



Attenborough Forest

*The Perfect World Foundation's
Tree Planting and Forest Preservation Initiative*

Attenborough Forest

Restore our planet.

Biodiversity is the key to life on Earth, it is an infinite and fine-tuned network where every species depends on others to survive. Planting trees in addition to preserving existing forests, benefit ecosystems and their biodiversity. Healthy forests also improve air and water quality, provide food, medicine and fresh water, create wildlife habitats, stabilize soil, and reduce desertification and the risk of forest fires.

Like all plants, trees capture carbon from the atmosphere, and use it for growth, and some of that carbon is stored in the tree as wood and some enters the soil where it can stay for hundreds or even thousands of years. Trees simply help us fight global warming (the effect of climate change) by reducing CO₂ in the atmosphere, and on top of that it is an efficient and a 100% natural solution.

Revive biodiversity and fight climate change.

Attenborough Forest – named in honour of Sir David Attenborough who planted the forest's symbolic first tree – is The Perfect World's global tree planting initiative. The project plants trees around the world, educate and spreads awareness to increase knowledge, alongside efforts aimed at forest preservation.

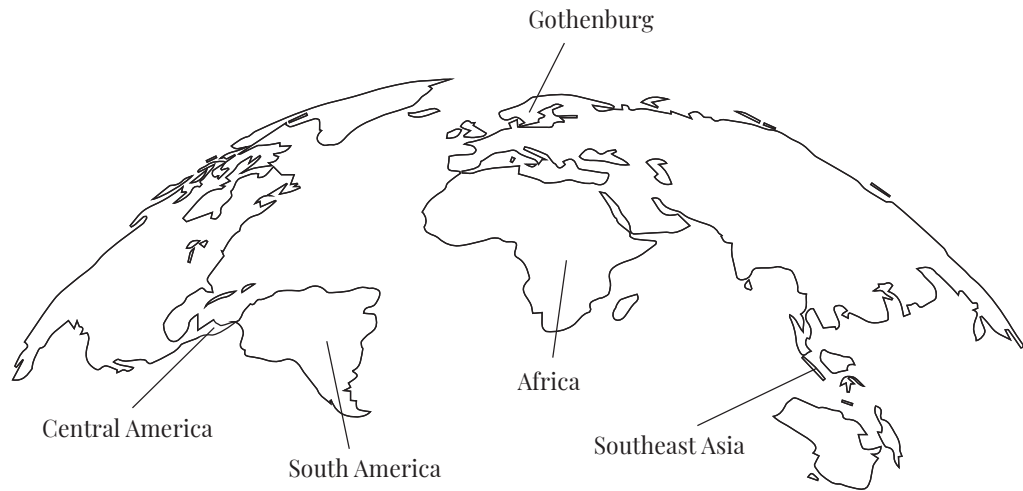
Attenborough Forest is a global multi-purpose tree planting and forest preservation project with the joint outcome of reducing CO₂ in the atmosphere. We plant trees to save the rainforests, restore mangrove forests, create wildlife habitats, bring knowledge, work and food to local communities, revive biodiversity and fight climate change.



WE ARE TREE PLANTERS
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The Attenborough Forest is planting trees with projects in South and Central America, Africa, and Southeast Asia, and the "forest" is continuously growing with other tree planting projects around the world.

Course of Action.

The Attenborough Forest is The Perfect World Foundation's tree planting initiative, across this global forest the organization plants trees and preserve primeval and native forests, in cooperation with local tree planting projects and preservation programs, around the world. The foundation of the initiative is to plant different trees species on different locations, to enable trees to be planted for different purposes, and to maintain flexibility to make quick decisions if an urgent need to plant trees in a certain area arises.

By planting trees on different locations we also mitigate the risk of the entire Attenborough Forest will be impacted by a natural disaster. If a certain area is impacted by, for example raging wildfires, the Attenborough Forest will still be thriving in other areas. However, the Attenborough Forest will of course be part of the reforestation of the area impacted by a natural disaster.

By operating on a global basis, the Attenborough Forest attracts partners who want to plant trees for different purposes, as The Perfect World Foundation can tailor certain tree planting schemes for partners' special interests. Furthermore, The Perfect World Foundation is working in close cooperation with local tree planting organizations.

After more than 10 years as NGO, The Perfect World Foundation has invaluable worldwide contacts and is, and has been doing, the "due diligence" of their tree planting partners. By partnering with The Perfect World Foundation and their tree planting initiative Attenborough Forest, you are supporting local organizations and local population, with the organization as assurance.



The importance of planting native tree species.

When planting native trees*, Attenborough Forest help native ecosystems to thrive. Native plant species and native animal species have evolved together over thousands of years, supporting one another to survive. Native trees are typically better adapted to the local environment. Native trees are also key to avoid tree planting to be invasive or overly competitive with other native plants.

**Native trees—tree species that are naturally found in a specific region, part of its ecosystem and have been growing there for thousands of years.*

Trees and Biodiversity.

Global warming is, as for us humans, severely affecting biodiversity. Temperature increases on land and in the sea, shrinking habitats and a decrease in species distribution, are just some of the threats our planet's biodiversity is subjected to, caused by climate change. Biodiversity is the key to life on Earth, and researchers also believe that the loss of biodiversity may exacerbate the effects of climate change.

Tree planting has many other positive effects benefiting biodiversity (and all life on Earth), in addition to slowing down global warming by decreasing CO₂ in the atmosphere. Healthy forests improve air and water quality, provide food, medicine and fresh water, create wildlife habitats, stabilize soil, and reduce desertification and the risk of forest fires.

- Trees provide wildlife habitats. A single tree can be home to hundreds of species of insect, fungi, moss, mammals, and plants. Depending on the kind of food and shelter they need, different forest animals require different types of habitats. Without trees, forest creatures would have nowhere to call home. Put in perspective, more than half of the world's plant and animal species can be found in rainforests.
- Trees improve water quality. Trees play a key role in capturing rainwater and reducing the risk of natural disasters like floods and landslides. Their intricate root systems act like filters, removing pollutants and slowing down the water's absorption into the soil. This process prevents harmful waterslide erosion and reduces the risk of over-saturation and flooding. According to the UN Food and Agriculture Association, a mature evergreen tree can intercept more than 15,000 litres of water every year.
- Trees improve air quality. Trees help to clean the air. Through their leaves and bark, they absorb harmful pollutants and release clean oxygen for all living creature to breathe.



Trees and CO₂

It is calculated that planting trillions trees globally is one of the best solutions to reduce CO₂ in atmosphere, and thereby counteract the ongoing climate crisis. Besides being the best solution and 100% natural, it is also the cheapest solution. As trees live and grow they absorb CO₂, the carbon from the CO₂ becomes part of the tree and is stored as wood, and some of the carbon enters and is stored in the soil. Eventually, when the tree dies, the carbon it has been storing is released back into the atmosphere, one of the reasons why it is as important to preserve existing forests as planting new trees.

Mangrove Forests – great carbon sinks.

Different trees absorb different amounts of CO₂, and scientific studies have shown that Mangroves can sequester two to four times more carbon than mature tropical forests and have the highest carbon density. Besides being an important weapon against climate change, Mangrove forests are vital to many coastal marine and terrestrial ecosystems, and also protect coastlines against storms and tsunamis. Another benefit is that the planting of Mangrove trees is very cost-effective compared to many other tree species, and consequently more CO₂ is absorbed per your invested dollar.

Given the benefits and that Mangrove forests is in worldwide decline, The Perfect World Foundation has chosen to have Mangrove tree planting as base for Attenborough Forest's focus of reducing CO₂ in the atmosphere. Majority of the Mangrove trees in the Attenborough Forest are planted in Africa. For over 100 years, mangrove forests have been exploited for charcoal and other local use, leading to large-scale degradation and deforestation in certain areas.

The project offers mangrove reforestation as an alternative to mangrove cutting, to restore the vitality of this important natural resource and inclusion of the local population in the planting process which both bring income and education.



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How does a tree absorb CO₂?

Trees and plants use the energy of sunlight, and through the photosynthesis process trees capture CO₂ from the air and water from the ground and transform it into carbon. Trees convert the carbon into wood and release the oxygen back into the air. In addition to the carbon stored in the tree as wood, some of that carbon enters the soil where it can stay for hundreds or even thousands of years.

The rate of CO₂ sequestration depends on the growth characteristics of the tree species, the density of its wood, conditions for growth, and the tree's plant stage. To have a comparable number, you often talk about CO₂ absorption per hectare.

Different trees have different characteristics and are different in size, but to determine a single tree's characteristic when it comes to absorbing CO₂, you need to:

- 1. Determine the total green weight of a tree.**

The green weight is the weight of the tree when it is alive. First, you must calculate the green weight of the above-ground weight.

- 2. Determine the dry weight of a tree.**

The average tree is 72.5% dry matter and 27.5% moisture. To determine the dry weight of the tree, you must multiply the total green weight of the tree by 72.5%.

- 3. Determine the weight of carbon of a tree.**

The average carbon content is generally 50% of the tree's dry weight total volume. To determine the weight of carbon of a tree, you must multiply the dry weight of the tree by 50%.

The lifespan of a tree.

Just like the average age of humans and animals, the average age of trees depends on several different factors. If a tree has the best possible conditions, such as enough water and sunshine, it can of course live to the end of its lifespan. But even with the best possible conditions, different trees have different lifespans. As an example, a palm tree can live for around 50 years compared to Alaska Red Cedar which can live for up to 3,500 years.

Another factor is human impact, such as logging and other anthropogenic activities causing disruption, which of course also affect the lifespan of trees. When calculating the absorption of CO₂ lifespan is an important factor, and the Attenborough Forest anticipates an average lifespan of 15 years, a calculation which includes different tree species, and is a conservative figure.

For example, a study has shown that Mangroves can live up to 100 years, even though this study was conducted in forests with long history of human disturbance.



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How much CO₂ does a tree absorb?

According to European Environment Agency a mature tree absorb up to 22 kilogram of carbon dioxide (CO₂) from the atmosphere each year. However, a tree is not mature during its entire lifespan, and different trees have different abilities to absorb CO₂. The Attenborough Forest's estimate is that one tree absorbs 10 kilogram of CO₂ per year, calculated on a lifespan from sapling to mature tree and a is conservative figure.

When it comes to calculating trees ability to absorb CO₂ and the CO₂ capture per tree, you need following information:

amount of carbon sequestered per hectare,

- number of trees per hectare,
- the calculated ratio of CO₂ to carbon, as it is the carbon that is sequestered by the trees.
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Calculation.

Ratio of CO₂ to Carbon

One molecule of carbon dioxide (CO₂) consists of 1 atom of carbon (C) and 2 atoms of Oxygen (O₂). The atomic weight of carbon is 12 and for oxygen it is 16.

The atomic weight of CO₂ (12+16+16) is 44, and divided by the atomic weight of Carbon (12) = 3.67. 1 ton of carbon (C) stored equals 3.67 tons of sequestered CO₂.

As an example, calculations have been made that mangrove can sequester 840 tons of carbon per hectare. Some scientists might say this figure should be higher, and others may say it should be lower. We believe it is better to have an average, rather than no average and we anticipate this figure to be valid, and it is calculation based on an expectancy of a 25-year lifespan for Mangrove.

Conversion.

840 tons of Carbon per hectare to CO₂

840 tons x 3.67 will results in 3082.8 tons of sequestered CO₂ per hectare.

Calculation.

Amount of sequestered CO₂ per hectare and year

3082.8 tons of sequestered CO₂ per hectare divided with the lifespan of 25 years will result in 123.312 tons of sequestered CO₂ per hectare and year.

Calculation.

Amount of sequestered CO₂ per tree and year

The normal density of mangrove forest is 10,000 trees per hectare (1 tree per square meter).

Converting tons to kilogram: 123.312 tons of CO₂ = 123,312 kilograms of CO₂

123,312 kilograms of CO₂ divided by 10,000 trees = 12.33 kilograms sequestered CO₂ per tree and year, or 308.25 kilogram sequestered CO₂ per tree over lifespan of 25 years.



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Follow-ups.

The Perfect World Foundation works closely in cooperation with its partners with open and continuous dialogues. Each cooperating partner must sign a donation contract before any funds are donated. A contract, which includes, among other things, The Perfect World Foundation's right to receive an official summary of how funds have been used attested by corresponding receipts, images, and continuous progress updates.

Even though agreements are useful the most important tool in the follow-up process is the relationship with the cooperation partners, so that you know whom you are working with. During the years since the launch of The Perfect World Foundation in 2010, the organization have gathered an extensive network of influential international wildlife conservationist from around the world who facilitates the follow-ups of the different tree planting and forest preservation projects / cooperation partners.

In addition, The Perfect World Foundation's sister organization, The Perfect World Travel, sends on site volunteers to some of our cooperation partners' projects, they first-hand observe the work and progress and reports back to The Perfect World Foundation. The organization also performs on-site visits to evaluate the progress of the different projects (funded by the representative).

Donations and non-profit status.

The cost of planting trees and preserving forests with the Attenborough Forest initiative reflects The Perfect World Foundation's costs for tree planting, forests preservation, education, spreading awareness and follow-up.

Donations made specifically to the Attenborough Forest, will serve the initiative's purpose of planting trees, and preserve forests. Furthermore, The Perfect World Foundation is constantly working to evaluate our operations, including the costs of planting trees.

The Perfect World Foundation is approved by the Swedish Fundraising Control (90-konto), with a "recognition of approval", which is after in-depth scrutiny only granted proven serious non-profit organizations, which also signifies that the non-profit only can allocate max. 25% of its income for administrative costs.

In 2020, The Perfect World Foundation only allocated 3% of its income for administrative costs, which is one of the lowest numbers of all non-profit organizations in Sweden, which in turn means that 97% of the income was used for The Perfect World Foundation core work.

The Perfect World Foundation also has 501(c)(3) status, a US Federal Tax Exemption for Donations to Non-Profit Organizations.