

# KCW LONDON

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## Trees (in a nut-shell)

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Trees have been growing on our planet for 370 million years, and, not only are they the oldest living organisms, with many being 1,000 years old, and some considerably older, they are also the largest, with some exceeding 100 metres in height, and weighing 1,500 tonnes. An old saying would have us believe that 'an oak tree spends 300 years growing, 300 years resting and 300 years dying.' There are a number of contenders for the oldest tree, with a bristlecone pine 3,000 metres up in the White Mountains in Eastern California reputedly 4,700 years-old, although Scotland's Fortingall yew in a churchyard in Peryshire, could be 5,000 years-old, and a spruce in Fulfjallet, Sweden, is reputed to be 9,550 years-old.

In 2011 The Woodland Trust published a book called *Why Willows Weep*, which comprised a selection of short 'tales from the woods', with such authors as Tracy Chevalier, Joanne Harris, Philip Hensher, Kate Mosse, Maggie O'Farrell, Ali Smith and Terence Blacker, in all, nineteen authors writing about nineteen of the UK's native trees. A native British tree is defined as a genus that colonised the land when the glaciers melted after the last Ice Age, 10,000 years ago, and before the UK was disconnected from mainland Europe. By far the most common of British native trees is the Oak. In the 2,500 acres of Richmond Park, founded by King Edward I in the thirteenth century as a hunting ground, seven species make up 90% of the 130,000 trees, with Oak being the predominate at 45%, Beech amounting to 20%, with a further 20% across five species, including Hawthorn, Blackthorn, Birch, Hornbeam and Chestnut, and the remaining 10% comprising Willow, Alder, Cedar and Sugar Maple. There are 1,400 'veteran' trees, known as the Crown Jewels, including one venerable old gentleman known as the Royal Oak, which is at least 800 years-old.

An exhibition in the Southbank Centre entitled *Among the Trees*, examines how artists have used trees as inspiration for their work, and highlight our relationship with trees and forests. There is a projection of a 30 metre-high Spruce, but displayed horizontally, by Eija-Liisa Ahtila, and a vast forest constructed entirely from cardboard by Eva Jospin. There is a cast from a 2,000 year-old olive tree by Ugo Rondione, which reaches to the ceiling of the gallery. Alongside sculptures and installations, drawings, paintings and photographs, there are artworks that celebrate the soaring scale of trees. At a time when the destruction of the world's forests is accelerating at a record pace, *Among the Trees* vividly highlights the indispensable role that trees play in our lives and imaginations.

A German forester, and now author, Peter Wohlleben, wrote a book in 2015 called *The Hidden Life of Trees*, proposing that most individual trees of the same species are connected to each other through their root systems, and that, exchanging nutrients and helping neighbours in times of need, leads him to the conclusion that forest are superorganisms with interconnections much like ant colonies. A revolution has been taking place in the scientific understanding of trees, and Wohlleben is the first writer to convey its amazements

to a general audience. The latest scientific studies, conducted at well-respected universities in Germany and around the world, confirm what he has long suspected from close observation in the forest: trees are far more alert, social, sophisticated, and even intelligent, than we thought. Suzanne Simard is best known for her extensive research into mycorrhizal networks, and she identified hyperlinked 'hub trees,' as she calls them in scientific papers, or 'mother trees.' Peter Wohlleben has referred extensively to her research in his book, and notes that forest networks feed rain systems, each tree releasing tens of thousands of gallons of water into the air annually. There are many scientific dissenters about these latest findings both in the UK and in the US, notably statements like, 'the older the tree, the more quickly it grows.'

The eminent British scientist Richard Fortey expressed serious and well-argued criticisms about these new-found, hippie 'tree-hugging' philosophies. Now semi-retired, he was a paleontologist at the Natural History Museum in London, and visiting professor of paleobiology at Oxford. He recently published *The Wood for the Trees*, a book about four acres of woodland that he owns in the Chiltern Hills. It is an authoritative work, and rigorously trimmed of all sentiment and emotion. 'The mother tree protecting its little ones?' he says with gentle scorn. 'It's so anthropomorphized that it's really not helpful. The case is overstated and suffused with vitalism. Trees do not have will or intention. They solve problems, but it's all under hormonal control, and it all evolved through natural selection.' The past few years have seen the release of a rich and varied list of books concerned with woods, including Oliver Rackham's irreverent *Woodlands*, Richard Mabey's whimsically-titled *Beechcombings*, and Sara Maitland's *Gossip from the Forest*.

The UK has about 13% of woodland in its total land cover, whereas in the EU member states, the average is 38%. Government targets up until March 2019 were planting 5,000 hectares, but only 1,420 hectares were covered. In the 26 years up to 2016, a million square kilometres were wiped off the face of the earth. By 2015 humans had felled 40% of the trees grown on the planet. It has been suggested that we need to plant 1.7 billion hectares on treeless land across the world, amounting to one trillion native tree saplings, which experts say would offset two thirds of all carbon emissions from human activities. Professor Rackham contradicts these predictions, saying that 'exhorting people to plant trees to sequester carbon dioxide is like telling them to drink more water to hold down rising sea levels.' In 2004, Wangari Maathai, a Kenyan professor of Biological Sciences and founder of the Green Belt Movement, won The Nobel Peace Prize for 'sustainable development, democracy and peace,' after having initiated the planting of 30 million trees across Kenya. In Ethiopia in July 2019, 350 million trees were planted IN ONE DAY!

Richard Powers won the Pulitzer Prize for fiction in 2019 for his absorbing, arboreal novel *Overstory*, in which eight completely different characters' stories are played out over many decades, and initially, so diverse, there seems to be no rhyme or reason, except that they all involve trees. Sometimes, the sheer weight of description threatens to fell the interwoven themes, but the quality of the writing wins in the end, broken down, as it is, into four headings: Roots, Trunk, Crown and Seeds. *Roots* begins with the Hoel family, Norwegians who emigrated to America in the mid-19th century, before setting out for Iowa to start a farm. They brought with them chestnut seeds which they planted at the edge of a cornfield. One of the trees made it to maturity, far enough from any other chestnuts to survive the great blight that swept through the US in the early 1900s. It becomes a landmark in the surrounding area, and the old man photographed the tree on the same day in March every

year, a tradition he passed on to his son, and then grandson, and then great-grandson. Another one of the characters is a botanist, Patricia Westerford, who controversially proposes that trees are communal, and that they communicate with each other, an idea that costs her an academic job, before her research is taken seriously by other, younger academics and it makes her famous. Her work, on the 'wisdom' and utility of trees, underpins much of the novel, and her beliefs are not incompatible with Dr Simard. In this work of fiction, there are many underlying truths and theories, and an astonishing array of rich, dendroidal descriptions, which fill the air with poetical joy. 'In summer, water rises through the xylem and disperses out of the million tiny mouths on the undersides of leaves, a hundred gallons a day evaporating from the tree's airy crown into the humid Iowa air.'

One piece of research that was carried out in the 1970s in East Africa reads like fiction, as David Attenborough explained in his 1995 book *The Private Life of Plants*. Giraffes love acacia leaves, and they are able to eat from the very top of the trees, much to the annoyance of the acacia tree in question. 'The African acacias, well-protected though they may be by their thorns, use distasteful chemicals in their leaves as a second line of defence. Furthermore, and most remarkably, they warn one another that they are doing so. At the same time as they fill their leaves with poison, they release ethylene gas which drifts out of the pores of their leaves. Other acacias within fifty yards are able to detect this and as soon as they do so, they themselves begin to manufacture poison and distribute it to their leaves.' However, the giraffes got wise to this game, and they moved, usually upwind, further away to a part of the Savannah where they could find trees that were oblivious to what was going on.

It is curious that so little has been made of Year of the Tree, and even less of the International Day of the Forest, which is a UN-inspired initiative, focusing on Forests and Biodiversity, held annually on 21 March 'to raise awareness of the importance of forests to people and their vital role in poverty eradication, environmental sustainability and food security. Sustainable management of all types of forests are at the heart of unlocking challenges of conflict-affected, developing and developed countries, for the benefit of current and future generations.' In the European Tree of the Year contest, the Czech Republic's 350-year-old Guardian of the Flooded Village pine was this year's winner of the prestigious award, with Croatia's 242-year-old Ginkgo from Daruvar securing the second and Russia's Lonely Poplar the third place, a youngster at only a century old.

John Healey, professor of Forest Sciences at Bangor University, has scoffed at the government's ambitious plans for hitting climate goals by planting indigenous species such as oak and beech. He says we have no choice but to engage with the commercial sector in large-scale planting of imported conifers, despite fears of the impact on habitats and wildlife. He says that indigenous species grow too slowly to be an efficient option for rapid carbon fixation, and that 'unharvested woodland eventually stops sequestering carbon, when it reaches maturity.' On an even more pessimistic note, he says that, although it would be nice to have 'native species of woodland of broadleaved trees and lots of diversity, it just not economically possible.' Oh dear. There we have the dilemma in a nut-shell.

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