

Dear readers,

After a break of a few months, we're back with news from the tree conservation front.

A lot has happened since the last issue; some twenty new projects have been selected, nearly 80% of the world's tree species have been assessed for the IUCN Red List, trees have begun to be incorporated into the processes aiming at identifying key areas for biodiversity... but, above all, the 600 organisations we support have implemented concrete actions in the field to safeguard almost 1300 threatened tree species in 57 countries. These actions are only possible by implementing various types of action in favour of the targeted species, ecosystems and human populations, details of which can be found in our impact report.

One million trees planted may seem limited in an absurd context of overbidding on the number of trees planted by various tree-planting projects, but we prioritize quality over quantity, long-term survival over immediate results, natural regeneration wherever possible and, above all, we support the diversification and production of the most threatened species, which are difficult to propagate due to their rarity and the difficulty of obtaining seeds.

In our impact report, you won't see a figure relating to carbon; this doesn't mean that we're disinterested in climate change, or the fires and droughts that threaten trees, but we've decided to focus on preserving biological diversity, with the knowledge that this is undoubtedly the best way of improving conditions for adapting to climate change.

Our scientific watch has not stopped, and we also have a large number of articles to share with you. I'd just like to highlight one of them, published a few weeks ago in Science magazine, on the benefits of conservation actions, demonstrating once again that the destruction of the living world is not inevitable.

Enjoy your reading,

Jean-Christophe Vié
Directeur Général

ACTIVITIES OF THE FOUNDATION

New projects: A total of 21 new projects have been selected for funding since the publication of our last newsletter. Some organizations have already benefited from the Foundation's support and are now entering a second or third phase of funding to consolidate their actions or extend their activities to a greater number of species and new sites. The new projects are listed [here](#). A detailed description of the new projects and an updated interactive map showing their location are available on our [website](#).

Calls for proposals: Three calls for proposals have been launched since last summer, two managed directly by our Foundation, focusing on Colombia and East Africa, and one in partnership with the Critical Ecosystem Partnership Fund (CEPF) for Madagascar, for which the selection process is still underway.

The call for Colombia followed the same model as the one tested in Ghana last year, with, as a first step, the development of a National Action Plan for the conservation of threatened tree species, followed by a specific call for proposals to implement the priority actions identified in the national strategy.

A second call for projects targeting East Africa was published in May 2024 and has just closed.

Impact : The Foundation asks all its beneficiaries to quantify their impact as precisely as possible, using a set of common indicators. Two new indicators have been added: the number of seedlings of non-threatened tree species planted in situ and the number of hectares already undergoing ecological restoration.

The collective impact of all the projects supported by the Foundation increases year on year, with almost 1,300 threatened tree species benefiting from *in situ* conservation action in 57 countries.

Many thanks to all our 600 beneficiaries for their daily work on behalf of threatened trees and forests around the world, often under difficult conditions. We hope that these overall results will give them extra energy to continue their work.

Here are some figures detailing our collective impact in 2023, with year-on-year changes in brackets:

Direct actions at species and habitat level :

- 1,283 threatened tree species conserved *in situ* in 57 countries **(+27%)**
- 581 threatened tree species conserved *ex situ* in 40 countries **(+32%)**
- 455,069 seedlings of 629 threatened species planted and/or protected *in situ* in 47 countries **(+29%)**
- 524,523 seedlings of native non-threatened tree species planted *in situ* in 47 countries
- 201,607 mature individuals of 889 threatened species protected *in situ* in 45 countries **(+93%)**
- 1,119,024 hectares of production landscape under enhanced management in 32 countries **(+19%)**
- 1,996,665 hectares of protected areas under enhanced management in 43 countries **(+27%)**
- 23,969 hectares newly protected in 16 countries **(+311%)**
- 2,559 hectares brought under ecological restoration in 26 countries

Threat reduction :

- 11,136 people benefited from alternative livelihoods activities **(+26%)**
- 87,946 people were targeted by concrete awareness raising actions **(+19%)**
- 1,026,945 hectares are better protected against illegal logging in 16 countries **(+74%)**

Enabling conditions :

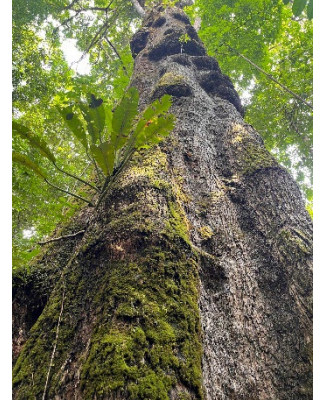
- 599 organisations have improved organisational capacity **(+61%)**
- 28,396 people directly benefited from education and training activities **(-24%)**
- 3,909 tree species assessments were published on the IUCN Red List **(+10%)**
- 3,781 species descriptions were published in various floras **(+616%)**
- 84 action plans for the conservation of threatened trees were developed **(+190%)**
- 74 scientific papers were published **(-5%)**

NEWS FROM THE PROJECTS

Nearly 80% of tree species on the IUCN Red List



The Red List of Threatened Species has just been updated (27/06/24). The total number of tree species on the List is now approaching 50,000. This means that nearly 80% of tree species have now been assessed, and we can at last know the degree of threat faced by each one. These threats are also documented, and the distribution maps that accompany the assessments show in which parts of the world they occur. These results are essential for defining appropriate conservation strategies or identifying key areas for free diversity. For the first time, a large group of plants can be included in these processes.



We are particularly pleased with this result as we have made this project a priority and increased our financial support significantly since 2018. This is undoubtedly the largest assessment project in the history of the Red List, and has contributed to achieving the IUCN target of 160,000 assessed species. Congratulations to BGCI for coordinating this process, and to the thousand experts and hundred organizations without whom this result could not have been achieved.

Unfortunately, with around 35% of species threatened, trees are now one of the most threatened species groups. This reflects the enormous pressure on forests at a time when trees have never received so much attention, particularly for their role in combating climate change.

Conserving the priority threatened tree species of Guinea



A National Conservation Action Plan (NCAP) for the threatened tree species of Guinea has been published recently. Participants from across government, academia, NGOs and the private sector who work on plant conservation and the environment discussed the status of and threats to trees in Guinea, to obtain a consensus on the actions needed for their conservation. This includes 26 species CR/EN and 24 VU species. The plan excludes timber species which are often widespread and already have (different) legislation associated with them. The vision and objectives of the NCAP recommend that indigenous threatened species of trees are promoted and used in tree planting schemes, following the 10 golden rules (di Sacco & Hardwick et al, 2022). Click [here](#) to access the plan and [here](#) for more information about the project.



Training on threatened tree species conservation in Ghana



Capacity development for *in situ* conservation and management of threatened tree species and their habitats is important to ensure that reforestation efforts look beyond tree-planting. The Tropical Biology Association (TBA), together with the Institute of Nature and Environmental Conservation (INEC) Ghana, have delivered a 10-days practical restoration training programme on Ghana's threatened tree species specifically designed for conservation practitioners and managers. Twenty conservation managers are now better equipped to conserve and restore threatened tree species in Ghana. Click [here](#) to access the article.



Impact of overgrazing on Socotra



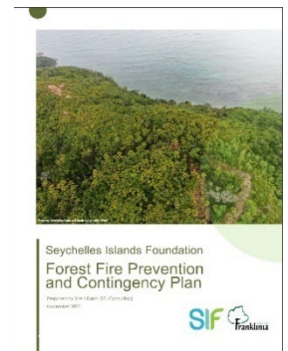
Frankincense trees (*Boswellia* spp.) worldwide are affected by a number of threats, including global warming and changing land management practices. On the Socotra Archipelago (Yemen), which harbours eleven endemic *Boswellia* species, grazing is the main threat preventing natural regeneration. International and local teams working hand in hand with local authorities and communities gives hope that this major threat can be mitigated to ensure the long term survival of these emblematic tree species. This project demonstrates that employing exclosure can be an important strategy in future conservation efforts. The approach will not only be beneficial to produce more seedlings of frankincense trees and enhance natural regeneration, but it will also benefit other endemic plant and animal species Click [here](#) to access the full article written by Salem Hamdiah the first Socotran ever to publish in peer reviewed journals as first author after leading all scientific and conservation work.



Increasing the resilience of Seychelles' flagship tree species coco de mer *Lodoicea maldivica*



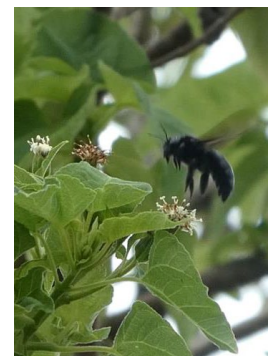
The main objective of this project was to minimise and mitigate a range of threats to the coco de mer whilst supporting the species' long-term monitoring and conservation. Collectively the many achievements and milestones under this ambitious project have provided new scientific knowledge, tools, equipment and protocols, and facilitated significant progress in the management and conservation of this flagship species. A Forest fire prevention and contingency plan has been designed for managing forest fires in Vallée de Mai and Fond Ferdinand. The plan includes sections on risk analysis, early detection and prevention mechanisms, as well as stakeholder involvement through specified command structures. This Forest fire prevention and contingency plan could be useful to other organisations facing the same threats at their project sites. The plan can be accessed [here](#).



Scalesia forest at risk on Santa Cruz Island in the Galapagos



It is estimated that the *Scalesia* forest in the highlands of Santa Cruz Island could disappear entirely within 20 years if the spread of invasive plants, such as the blackberry *Rubus niveus*, is not controlled. The blackberry forms a thick bush that prevents *Scalesia* seeds from germinating. Without young *Scalesia* plants, the species could slowly disappear. The *Scalesia* forest is an important habitat for many different plant and animal species. There are plenty of native insects that call its leaves 'home', and the beautiful flowers attract bees, butterflies, and moths. Not only that, but it provides important food, shelter and nesting opportunities for Darwin's finches and Little Vermilion Flycatchers. It would be truly devastating to lose this vital ecosystem. Watch this short [video](#) to dive into the conservation efforts led by Charles Darwin Foundation to prevent the collapse of *Scalesia* forest in the Galapagos.



A race is on in Colombia to save 8 rare tree species found nowhere else



With 26,900 native species, Colombia has the world's second-largest number of plants. Of this total, more than 6,000, or 24%, are endemic, meaning they're found only in this South American country. However, some of the endemic tree species aren't well known and are highly vulnerable to human activity and climate change impacts, as most have restricted distributions and some are even found in a single locality. Click [here](#) to learn more about the conservation work of the Humboldt Institute to prevent the extinction of eight of these rare trees.



Conserving threatened tree species in very challenging circumstances



Dracaena ombet, a flagship dragon tree species found in arid ecosystems, holds a significant ecological, economic, and socio-cultural value. However, its persistence is currently under threat from both anthropogenic and natural factors. Consequently, the species has been listed as Endangered on the IUCN Red List, requiring urgent conservation actions for its continued existence. In addition, the recent civil war in Tigray has posed major challenges to the project leader, Tesfay Gidey from Adrigat University, who leads the conservation and research efforts on *Dracaena ombet* in Ethiopia. Despite all the risks faced during these difficult years, he managed to deliver successfully on his project and to publish this interesting scientific paper on *Dracaena ombet*. Click [here](#) to access the publication. Two other scientific papers useful to guide the conservation efforts of *Dracaena ombet* have been published in the framework of this project in 2023. They can be accessed [here](#) and [here](#).



A tribute to Fondation Franklinia following taxonomic revision



Bemangidia (Sapotaceae) is a genus endemic to a restricted area in the southeastern lowland moist evergreen forests of Madagascar. This genus was published in 2013 to accommodate an undescribed species which showed a combination of characters unique in the family Sapotaceae. A new study led by the Geneva Botanic Garden found that *Bemangidia* includes two lineages, each one corresponding to a different morphology, with a genetic branch length similar to those observed among species pairs in other genera of Sapotaceae. The authors concluded that the genetic and morphological differences are sufficient to consider the two lineages as two distinct species. Consequently, they revised the genus and described a second species named *B. frankliniae*. The article is available [here](#).



Lost tree species rediscovered in Sri Lanka and in Brazil



The thought to be Extinct in the Wild *Shorea ovalifolia* has been recently rediscovered outside of the protected area network in the Endane Biodiversity Corridor during survey efforts led by Dilmah Conservation team. The few remaining mature individuals have been georeferenced, monitored to understand their phenology, seeds have been collected and now seedlings are growing in the nurseries to support *in situ* and *ex situ* conservation. The 2020 Sri Lanka Red List released in 2023 modified its conservation status from EW (Extinct in the Wild) to CR (Critically Endangered). More information on this project are available [here](#).

Another lost tree species, *Ilex sapiiformis*, has recently been rediscovered during a botanical expedition in northeastern Brazil. This small tree lost for 186 years was one of the top 25 most wanted lost species by the Search for Lost Species project launched by Re:wild in 2017. The place where the team found the tree was once dense Atlantic tropical forest, but is now mostly urban areas surrounded and interspersed by sugarcane plantations. The full story can be accessed [here](#).



The Last of Its Kind in the Wild - Hurrican palm in Mauritius



With only one mature individual surviving in the wild on Round Island, Durrell Wildlife Conservation Trust (DWCT) embarked on a challenging fight to increase the global population of *Dictyosperma album* var. *conjugatum* to less critical levels, to understand the purity and genetic composition of possible specimens surviving in cultivation and to create areas of restored lowland dry palm forest, absent on Mauritius for 200 years. Learn more about their conservation efforts in this [article](#).



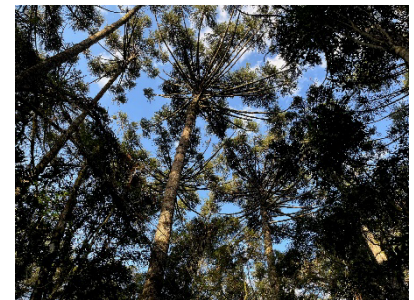
Key Biodiversity Areas triggered by threatened tree species in Gabon

A process to identify Key Biodiversity Areas (KBAs) has just been completed in Gabon. Led by the Missouri Botanical Garden (MBG), in consultation with biodiversity experts, the government and local populations, the process identified 35 KBAs, 21 of which were identified on the basis of the presence of 51 threatened tree species and four threatened forest ecosystems. To our knowledge, this is the first time that all a country's tree species have been taken into account in such a process. This is of the utmost importance, as the government plans to use KBAs to guide land-use planning. Of the 21 KBAs important for trees, 12 are existing protected areas and 9 could become new protected areas or OECMs (Other Effective area-based Conservation Measures). For more information on MBG's conservation efforts in Africa, you can access their newsletter by clicking [here](#). To better understand the importance of KBAs you can read this [article](#).



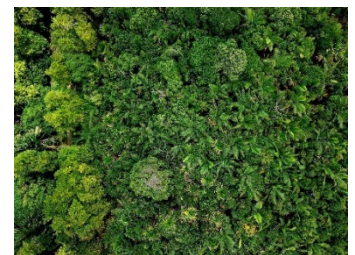
Maximising conservation impact on threatened plants in southern Brazil

Brazil harbors the highest richness of plant species in the world. The country is home to at least 46,097 identified plant species, 43% of which are endemic, with many found in the country's most biodiverse biome, the Atlantic Forest. However, this formidable biodiversity is at risk. Designing strategic areas for biodiversity protection is important but the delimitations of these areas should cover the species most likely to become extinct to ensure effectiveness. A recent study led by Sociedade Chauá shows reassuring results regarding the effectiveness of the strategic areas identified in the Paraná state to protect the most threatened species, especially concerning forest environments where the impacts of fragmentation and isolation are best evidenced. Click [here](#) to read the full article.



Restoring native forests in Mauritius

89% of the endemic plant species in Mauritius are considered at risk of extinction. Controlling invasive alien plants to protect remnant trees and reinforcing sites by planting threatened flora is imperative to reduce plant extinction risk and further habitat degradation. Large areas of native forest are essential to support viable fauna and flora populations. Ebony Forest Ltd has been engaged in restoring native forests for many years and thanks to the support from Fondation Franklinia has initiated the conservation of threatened species at two new sites in Mauritius. Watch [this short video](#) to learn more about their restoration efforts.



Threatened tree species conservation and capacity building in Osa Peninsula

Trees are some of the oldest and most vulnerable species on the planet. When faced with environmental changes, these ancient species may be lost forever. Osa Conservation is on a mission to document and preserve the trees found throughout the Costa Rica rainforest - one of the most biodiverse places on Earth. Click [here](#) to watch a video about their conservation efforts and [here](#) to learn about their efforts to build the capacity of the next generation of tree conservationists.



New magnolia tree species discovered in northern Honduras

Fauna & Flora's in-country partner in Honduras has discovered a new species of magnolia. Named in honour of two prominent Honduran conservationists, *Magnolia ciroorum* was found in Pico Bonito National Park during ongoing fieldwork to document and safeguard the threatened tree species within this globally important haven of biodiversity. To date, just five individual trees of this new species have been identified, making it incredibly rare and eligible for Critically Endangered status on the IUCN Red List. Click [here](#) to access the news featured on Fauna & Flora's website and [here](#) to access the scientific description of this new species.



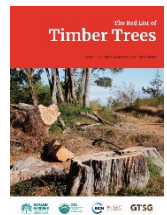
A story beautifully developed around the crisis of deforestation in Hawai'i

We highlighted in one of our previous newsletters the preview of an animation to raise awareness about deforestation in Hawaii produced by the organisation Friends of Auwahi Forest. The film, blending art and science for the benefits of community-based management of natural resources, both on Maui as well as globally, is now available [here](#) for general viewing.



Red List of timber trees

[The Red List of Timber Trees](#) compiles information from 4,945 tree species assessed on the IUCN Red List and used for timber. It finds that a third of these tree species (1,664) are threatened with extinction. The timber use, such as logging and wood harvesting, is the most common threat to these timber trees affecting 59% of species.



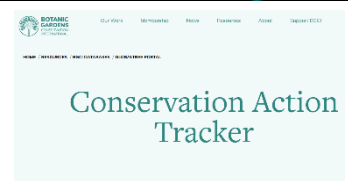
Restoring threatened wild pear populations in Armenia

Armenia lies in one of the centres of wild pear diversity and domestication: 12 of the 32 pear species occurring in Armenia are country endemics. Following the first study of the threatened endemic pears of Armenia carried out in 2016–2018, 360 saplings of *Pyrus gergerana*, *P. hajastana* and *P. daralagezi* were planted in the wild in November–December 2023. The saplings were raised from seed at a Conservation Nursery and Yerevan Botanical Garden. This population restoration was implemented by the Armenian Society of Biologists in collaboration with the Institute of Botany. Additional details can be found [here](#).



Share your data – Conservation tracker

The IUCN/SSC Global Tree Specialist Group and BGCI aim to obtain conservation action information for all known Critically Endangered trees, and most of the threatened species. For more information about the Conservation Action Tracker, please read this [article](#). To contribute, access the following [link](#).



- **Consistent patterns of common species across tropical tree communities**

Trees structure the Earth's most biodiverse ecosystem, tropical forests. The vast number of tree species presents a formidable challenge to understanding these forests. [In this paper published in Nature](#), authors investigate abundance patterns of common tree species using inventory data in Africa, Amazonia and Southeast Asia. They estimate that around 2.2% of species comprise 50% of the tropical trees in these regions and find notably consistent patterns of common species and species abundance distributions across the continents. This suggests that fundamental mechanisms of tree community assembly may apply to all tropical forests.

- **Comprehensive conservation assessments reveal high extinction risks across Atlantic Forest trees**

Efforts to set conservation priorities and evaluate protection activities often depend on assessments of species' conservation statuses, such as the IUCN Red List of Threatened Species. Assessments require detailed data, considerable time, and expertise. [De Lima et al.](#) used an automated, quantitative method to assess species based on the Red List criteria and applied it to nearly 5,000 tree species from the Atlantic Forest, a relatively data-rich biodiversity hotspot in South America. They classified over 80% of endemic species as threatened and 13 species as possibly extinct.

- **Declining primate numbers are threatening Brazil's Atlantic forest**

The Atlantic forests of South America are some of the richest and most diverse bioclimatic areas in the world, and are home to a large number of primate species. Trees that produce seeds that are large or protected by a very tough shell rely heavily on such animals to disperse their seeds effectively through the forest. Therefore, when large primates and other herbivorous vertebrates become locally, regionally or globally extinct, the plants whose seeds they disperse are also affected, jeopardising the very survival of these forests. [A recent study](#) attests to this.

- **Mapping the deforestation footprint of nations reveals growing threat to tropical forests**

Deforestation, a significant threat to biodiversity, is accelerated by global demand for commodities. This [article](#) quantifies and maps the spatiotemporal changes in global deforestation footprints over 15 years. Many developed countries, China and India have obtained net forest gains domestically, but they have also increased the deforestation embodied in their imports. Consumption patterns of G7 countries drive an average loss of 3.9 trees per person per year. These results emphasize the need to reform zero-deforestation policies through strong transnational efforts and by improving supply chain transparency, public-private engagement and financial support for the tropics.

- **Prioritizing the reassessment of data-deficient species on the IUCN Red List**

Despite being central to the implementation of conservation policies, the usefulness of the IUCN Red List of Threatened Species is hampered by the 14% of species classified as data-deficient (DD) because information to evaluate these species' extinction risk was lacking when they were last assessed or because assessors did not appropriately account for uncertainty. Robust methods are needed to identify which DD species are more likely to be reclassified in one of the data-sufficient IUCN Red List categories. Contributors of this [paper published in Conservation Biology](#) devised a reproducible method to help red-list assessors prioritize reassessment of DD species and tested it with 6,887 DD species of mammals, reptiles, amphibians, fishes, and Odonata (dragonflies and damselflies). Results provided a list of species likely to be data-sufficient such that the comprehensiveness and representativeness of the IUCN Red List can be improved.

- **Tropical forest loss from growing rubber trade is more substantial than previously thought**

Over 4 million hectares of tree cover – an area equivalent to the size of Switzerland – may have been cleared to make space for rubber plantations since the 1990s. Out of all the rubber planted, 1 million hectares may have been established in Key Biodiversity Areas – sites that contribute significantly to biodiversity in terrestrial, freshwater and marine ecosystems. These are the findings of this [recent research](#), which mapped the conversion of land to rubber tree plantations across south-east Asia. The likely pace of forest loss that was found surpasses previous estimates.

- **Integrated global assessment of the natural forest carbon potential**

Forests are a substantial terrestrial carbon sink, but anthropogenic changes in land use and climate have considerably reduced the scale of this system. Remote-sensing estimates to quantify carbon losses from global forests are characterized by considerable uncertainty and we lack a comprehensive ground-sourced evaluation to benchmark these estimates. Several ground-sourced and satellite-derived approaches were combined to evaluate the scale of the global forest carbon potential outside agricultural and urban lands. This [paper published in Nature](#) shows that a realistic global forest carbon potential is approximately 226 Gigatonnes (Gt) of carbon.

- **State of the World's Plants and Fungi 2023**

The fifth [report](#) in the State of the World's series lays out the current condition of the world's plants and fungi globally. Drawing upon the expertise of 200 contributors from more than 100 institutions across 30 countries, the report is a global collaborative effort which takes an in-depth look at the worldwide drivers and patterns of biodiversity, provides new insights into extinction risk, and identifies critical knowledge gaps and how to address them. On page 50 of the report, the section titled "Illuminating the darkspots of the plant world" shows the location of the world's regions estimated to lack most information about plant diversity and distribution. It was found that the largest knowledge gaps on plant diversity and distribution occur in Colombia, Borneo, Ecuador, India, Myanmar, New Guinea, Peru, the Philippines and Turkey were also identified as global priorities.

- **Tree-planting schemes threaten tropical biodiversity**

Amid a boom in the planting of single-species plantations to capture carbon, scientists have urged governments to prioritise the conservation and restoration of native forests over commercial monocultures, and cautioned that planting swathes of non-native trees in tropical regions threatens important flora and fauna for a negligible climate impact. Monoculture tree-planting schemes are threatening tropical biodiversity while only offering modest climate benefit, ecologists have said, warning that ecosystems like the Amazon and Congo basin are being reduced to their carbon value. See the full Guardian article [here](#) and another article highlighting the risk to reduce natural ecosystems to one metric – carbon, [here](#).

- **Podcast (in French)**

This RFI (Radio France Internationale) [podcast](#), focuses on carbon credits and related criticism, using a case study in the south-west of the Democratic Republic of Congo, in the heart of the Mai-Ndombe forest, where the company ERA-Congo, which controls a 300,000 hectares forest concession, is issuing the country's first carbon credits. Described by many analysts as "rights to pollute", carbon credits have so far failed to demonstrate their effectiveness in preserving either forests or the climate, according to the speakers.

- **Native diversity buffers against severity of non-native tree invasions**

Determining the drivers of non-native plant invasions is critical for managing native ecosystems and limiting the spread of invasive species. For this [paper published in Nature](#), global tree databases were levered to explore how the phylogenetic and functional diversity of native tree communities, human pressure and the environment influence the establishment of non-native tree species and the subsequent invasion severity. Authors found that anthropogenic factors are key to predicting whether a location is invaded, but that invasion severity is underpinned by native diversity, with higher diversity predicting lower invasion severity.

- **Back from the dead: New Hope for Resurrecting Extinct Plants**

Armed with new technology, botanists are proposing what was once thought impractical: reviving long-lost plant species by using seeds from dried specimens in collections. The challenges remain daunting, but researchers are now searching for the best de-extinction candidates. Some seeds have the astonishing ability to survive adverse conditions and sprout after decades, even centuries. Should researchers succeed, they will revolutionize plant conservation and demonstrate that, at least for some species, extinction is not forever. The article is available [here](#).

- **More than half of life on Earth is found in soil**

A [recent study](#) has found that soil is home to 59% of all life on Earth, from an insect feeding on the soil surface to a tiny microbe nestled in a soil pore. This discovery crowns soil as the most biodiverse habitat on the planet. The paper estimates that around 2 million species of arthropod inhabit the soil – some 30% of all known arthropod species. There are far fewer species of soil specialists such as enchytraeidae (resembling mini earthworms) and

oligochaeta (worms), with only 770 and 6,000 species respectively. That might not seem like a lot, but it still represents around 98% and 63% of these animal groups. Articles by the [Conversation](#) and the [Guardian](#) have been published on the matter.

- **Tropical forests share similar mix of common and rare tree species, study shows**

This Nature study showcased on [Mongabay](#) reveals surprising similarities among the most common tree species in tropical rainforests in Africa, the Amazon and Southeast Asia. The study shows some similarities among the world's great tropical rainforests. In terms of their tree communities, rainforests in the Amazon, Africa, and Southeast Asia are all dominated by a few surprisingly 'common' species. In each of these regions, about 2.2% of the tree species at any site account for fully half of all the trees there.

- **Sweden has vast 'old growth' forests – but they are being chopped down faster than the Amazon**

Most of Europe's natural ecosystems have been lost over the centuries. However, a sizeable amount of natural old forest still exists, especially in the north. These "old-growth" forests are exceptionally valuable as they tend to host more species, store more carbon, and are more resilient to environmental change. Many of these forests are found in Sweden, part of the belt of boreal forests that circle the world through Canada, Scandinavia and Russia. But after researching these last relics of natural forest, authors of [this article](#) have found they are being cleared rapidly – at a rate faster even than the Amazon rainforest.

- **Ill-judged tree planting in Africa threatens ecosystems**

[Research](#) has revealed that vast areas are threatened by forest restoration initiatives that are taking place in inappropriate landscapes. One project in particular, the African Forest Landscape Restoration Initiative, aims to plant trees across 100 million hectares of land by 2030. Scientists have warned that the scheme plans to plant trees in non-forest ecosystems such as savannahs and grasslands, potentially disrupting or destroying intact ecosystems. The research found that 52% of tree-planting projects in Africa are occurring in savannahs, with almost 60% using non-native tree species, which also brings the risk of introducing invasive species.

- **Global rainforest loss continues at rate of 10 football pitches a minute**

The destruction of the world's most pristine rainforests continued at a relentless rate in 2023, despite dramatic falls in forest loss in the Brazilian and Colombian Amazon, [new figures show](#). An area nearly the size of Switzerland was cleared from previously undisturbed rainforests last year, totaling 37,000 sq km, according to figures compiled by the World Resources Institute (WRI) and the University of Maryland. This is a rate of 10 football pitches a minute, often driven by more land being brought under agricultural cultivation around the world.

- **Tree invasions**

Non-native trees represent an important and increasing concern globally, as they are often actively planted far outside their native ranges for forestry, reforestation, residential, or ornamental purposes. However, tree invasions have been relatively overlooked, even though they have the potential to transform ecosystems and economies. [This article](#) explores how the phylogenetic and functional diversity of native tree communities, human pressure and the environment influence the establishment of non-native tree species and the subsequent invasion severity. Although planting trees can potentially be a tool to fight climate change, a greater consideration of their impacts is required to minimize the unexpected negative consequences of afforestation efforts. [This article](#) explains the unintended consequences of planting native and non-native trees in treeless ecosystems to mitigate climate change.

- **Edge effect on tree architecture**

Young trees colonising forest fragments have thicker branches and architectural traits that optimise for light capture, which result in 50% more woody volume than their counterparts of similar stem size and height in the forest interior. However, a lower height was observed in some large trees, leading to a 30% decline in their woody volume. [This study](#) indicate a strong influence of edge effects on tree architecture and allometry, and uncover an overlooked factor that likely exacerbates carbon losses in fragmented forests.

- **Climate change and hotspots of endemic trees**

Risks of extinction are more severe for tree species with restricted ranges and distinct evolutionary histories. Low-to-mid latitudes host most endemism hotspots which are mostly located outside of protected areas and facing relatively high land-use change and future climate change pressure. [This study](#) highlights the risk from climate change for tree diversity and the necessity to strengthen conservation and restoration actions in global hotspots of phylogenetic endemism for trees to avoid major future losses of tree diversity.

- **Trees and World Heritage**

UNESCO World Heritage sites are some of the most biodiverse places on Earth. They cover less than 1% of earth's surface, yet harbor more than 1/5 of mapped global species richness. Trees were incorporated in [this report](#) showing that 29% of all tree species and 16% of threatened trees are found in World Heritage sites.

- **Why are iconic trees so important**

Trees are living archives, recording the past of our planet and our own personal histories. They are also steeped in storytelling and symbolism. Therefore, the deliberate cutting down of trees can be highly emotive. [This article](#) explains why iconic trees are so important and how replacing those that fall can be complicated.

- **Is there such a thing as too many trees?**

In Nebraska (USA), ranchers are battling the inexorable march of redcedar trees across grasslands. Previous generations were encouraged to plant trees that now offer shade, windbreaks and visual relief from the unrelenting horizon of prairie. But today, the advancing wall of conifers threatens the very existence of grasslands and grassland birdlife. The full story can be read [here](#).

- **Carbon offsets**

A research conducted a few months ago looking into rainforest carbon credits found that the system is not fit for purpose. It generates highly inflated environmental impacts and some projects fail to provide safeguards for vulnerable forest communities. [The study](#) suggests that rainforest conservation projects are not suitable for carbon offsetting and a different approach should be used to effectively protect critical ecosystems such as the Amazon and Congo basin.

Carbon offsets from voluntary avoided-deforestation projects are generated on the basis of performance in relation to ex ante deforestation baselines. [This study](#) found that most projects have not significantly reduced deforestation and, for projects that did, reductions were substantially lower than claimed. Methodologies used to construct deforestation baselines for carbon offset interventions need urgent revisions.

- **Killing the Amazon**

The land ecosystems of the world together absorb about 30% of the carbon dioxide released by burning fossil fuels; most of this takes place in forests, and the Amazon is by far the world's largest contiguous forest. However, climate change, deforestation and other human threats are driving the Amazon towards the limits of survival. In the southeastern Amazon, the forest has even become a source of CO₂. In [this richly illustrated report](#), scientists attempt to forecast the future of the Amazon rainforest.

- **Liana and Trees**

Liana competition with trees is threatening the global carbon sink by slowing the recovery of forests following disturbance. [This study](#) reveals that degraded tropical forests with environmental conditions favouring lianas are disproportionately more vulnerable to liana dominance and thus can potentially stall succession, with important implications for the global carbon sink, and hence should be the highest priority to consider for restoration management.

- **Early trees**

The earliest trees, from nearly 400 million years ago, are known mostly from fossils of their trunks; their leaves and canopy shapes have remained a mystery. A [newly reported](#), 350-million-year-old tree found in Canada provides a vivid answer for one such primordial species. The fossils, among the few showing trees with attached leaves and branches, probably were preserved when a landslide buried them in a lake. These trees stood at least 2.6 meters tall, with each of their more than 200 leaves extending about 1.7 meters.

- **Forestation – benefits overestimated**

Forestation is considered a good way to sequester atmospheric carbon dioxide and cool climate, but its impact on climate is more complex than just its effects through carbon capture. Changes in albedo (surface reflectivity) and atmospheric composition from forest expansion could offset up to one-third of the climate mitigation effects of the CO₂ sequestered. [This study](#) suggests that the benefits of forestation may be overestimated.

- **Cutting forests to make room to plant trees** (in French)

Many governments have announced large tree planting schemes. Such projects are often ill designed and aim at supporting the forestry sector rather than mitigating the effect of climate change. That is the case of a large national tree planting project in France. [This article](#) explains why planting a billion trees is going to do more harm than good to French forests.

- **What counts as forest – The example of India**

There is a sharp difference between single-species plantations and natural forests. However, far too often, plantations are counted as forests allowing countries to report increase in forest cover and show compliance to international climate goals. [This article](#) gives the example of India where the increase in forest cover comes mostly from croplands (82%) with minor contribution from forests (4.4%).

- **Partner or perish: tree microbiomes and climate change**

Trees, like other plants, maintain close associations with a multitude of microorganisms on and within their tissues, forming a 'holobiont'. However, a comprehensive framework for detailed tree–microbiome dynamics, and the implications for climate adaptation, is currently lacking. [This review](#) identifies gaps in the existing literature, emphasizing the need for more research to explore the coevolution of the holobiont and the full extent of climate change impact on tree growth and survival.

- **Conservation works**

[A study](#) measuring biodiversity conservation outcomes resulting from conservation projects found that in two-thirds of cases, conservation either improved the state of biodiversity or at least slowed declines. Interventions targeted at species and ecosystems, such as invasive species control, habitat loss reduction and restoration, protected areas, and sustainable management, are highly effective and have large effect sizes. This demonstrates that conservation actions are successful but require transformational scaling up.

- **Composition of Amazonian tree communities**

The Amazon rainforest harbors the world's richest and most complex tree communities. Nowhere else on Earth sustains so many ancient, little-studied tree lineages and such remarkable ecological diversity. [This paper](#) created a giant evolutionary tree including over 5,000 Amazon tree species. The analysis reveals that Amazonia's vast flooded forests have a unique and distinct evolutionary history and that specialization for local soil, topographic and climatic conditions has played a key role in the diversification of Amazonian trees and the ecological communities they sustain.

- **Protecting Brazilian giants**

Found in several Brazilian states, the giant red angelim (*Dinizia excelsa*) is being threatened by encroaching illegal mining and deforestation that is reaching even protected areas. Authorities in the states of Para and Amapá are making efforts to ban the cutting of this species for its symbolic and ecological value. As explained in [this article](#), beyond legislation, states also need to tackle illegal activities and protect the giant trees by improving inspections on the ground.

- **Global Biodiversity Standard – Manual published**

Developed through collaboration with leading global organisations and experts, *The Global Biodiversity Standard (TGBS): Manual for assessment and best practices* aims to promote effective and high-quality biodiversity outcomes for restoration, tree planting, agroforestry, and other nature-based initiatives. Tested across diverse ecosystems, the [TGBS Manual](#) sets a new benchmark for restoration projects worldwide. The manual is initially published in English, with translated versions in French, Portuguese, and Spanish to be released over the next few months.

TRAINING AND RESOURCES

- **Durrell training**

Durrell has a proven track record of saving species from extinction and 35 years' experience of conservation training. This expertise, combined with partnerships with other leading conservation organisations, creates a diverse range of conservation training courses for all conservation practitioners and enthusiasts. More information [here](#).

- **IUCN MOOC**

This site offers free online training for all stakeholders in conservation and protected areas. The MOOCs cover a range of topics: protected area management, biodiversity monitoring, law enforcement, species conservation. They are made up of videos, quizzes, testimonials, exams, recommended resources, etc. Learners who take the exams and obtain the required score (75%) receive a certificate of success. More details [here](#).

- **The Red List of Ecosystems for Assessors**

[This course](#) will help understand the Red List of Ecosystems (RLE) methodology and criteria and how to apply them to evaluate risks of ecosystems or to use assessment results to achieve concrete conservation results. It will also help understand the concept of ecosystem restoration and how to use the RLE in restoration.

- **An introduction to natural World Heritage**

Natural World Heritage sites represent some of the planet's most precious natural areas, which the international community commits to protecting for present and future generations. If you are interested in learning about these outstanding natural places, you can register [here](#) for a free open online course. No previous training or knowledge of World Heritage is required. This course is relevant for conservationists, States Parties, site management authorities and managers, protected areas practitioners, NGOs, IPOS, the private sector and academia.