

The value of forests



Forests are fascinating ecosystems that have accompanied our history and are part of our collective tales. Let's protect them!

Forests cover roughly a third of emerged lands and are one of the most fascinating and complex natural ecosystems. We understand intuitively what a forest is, but it is quite difficult to find a formal definition sufficiently appropriate to encompass their vast global variety, from lush old-growth tropical jungles to icy boreal mountains covered with conifers. The United Nations' Food and Agriculture Organization (FAO) [defines forests](#) as "land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ... not including land that is predominantly under agricultural or urban land use". But trees are only the visible part.

A forest is a complete living ecosystem, much more than simply the sum of its parts, where most of the interactions within are hidden from view. Small seeds trying to emerge under a layer of decomposing leaves, an immense underground fungi network, billions of bacteria in every teaspoon of rich soil, little insects boring galleries in decaying wood or buzzing around amphibians trying to catch them, birds nesting high up under the canopy, mammals silently hunting at night or foraging for nuts and dispersing them. All of this, and much more, happens around us when we take a walk under the trees, but we barely see any of it.

Maybe the feeling that is conjured up by unfamiliar creatures carrying out unseen activities around us is the reason why forests, throughout history, have been seen as mysterious places, isolated and disconnected from daily human society. The darkness of their undergrowth contrasts with the luminosity of open landscapes. In many cultures, folk tales tell of strange and dangerous creatures that live deep in some ancestral forest. Sometimes these beasts are mythic, sometimes they are real. All children know that if they get lost in the labyrinthine paths of 'The Forest', they might meet the big bad wolf, the malevolent witch, the huge grizzly bear or the cruel ogre. At the same time, the aura of fear emanating

from secluded forests has been a welcome protection for outlaws, robbers or persecuted and marginalized groups throughout history; as, for example, is depicted in the Robin Hood tales of English folklore. Attacking armies hate forests, which are ideal places for ambushes, hiding, defending and quick escapes.

Artists have long used forests as a backdrop landscape with an important but ambivalent role, sometimes as if it is almost an unnamed character itself. Depending on our cultural background, we all remember books or films that fall into this category. In Joseph Conrad's novel 'Heart of Darkness', its film adaptation 'Apocalypse Now' by Francis Ford Coppola, Werner Herzog's film 'Aguirre or the wrath of God' or Colombian director Ciro Guerra's lesser-known but magnificent 'Embrace of the Serpent' about a double botanical quest, the dark jungles of Congo, Southeast Asia and the Amazonian basin are major parts of the story. The deeper into the intimidating and oppressive forest that the outsider characters penetrate, the more they lose their humanity and veneer of civilization, until they become fully insane and sick; the darkness of the forest reveals the darkness of the soul. In J.R.R. Tolkien's 'Middle Earth' stories, forests are protective shrines for Elves, but are also inhabited by powerful and ancient tree-like creatures, the wise and talkative Ents, and the shadowy and aggressive Huorns who can eliminate whole armies when angry. From a more positive angle, woods can also be depicted as welcoming homes for peaceful indigenous tribes, guardians of the land who sustainably use the natural resources around them. They are presented as real self-contained paradises (until disaster comes from outside), as they are in James Cameron's 'Avatar' movies, and of the many works that inspired it such as John Boorman's 'The Emerald Forest', the legend of Pocahontas or Ursula Le Guin's admirably named novel 'The Word for World is Forest'.

Outside of the arts, forests have always supplied natural resources to nearby human settlements, from timber to food. According to the Center for International Forestry Research (CIFOR), many millions of people still rely on neighbouring forests to live or to earn an income. From loggers in the North of Sweden to subsistence farmers in Rwanda, the economic aspect of woodlands in human

society should not be overlooked, particularly as it can play a significant role in several of the UN's [Sustainable Development Goals](#): access to food and clean water, ensuring healthy lives, combating climate change, protecting ecosystems and developing sustainable local economies. It is in fact the central message in the '[State of the World's Forests](#)', published by the FAO in 2022.

Despite, or perhaps because of, the long history of human dependence on forests, they are under threat. Woodlands are disappearing globally, although deforestation is happening at different rates depending on the region; and in Europe, planted forests might actually be increasing, even if they are less diverse. On the other hand, primary forests, which by definition have been minimally affected by humans and are immense reservoirs of yet unknown biodiversity, disappear at an alarming rate, particularly in humid tropics. Various solutions are proposed to fight against deforestation. One [long-term project](#) has been spearheaded by botanist Francis Hallé, who hopes to recreate a large temperate primeval forest in Europe by stopping all human intervention and letting natural dynamics re-establish themselves, even if this takes a century or more. Resurrecting a primary forest for its own sake and the opportunity to closely monitor the process, without considering the exploitation of this novel ecosystem, is a radical but beautiful experiment.

Without forests, there would be no human beings. They have accompanied us throughout history and are ever-present in our old tales and imagination. But the complexity of the network of interactions happening inside forests has hampered our understanding. Biologists often prefer a reductionist approach, studying their subject in isolation. Growing a handful of *Arabidopsis* on a sterile plate produces data quickly and limits uncontrollable variables but is a poor model for an ecosystem that develops over a timescale of centuries. For our great grandchildren to appreciate the mysterious sounds and sights of a walk under the canopy, we may require a different scientific practice. Forests helped us as a species; now let's return the favour by studying, understanding and protecting our remaining forests.

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