

Our life-giving FORESTS

ENVIRONMENTAL ACTIVIST AND NATURE DEFENDER DR REESE HALTER CELEBRATES THE CARBON-STORING, RAIN-CREATING AND SIMPLE MAJESTY OF TREES, WHILE CALLING FOR IMMEDIATE ACTION TO PROTECT THEM AND HUMANITY'S FUTURE.

There are more than 60,000 species of trees on Earth, including massive forest communities of these dripping, breathing, architectural tours de force that enthrall us and ensure our survival. Collectively, forests have been enriching Earth since the mid Devonian Period, around 400 million years ago.

Quite simply, they are the most successful CO² warehouses to have ever evolved on land. For every tonne of wood created, the tree inhaled 1.5 tonnes of CO² and exhaled one tonne of oxygen. As ancient trees age they get better at stockpiling carbon. An estimated 70 per cent of all carbon stored in some trees accumulated in the last half of their lives, and 40 per cent for some in their last quarter.

Where there are rainforests it's wet. They create vast atmospheric rivers of moisture that circulate the globe. They are local, regional, continental and inter-continental climate-makers and gigantic air conditioners. Forest leaves release aromatic compounds called terpenes that react with the air to form tiny aerosols. The aerosols transform atmospheric water vapour into clouds – those particles can double the thickness of clouds 1000m above forests, reflecting an extra 5 per cent of sunlight back into space.

Old-growth forests

Around 6000 years ago, old-growth rainforests with unique genetics, structural diversity, a rich array of biodiversity, and the extraordinary ability to perpetuate tree life, beautified about half of Earth's land masses. Today, a slim fraction of those native rainforests remain, yet, that's where 1 per cent of the trees, the giants, hold an astonishing 50 per cent of all the earthly above-ground carbon.

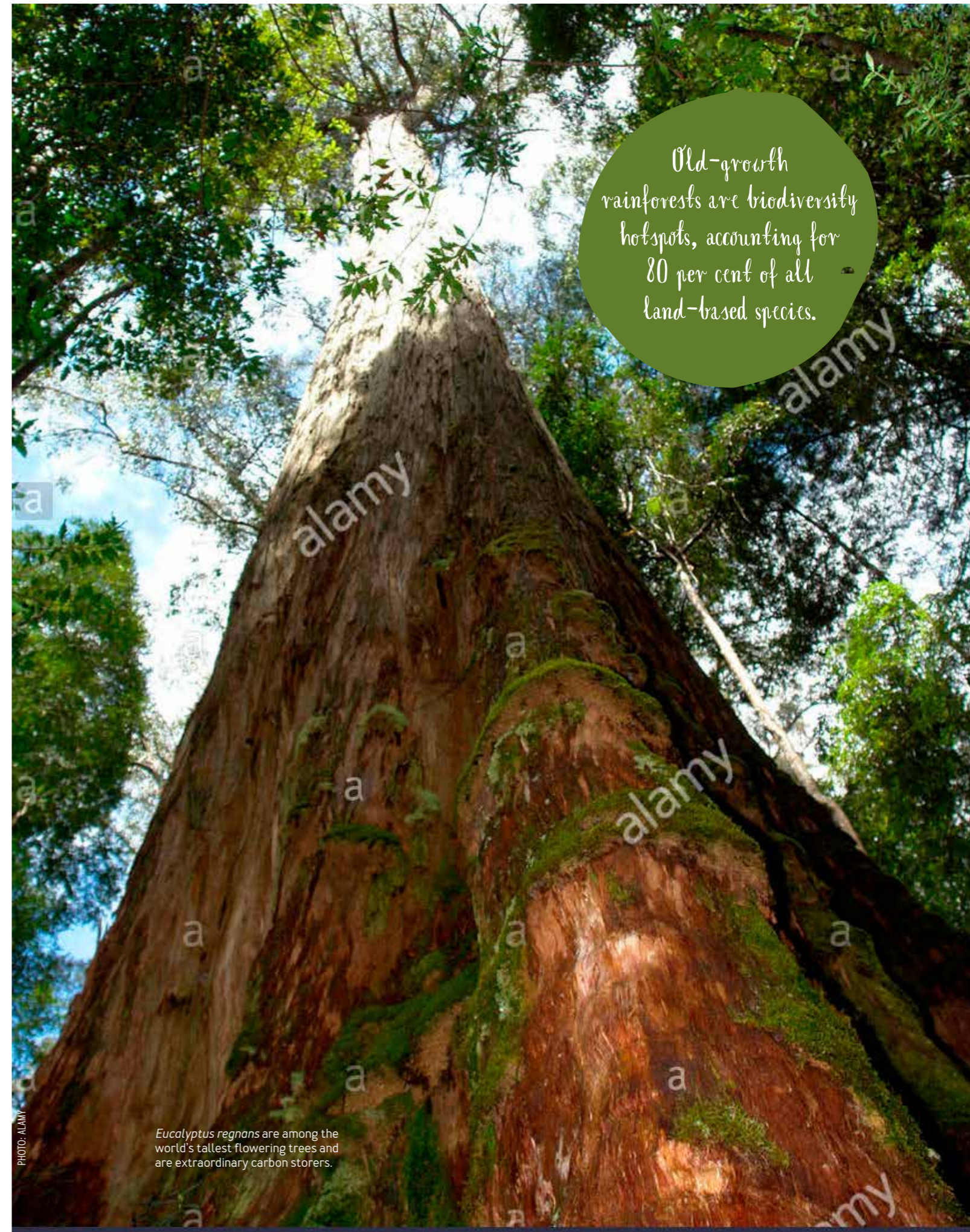
Old-growth rainforests are biodiversity hotspots, accounting for 80 per cent of all land-based species. Maintaining their presence is vital because as the human population continues to multiply and encroach upon wildlife habitat, the risk from animal viruses resulting in pandemics will also increase.

Another little-known fact is that 90 per cent of all cities depend upon forested watersheds for their water supply. Furthermore, forests are the lungs of the land: one of every three breaths of oxygen we draw come from them.

Too hot, too dry

Despite all these amazing roles that forests play, some humans are still bent on destroying them. In 2020, while there was less travel and some pressure

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Eucalyptus regnans are among the world's tallest flowering trees and are extraordinary carbon storers.

PHOTO: ALAMY

LOGGING OR WILDERNESS

World deforestation is spinning out of control. A recent World Wide Fund for Nature (WWF) study found that from 2004 to 2017 an area of old-growth forests more than six times the size of Tasmania were flattened. Australia was the only country in the developed world to appear on the WWF list of areas significantly increasing deforestation.

Land clearing in NSW, Qld, Victoria, South West WA and Tasmania continues unabated. Across Australia, 1318 varieties of plants are either critically endangered or threatened, 56 plants are facing extinction from hasty habitat destruction.

One of the problems is that 6 million hectares of Australia's native forests remain unprotected and hence threatened, including some of the world's tallest flowering trees – *Eucalyptus regnans* – home to the critically endangered Leadbeater's possums that need the hollows within to make an omnivorous treetop living.

More than 65 per cent of these lanky gums in Victoria's upper Thomson water catchment are gone. They won't recover for at least 80 years, and maybe not at all as the temperatures continue to climb. That catchment and its hallowed old-growth trees provide Melbourne with most of its freshwater, valued at \$310 million annually.

The Victorian government recently declared logging of old-growth forests would cease immediately and it would phase out native forest logging by 2030. Alas, conservationists believe 2030 is too late and will lead to a 'log grab' that could destroy what's left and compromise Melbourne's water supply.

Despite the calls for tourists to visit pristine green Tassie, 1 million hectares of the state's native old-growth remain under threat from logging and mining. Monogamous masked owls, the planet's largest freshwater crayfish, iconic Tasmanian devils and the fastest parrot in the animal kingdom, the swift parrot, are all endangered and in dire shape from forest bulldozing, chainsaws and napalming.

A number of recent studies have shown that logging native old-growth forests has impoverished the soils, increased fuel loads, changed the forest composition and left these denuded forests hotter and drier. What's even more distressing, is knowing that about 90 per cent of Tassie's precious logged native forests are chipped, exported to the Asia for making paper or to be burnt as biomass in hulking furnaces. It is estimated combusting wood pellets is exacerbating global heating by releasing 13 per cent more CO₂ per unit energy than coal. In response, the Bob Brown Foundation has filed a legal action in the High Court to protect biodiversity and end logging in native Tasmanian forests. The case will be determined later this year.

What's the alternative? Well, Australian plantations now grow enough timber to supply domestic and international markets. In 2017/18, Australia produced 50 per cent more wood than it consumed. And in one case at least, it's run at a loss: Sustainable Timber Tasmania (formerly Forestry Tasmania), had total operating cash losses of \$454 million over 20 years from 1997 to 2017.



Majestic *Eucalyptus regnans* forests are at risk due to logging and bushfires. Top: The endangered swift parrot – the fastest parrot in the animal kingdom.

"We must protect Australia's remaining old-growth rainforests as if our lives depend on it, because they do," warned Amelia Young, Wilderness Society spokesperson. Meanwhile, tourists are lining up to visit the Wilderness World Heritage and the takanya/Tarkine rainforest. In 2019, they spent \$2.49 billion in the Apple Isle.

PHOTOS: ALAMY



One million hectares of exquisite Papua New Guinean rainforests may be lost this year.

taken off the planet due to the COVID-19 pandemic, razing the world's old-growth forests surged.

Rumbling bulldozers and whining chainsaws annihilated an area of primary forests almost two-thirds the size of Tasmania. That's a 12 per cent increase over 2019. The biggest losses were incurred in Brazil, three times that of the second worst offender, the Democratic Republic of Congo.

This year, 2021, may be even worse. One million hectares of exquisite Papua New Guinean rainforests are being swapped for more monoculture palm oil and rubber plantations, soybeans for livestock feed and the burgeoning \$50 billion wood pellet biomass power industry.

By the way, the oceans drive Earth's climate and 2020 was a record for ocean heat. Elevated temperatures, prolonged heatwaves and droughts are laying waste to robust forests. Weakened water-starved trees are incapable of fending off insect epidemics as evidenced by 35 billion bark beetle-killed trees across western North America.

Meanwhile, in Australia, snow gum forests attract and hold snowfall, and slowly release springtime meltwater, contributing to the Murray-Darling Basin supply of freshwater. Heatwaves and repeated bushfires this century have decimated these high-country gums, while University of Canberra scientists predict

that more heat could shrink the habitat of 90 per cent of all eucalypts by 50 per cent. Too hot. Too dry.

Fighting back

Along with logging and land clearing, global heating is the biggest threat to forests, and as we well know, fossil fuels are a big contributor to that crisis. The extent of the world's annual direct and indirect fossil fuel subsidies – an estimated \$5.3 trillion – has been laid bare in recent years. Instead of propping up fossil fuel industries, there are increasing calls for no new investment in this energy source at all.

Just in May, the world's leading energy organisation, the International Energy Agency (IEA), said the development of new oil and gas fields must stop this year, as well as no new coal-fired power stations built, if we want to limit the worst effects of climate change.

Instead, we need investment funnelled into carbon-reducing strategies such as the new £30m project funded by UK Research and Innovation looking for the best ways to draw carbon dioxide from the atmosphere. The research will include re-wetting degraded peatlands, testing biochar and ways to maximise the role of trees.

In the meantime, protection of the forests and trees we have is vital and inexpensive. All the old-growth forests (boreal or taiga, temperate, tropical) require

CHOOSING SUSTAINABLE TIMBER

Australia grows, tends and harvests both high-quality saw timber and pulp from its forestry plantations. The list of both native hardwood and exotic softwood plantation species that are being harvested around the country is indeed impressive.

The Forest Stewardship Council (FSC) of Australia is the best and most credible forest certification to ensure that the wood in the marketplace is environmentally appropriate, socially beneficial and economically viable. Look for their FSC logo on all wood products. A new plantation wood-only logo is in the works.

immediate protection from logging and poachers. The International Criminal Police Organisation (INTERPOL) estimates that USD\$100 billion per annum of timber is illegally harvested, smuggled across the sea and sold on the black market. (This is why it is vital individuals and businesses buy and use only sustainably sourced timber and wood).

Another urgent measure would be for the United Nations (UN) to finally adopt the Universal Declaration of the Rights of Mother Earth of 2010, put forth by the World Peoples' Conference on Climate Change and Rights of the Mother Earth in Cochabamba, Bolivia.

The US-based Earth Law Center is fighting tooth and nail to get this much-needed universal declaration for nature adopted by the UN. There's both urgency and optimism. If corporations have rights, why shouldn't nature, globally?

People power

In their 2011 book *Why Civil Resistance Works*, Harvard University professor, Erica Chenoweth, and American political scientist, Maria Stephan, explain how non-violent mass civil disobedience is a potent weapon that forces societal change.

Chenoweth and Stephan found that 3.5 per cent of an active population could force societal change. That means we need about 273 million people from all corners of the world doggedly demanding both climate and extinction justice.

It may seem like a large number but when the Indigenous Peoples, vegans, environmentalists, conservationists, scientists, teachers, concerned citizens and youth band together, we have the numbers in spades!

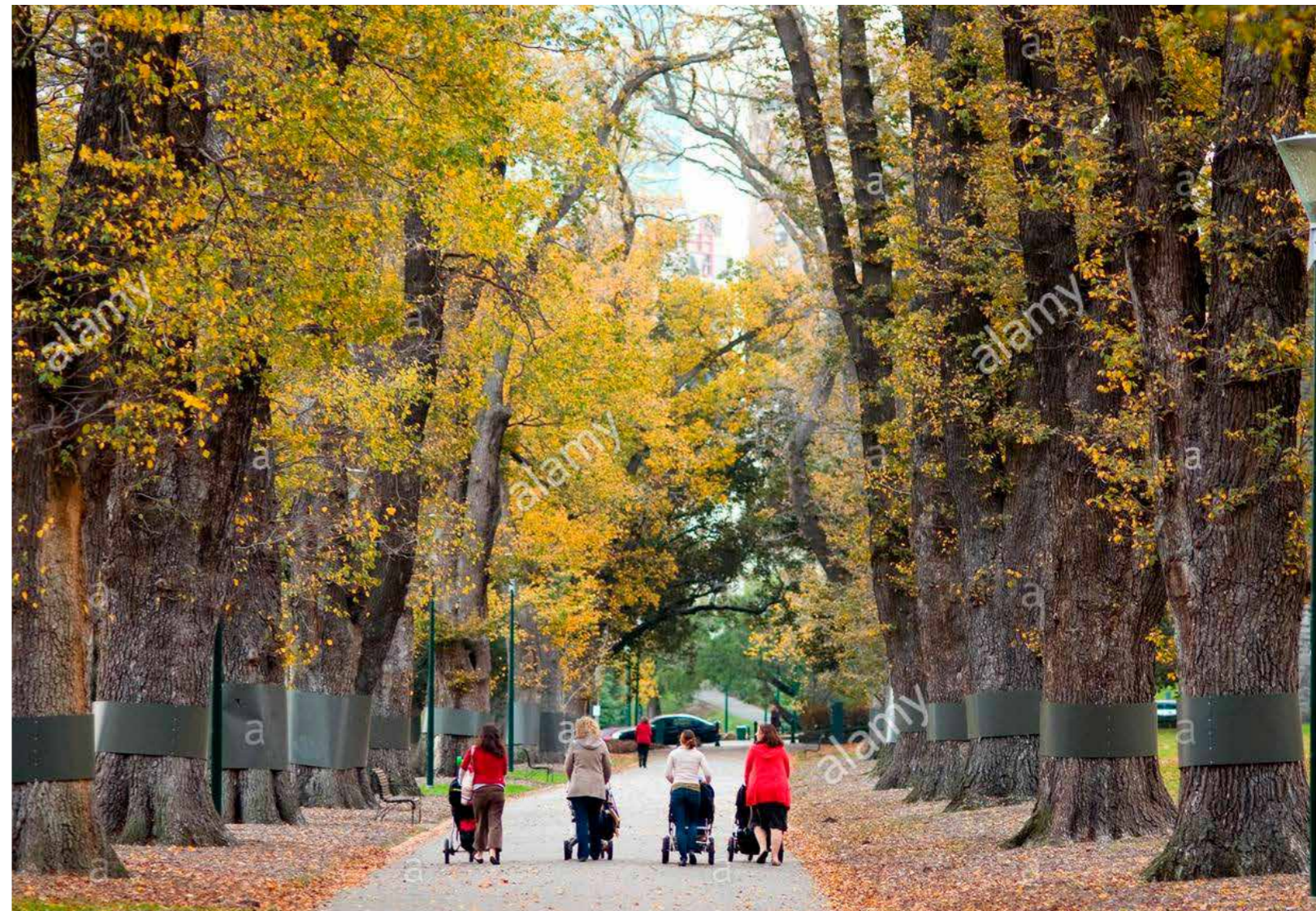
According to American environmentalist Bill McKibben: "Very few people on Earth ever get to say: 'I am doing, right now, the most important thing I could possibly be doing.' If you'll join this fight that's what you'll get to say."

Good projects

Speaking of people power, every project and initiative to protect or plant trees counts. Melbourne is fighting the climate emergency by expanding and maintaining its splendid urban trees.

Urban forests are vital to absorb air pollution and storm water runoff, but also to cast shade and lower air temperatures; cities can be up to 12°C warmer at night compared to the surrounding countryside.

Melbourne is planting many thousands of new trees, including a wide array of species, which will double the sea of green in the city from 20 to 40 per cent. By 2040, this urban green canopy intends to lower the Melbourne's summertime temperature by 4°C.



Above: Melbourne is planting new trees as well as protecting old ones – for current and future generations.

Seventeen thousand kilometres to the northwest of Melbourne, work is being done to rewild the now barren Scottish highlands.

"Ninety-eight per cent of the original native pinewoods are gone," said the founder of Trees for Life, Alan Watson Featherstone.

Since 1986, Featherstone's foundation has been rewilding Scotland's Caledonian temperate rainforest. Thousands of volunteers have helped protect many of the remnant areas from overgrazing by deer and sheep with fenced enclosures.

Trees for Life have planted a couple of million trees and they're planning to plant millions more. About 140 red squirrels have also been successfully reintroduced to the countryside. These furry native friends plant new trees by forgetting where they buried their winter stores of nuts and seeds! Trees such as Scots pine, birch, rowan, juniper and aspen are now drawing carbon out of the atmosphere as a result and will be the old growth forests of the future.

The kingdom of Bhutan is a shining example of promoting forests via reforestation. The country measures its success with a citizen's wellbeing index that values forests and the environment as one of the main pillars. Nearly 75 per cent of Bhutan is forest.

The fate of humankind is inextricably linked to protecting existing old-growth forests, but also in planting trillions of trees that may one day be our saviours. 🌳

ACTION STATIONS

To find out more about our native forests and what can be done to save them, visit these organisations:

- Bob Brown Foundation: bobbrown.org.au
- WA Forest Alliance: wafa.org.au
- Wilderness Society: wilderness.org.au
- Rainforest Action Network: ran.org
- Ancient Forest Alliance: ancientforestalliance.org
- Australian Conservation Foundation: acf.org.au

For a full list of references, head to: organicgardener.com.au/articles/our-life-giving-forests, or scan the QR code with a smartphone camera.



Above: Non-violent civil disobedience like this protest to halt logging in the Tasmanian Styx Valley, is one weapon that can be used to help force change.

PHOTOS: ALAMY