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# Treasure trees

**L**ong ago, before the dawn of agriculture, trees covered about half the Earth's land surface. Now, about half of these original forests have been completely cleared, and most of what remains standing has been burned, replanted or otherwise affected by people at some stage. And the destruction continues: every year, some 130,000 square kilometres of trees – an area the size of Nicaragua, Greece or the American state of Alabama – are cut down.

Felling forests is an act of self-harm. For they are absolutely essential for human well-being – even survival – regulating our climate and water supplies. Yet they have long been among the first victims of civilization: over 3,000 years ago, the people in Mesopotamia cut down their trees – and soon the land turned into desert.

Today's developed countries have largely lost their forests. Outside the Russian Federation, only a bare 1 per cent of Europe's tree cover survives. And 95 per cent of the forests of the continental United States of America have been cut down since Europeans first settled there.

Many developing countries have now become similarly denuded – from Bangladesh to Haiti, from Nigeria to the Philippines, from Thailand to Côte d'Ivoire. These have lost almost all their forest. And the felling is happening fastest in the tropics, where the majority of developing countries are.

Yet we need trees more than ever. More than 2 billion people depend on wooded watersheds for their drinking water. Trees efficiently regulate supplies, intercepting rainfall and enabling it to percolate into groundwater, and to feed rivers and streams.

Trees also bind soil to the ground. When they are felled, earth is left exposed and is washed off the hills by rain. Crop yields fall. And, instead of being stored and released gradually, the water rushes off the bare slopes, causing floods followed by scarcity.

The eroded topsoil settles in riverbeds, raising them and making the torrents even more likely to burst their banks. China's Yellow River has been so raised in this way that it actually flows 3 to 10 metres above the surrounding land as it approaches the sea. The silt also builds up behind dams, drastically shortening their useful lives.

Even more important, forests are a vital brake on global warming: they are thought to absorb a third of all humanity's emissions of carbon dioxide, the main cause of climate change. Cutting them down for timber releases the brake. Burning them stamps on the accelerator by emitting even more of the gas to the atmosphere.

# Supporting the sky

**T**he Maori recognize the importance of trees in one of their creation stories.

Rangi, the sky father, and Papa, the earth mother, embraced each other. They held each other so tightly that they blocked out the sun's light, leaving their children to live in darkness, squashed between the earth and the sky.

Eventually, the children had had enough of the darkness. They argued over how best to find the sun. Tuma, the fiercer child, wanted to kill his parents, but Tane, the guardian of the forests, objected.

'Let's separate them, and let the sky stand far above us and the earth lie beneath us. Let the sky be a stranger to us, but let the earth remain close to us as our nursing mother.'

In turn, each child tried to push Rangi and Papa apart, but their embrace was too strong.

Tane tried one last time. He lay on his back and put his shoulders against the earth. He wedged his feet against the sky. He pushed, and groaned and strained.

With one huge push, Tane broke the sinews that held his parents together. Quickly, he propped up his father, the sky, with tall trees from his forests so that the sky and earth could not come together again.

We can lessen these effects by planting trees – which is on the increase around the world. About 57,000 square kilometres are reforested in this way every year, bringing the overall loss down to 73,000 square kilometres, the size of Sierra Leone or Panama.

But replanting usually fails to replace like with like. What is cut down is normally rich, ancient, 'old-growth' forest, which worldwide is home to more than half the species on Earth. A single 1,000-hectare patch of tropical rainforest, for example, may well contain as many as 1,500 species of flowering plants, 740 types of trees, 400 kinds of birds, 100 of reptiles, 60 of amphibians and 150 of butterflies – insects as a whole are far too numerous to count.

This breathtaking diversity is regularly replaced by vast, regimented tracts of just one or two tree species, and little accompanying wildlife. The effect is incalculable – on the world's web of life, on the disappearance of species that could have provided important new foods and medicines, and on local people, who depend on the richness of the forests for more than a fifth of their meagre incomes.

It is far better to leave old-growth forest in place. One country – the tiny Himalayan kingdom of Bhutan – has shown the way. Measuring its success by 'Gross National Happiness' rather than 'Gross National Product', it decided, more than 30 years ago, that 60 per cent of its land should always remain covered by forest. In fact, it now has 74 per cent tree cover, making it the last green patch in the increasingly barren mountain chain – an example to inspire, and shame, the rest of the world.

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