships are critical to the maintenance of the ecological integrity of forest



and the ecosystem services like the production of clean water on which humanity depends," says ANU's

distinguished professor David Lindenmayer.

Let's take a closer look at Tasmania's mountain ash forests, which are one of the world's densest carbon vaults. They depend upon a spellbinding array of common, rare and endangered wildlife to reach their lofty heights of 100m.

For example, the world's largest barn owl, the endangered Tasmanian masked owl, lives within these tall native forests and preys upon omnivorous long-nosed potoroos. Among the potoroos varied diet of insects and their larvae, tubers, seeds, fruits and green vegetation, are fungi-fruiting bodies, mushrooms. Those fungi form an intimate partnership with mountain ash roots, giving water and nutrients to the trees while taking carbohydrates (food) in return.

The potoroos spread mushroom spores (seeds) in their poop throughout the ash forests, re-inoculating all tree roots. Owl pellets and scat disseminate those spores in forests farther away.

To me, the unsung heroes of the opulent temperate rainforests are earthworms. Tasmania has around 230 species. These wriggly ploughmen eat all things organic and elegantly cycle nitrogen and phosphorus. They boost native forest carbon depositories, eat ever-rising, carbon-emitting microbes and provide birds with a nutritious food source.

The heartbeat of native forests, its animals, ensure a vigorous forested frontline defence against worsening climate storms. Terminating all native forest logging, forthwith, would give planetary life a chance of survival. **03**