

ACTIVITIES OF THE FOUNDATION

Dear all,

On behalf of the entire Foundation team, I would like to wish you all the best for 2023. I hope that the time for dialogue, endless negotiations and promises that have occupied the second half of last year will give way to action, concrete commitments and a much-needed improvement in the state of nature across the planet.

A heavy workload forced us to slow down the pace of publication in 2022. Despite that, we continued to keep abreast of the most relevant news on trees globally and are delighted to offer you a particularly informative issue.

Fortunately, as the COPs came and went, many were active on the ground, especially our many beneficiaries, whose actions we always enjoy reporting on. Collectively, they not only help to better document the conservation status of tree species around the world, but they also act every day to slow the rate of extinction. Together, the field actors we support today are protecting 797 threatened tree species in 59 countries, including 10% of all Critically Endangered species. We hope that others will join us and that large-scale “tree planting” projects will diversify the species used to include more and more threatened native species. If the energy and money that companies and governments spend on tree planting were directed to projects that follow the rules of ecological restoration, the results for biodiversity would be spectacular. That is my wish for 2023.

Enjoy your reading,

Jean-Christophe Vié
Director General

Call for proposals : The first part of 2022 was devoted to reviewing the projects received in response to the Foundation's fourth call for proposals. Out of just under a hundred projects received, 26 were accepted and funded. They target a total of 363 globally threatened tree species (90 CR, 133 EN, 140 VU) in 38 countries. The list and descriptions are available on [our website](#).

Reflecting on our strategy: With significant progress in the number of tree species assessed for the IUCN Red List, particularly rich but also threatened geographical areas can be identified and targeted for action. It is also necessary to have actors on the ground and an enabling environment to increase the chances of success. The Foundation is therefore likely to focus on specific regions in the future, strengthening the coordination between the different actors. In this respect, our next call for projects will focus on Ghana, a country with an active civil society that has submitted a large number of projects. A workshop was held in October to develop a national strategy, coordinated by BGCI and the IUCN Conservation Planning Specialist Group. The Foundation will support the implementation of this strategy. After Kenya, this is the second national strategy we are supporting.

Overview of projects: The Foundation currently supports around 100 projects, mainly in Latin America / Caribbean (39), Africa (28) and Asia (15). The countries with the most projects are Colombia and Madagascar (8), Ecuador (6), Brazil and Mexico (5). You can see the geographical distribution of the projects on our website on the map at the bottom of the [page](#).

Impact: For the past three years, we have been committed to documenting the impact of each project and that of the Foundation as a whole. Thank you to all our beneficiaries who are asked to provide accurate and quantified information for this exercise. Here is our collective impact for 2021, as well as the progress we have made since last year:

Direct actions at species and habitat level :

- 797 threatened tree species conserved *in situ* in 59 countries **(+115%)**
- 535 threatened tree species conserved *ex situ* in 39 countries **(+86%)**
- 272'905 seedlings of 342 threatened species planted and/or protected *in situ* in 50 countries **(+34%)**
- 73'342 mature individuals of 492 threatened species protected *in situ* in 54 countries **(+130%)**
- 896'603 hectares of production landscape under enhanced management in 33 countries **(+210%)**
- 1'615'984 hectares of protected areas under enhanced management in 45 countries **(+133%)**
- 11'060 hectares newly protected in 14 countries **(-72%)**

Threats reduction :

- 4'502 people benefited from alternative livelihoods activities **(-22%)**
- 48'383 people were targeted by concrete awareness raising actions **(+380%)**
- 699'884 hectares are better protected against illegal logging in 18 countries **(+14%)**

Enabling conditions :

- 253 organisations have improved organisational capacity **(+73%)**
- 15'707 people directly benefited from education and training activities **(+283%)**
- 7'475 tree species assessments were published on the IUCN Red List **(-18%)**
- 1'066 species descriptions were published in various floras **(+38%)**
- 67 action plans for the conservation of threatened trees were developed **(-11%)**
- 81 scientific papers were published **(+69%)**

Yes we can... save the rarest trees from extinction: Approximately one-third of tree species are threatened with extinction, and there are trees so rare that only a single specimen remains. Franklinia Foundation has decided not to give up on any tree species and has set a goal of zero human-induced tree extinction. We believe that this is a realistic goal as this [article highlights](#). Two of our beneficiaries are working to save the last single specimen of a species; the projects are taking place on Round island, an island close to Mauritius mainland (Durrell Wildlife Preservation Trust and Mauritian Wildlife Foundation), and in the Brazilian state of Bahia (New York Botanical Garden and University of Bahia). This [article](#) explores whether science can save these threatened species from extinction, and provides examples of ongoing work.

Project visits: The lifting of travel restrictions has allowed us to resume our field visits and meetings with our beneficiaries. We were able to visit the projects we support and also meet potential new beneficiaries in Mauritius, Yemen, Brazil, Ghana and the UK. These meetings are always very enriching and useful; they allow us not only to visualise the impact of the projects and the context in which they are implemented, but also to get to know the teams on whom the survival of many species depends.



Change in the team : Véronique Begué joined the Foundation's team as Office Manager in May 2022. After working as an international lawyer, and then in the field of philosophy, she decided to dedicate her professional career to her personal aspirations and in particular the environment. Her multidisciplinary background and experience are a great asset to the Foundation. Véronique is the main point of contact for our beneficiaries, particularly for all administrative and financial matters.



NEWS FROM THE PROJECTS

Global - Two-thirds of trees assessed for the IUCN Red List



The assessment of the 60,000 tree species continues with the involvement of hundreds of individuals and organizations working under the coordination of Botanic Gardens Conservation International (BGCI) and the IUCN/SSC Global Tree Specialist Group. This is the largest assessment effort for a group of species ever undertaken in the history of the Red List. To date, there are more than 37,000 tree species on the Red List, with a further 3,700 species awaiting validation by IUCN. Data is available on [the Red List website](#) and on [BGCI Global Tree Portal](#).



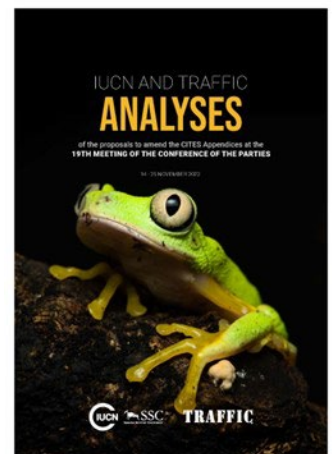
Global - CITES



Timber issues are now firmly on the CITES agenda representing a major development for the Convention over the past 30 years. More than 900 tree species are currently listed in the Appendices, and proposals to list over 150 more species were agreed at CoP19 in Panama in 2022.

Proposals to list the genus *Khaya* and African populations of *Azelaia* and *Pterocarpus* were adopted by consensus. Proposals to list *Handroanthus*, *Roseodendron*, *Tabebuia* and *Dipteryx* were more controversial. The proposals for these Latin American spp. were adopted following votes. The burden of implementation was cited as the main reason for not supporting the proposals.

Franklinia supported IUCN and TRAFFIC in undertaking a technical review of the tree proposals. The resulting document brought together a broad range of expertise to assist Parties in their consideration of the proposals. The analyses can be found [here](#).



Hope for *Scalesia cordata* in Galápagos



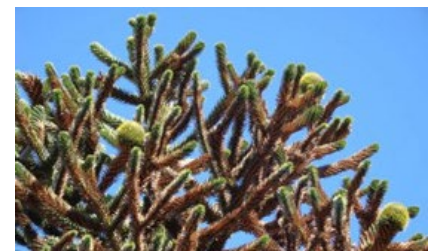
When we talk about Galápagos we always think of Darwin, giant tortoises and finches. But few outside Galápagos know about the *Scalesia* plants, commonly known as Darwin's giant daisies. *Scalesia* is a genus of 15 species of plants endemic to the Galápagos Islands. These species have very different leaf shapes, depending on the island and climate zone they inhabit. Most are shrubs; only 3 are trees, one of which has heart-shaped leaves: *Scalesia cordata*. This species is found only in the south of Isabela Island. With only 1% of the 1,700 trees found in 2002 still surviving in 2019, it is extremely threatened. [This article](#) explains the work undertaken by the Charles Darwin Foundation to save it from extinction.



Araucaria conservation in Argentina



Araucaria araucana is an impressively large and long-lived (> 1200 years) conifer. It is rare and endemic to southern Argentina and Chile, where it produces large seeds that play an important role for the Mapuche community. Four videos have been produced on this iconic species to raise awareness of its outstanding ecological and cultural characteristics, threats to its conservation, management and protection needs. To watch the videos, click [here](#).



An award for Sociedade Chauá



2022 will remain a particularly rich year for Sociedade Chauá and its leader Pablo Hoffmann. We have supported his work in the araucaria forests of Paraná state in southern Brazil we have supported for many years.

The first event was the presentation of a Whitley Award. You can watch a film about their work and Pablo's speech at the award ceremony [here](#). The work of Pablo and Chauá was then featured by [CNN](#). If you want to follow Chauá's work, they launched their [YouTube channel](#) at the end of the year.

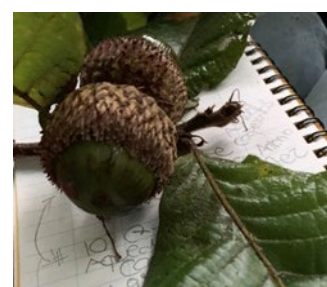
Congratulations also to David Kwarteng of the Institute for Nature and Environmental Conservation in Ghana, another of our partners, on being a finalist.



Oak conservation in Mexico



Mexico has more oak species than any other country. In recent years, the seedlings of one of its most threatened and popular oak species, the arroyo oak (*Quercus brandegeei*), have disappeared. This oak is an endangered, narrowly endemic species found in Baja California Sur. One-third of its 3,000 km² range is within a protected area, the Sierra La Laguna Biosphere Reserve. The region is a biodiversity hotspot with high levels of endemism and great beauty. You can learn more about Morton Arboretum's work to stop the loss of this special tree in [this article](#) and [this video](#).



Discover the work of the Cartagena Botanical Garden in Colombia



Colombia is the country where the Foundation has the largest number of active projects. One of them is implemented by the Botanical Garden of Cartagena. Established in 1978, it is trying to preserve 7 threatened tree species on the Caribbean coast of Colombia. In [this video](#), the director of the botanical garden introduces us to some of the species and explains the work his team is doing in collaboration with local nurseries and local people to improve the conservation status of these species.



An animation to raise awareness about deforestation in Hawaii



The Auwahi Forest Restoration Project has partnered with an award-winning animator to produce a 19-minutes long animation taking on deforestation and the process of extinction that robs humanity of parts of its culture and of the natural world around us, both in a global and then a uniquely Hawaiian context. [The preview](#) can be watched on the Auwahi Youtube channel. The film should be available for general viewing soon.



Successful conservation of one of Costa Rica's rarest trees



With only four individuals known to exist, *Pleodendron costarricense* is one of the rarest trees on the planet. Osa Conservation reports on the first ex-situ germination and dispersal mechanisms of this rare, Critically Endangered tree, in [this article](#). In addition they [filmed](#) a number of different animal species interacting with the tree including white-faced capuchin monkeys, which may use the fruits as a topical repellent or medicine.



Sad news from Osa peninsula, Costa Rica



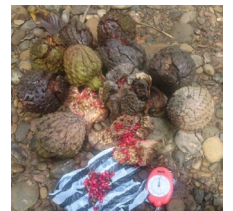
We have also received sad news from the Osa Peninsula with the tragic death of Marvin Lopez. Marvin was one of the key players in the tree conservation project on the Osa Peninsula where he was originally from, one of those conservation heroes who work quietly and do such valuable work. He knew the trees of the peninsula like no one else, and he oversaw their propagation, including the very rare *Pleodendron* seedlings. [This film](#), made in 2019, together with [this text](#) written by Osa Conservation Director Andy Whitworth, tells of Marvin's passion for the forests of his homeland and shows how much he was appreciated. (Photo : Marvin Lopez with Ruthmery Pillco Huarcaya and Jean-Christophe Vié in front of *Pleodendron costaricense*)



Rare magnolias get a new start in Ecuador's Chocó



Only 60 *Magnolia canandeana* trees are currently known in the wild, and only six for *Magnolia dixonii*. These rare magnolia species are found in Ecuador's Canandé Reserve in the Chocó, one of the most threatened tropical ecosystems in the world. The Jocotoco Foundation is the NGO that manages the Canandé Reserve and works to conserve the rainforest. Learn more in [this article](#).



Saving frankincense trees in Yemen



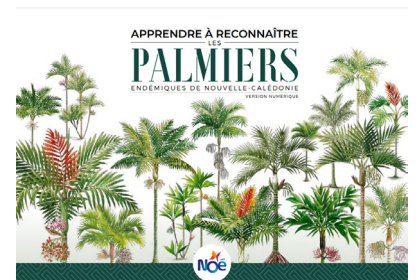
Frankincense trees (*Boswellia*), a species intimately linked to human history for millennia and economically important, are currently threatened with extinction on Socotra Island in Yemen. A consortium of universities in close collaboration with local actors is carrying out conservation actions aimed at increasing the resilience of these species, which represent a unique evolutionary group of island trees of invaluable ecological and cultural importance. To learn more about these species, the threats they face and the champions of this project, read this [article](#).



Monitoring and identifying threatened palms in New Caledonia



New Caledonia is a biodiversity hotspot, with many threatened narrow endemic species. Palms, in particular, are sensitive to environmental changes, and monitoring populations is therefore an essential measure to conserve these emblems of the tropical forest. In [this study](#), the population structure of three narrow endemic palms (*Burretioakentia koghiensis*, *Cyphophoenix nucele* and *Chambeyronia houailouensis*) has been evaluated by Noé. They also produced this [beautiful guide](#) helping to identify endemic palms.



Conservation of threatened trees in private reserves in the state of São Paulo

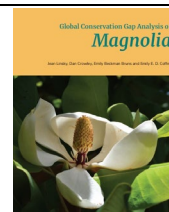


In Brazil, in the state of São Paulo, the Araribá Botanical Garden is trying to protect and restore fragments of semi-deciduous Atlantic Forest and to plant threatened tree species. The project focuses on 4 threatened species, including the 'Pau-Brasil' (*Paubrasilia echinata*), the Critically Endangered tree that is the symbol of Brazil. You can discover the diversity of their work (multiplication of threatened species, agroecology and environmental education) and the 4 target species through [this video](#). These actions are part of a larger project implemented by the Federation of Private Ecological Reserves of the State of São Paulo (FREPESP), which covers several reserves. The different sites are mentioned in this [second video](#).



A Global Gap Analysis for magnolias is now available

This [publication](#) presents a summary review of the *ex situ* and *in situ* conservation status of 336 *Magnolia* species. This analysis aims to provide information to organizations working on *Magnolia* conservation and encourage next steps for collaborative conservation of the world's *Magnolia* species.



Flora of Gabon

Central Africa has one of the highest levels of plant diversity in tropical Africa. This [study](#) led by colleagues from several organisations, including Missouri Botanical Garden (MBG), examines the Gabonese area of endemism and explores the main characteristics and determinants of its vascular plant endemism with regard to taxonomy, growth form, habitat, distribution, and range size.

The latest issue of the newsletter on MBG's activities in West and Central Africa is available [here](#).



Restoration in Brazil in one of the world's richest forests

The Floresta Viva Institute, a partner of the New York Botanical Garden and Bahia State University, is involved in the conservation of threatened tree species in the Atlantic Forest in Brazil. They have posted a [series of videos](#) describing their work. With 458 woody species per hectare their work area is one of the most diverse regions in the world.



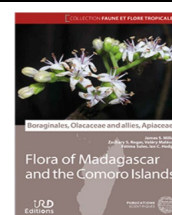
Combining conservation and rural development in Peru

In Peru, Envol Vert is trying to integrate the conservation of threatened species with sustainable rural development and agroforestry. After 10 years of work they have developed a platform to share their experience. To learn more you can watch [this video](#).



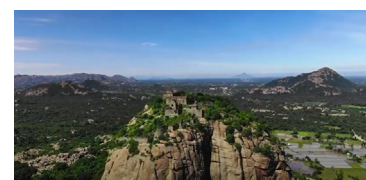
New floras available for New Caledonia, Madagascar and Comoros

The Muséum National d'Histoire Naturelle de Paris has published two new floras covering several families of [New Caledonia](#), [Madagascar and the Comoros](#). These two volumes contains species descriptions as well as illustrations and numerous photographs. They also include identification keys, distribution maps and preliminary assessments for the IUCN Red List.



Two examples of field projects

Two videos offer a field visit to organisations working to conserve threatened tree species in very different contexts, in [India](#) and in [Puerto Rico](#).



Awareness raising in Costa Rica

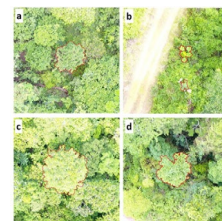
In Costa Rica, the Monteverde Institute's *Mi Ocotea* project continues to be very active on social networks and continues to raise awareness of threatened tree species including *Ocotea monteverdensis*. You can find lots of news and photos about their work on their [Facebook page](#).



Use of drones to monitor tropical forest restoration

Cambridge
Conservation
Initiative

Monitoring tropical forest recovery is challenging but, if the species are carefully chosen, they can be used as an indicator of restoration progress. [This publication](#) presents a way for processing drone imagery to map early-successional species in tropical forests.



Land purchase for tree conservation



The region spanning Pacific Panama, Colombia and Ecuador includes some of the world's most threatened and diverse tropical forests. They have more plant species than anywhere else in the Americas. Sadly, only a small fraction is left intact. Two of our partners, Fundación Jocotoco in Ecuador, and Corporación Salvamontes in Colombia, are leading campaigns to raise enough funds to purchase and protect parts of these forests, connecting them with existing reserves and maintain corridors. To access the pages detailing their initiatives you can click [here](#) and [here](#).



Tracking conservation action



Botanic Gardens Conservation International has developed a tool allowing conservation actions to be tracked. This tracker allows practitioners to provide information on species that they are working on, or species that they know are under conservation action. It should facilitate connections between organisations working on threatened trees within the same genus, and threatened trees within the same country. It will also allow to identify gaps in tree species conservation. More information is available on [BGCI's website](#).



Newsletter of the Global Tree Specialist Group



Franklinia foundation has close links with the Species Survival Commission of the International Union for Conservation of Nature (IUCN), in particular its Global Tree Specialist Group. The Group consists of 140 expert members from botanic gardens, herbaria, universities, and both governmental and non-governmental organisations. Each quarter they publish a newsletter that can be found [here](#).



RECENT PUBLICATIONS AND ARTICLES

- **New global biodiversity framework adopted**

A new Global Biodiversity Framework was adopted at the last Conference of Parties of the Convention on Biological Diversity. Hopefully, this time, unlike with previous frameworks and despite the fact that this is not a binding framework, it will result in concrete actions. Despite the tree diversity found, trees are rarely the focal point of conservation activities. They should be at the forefront of the conservation agenda as they allow projects to contribute to most of the 23 targets. The framework can be found [here](#). The monitoring framework can be found [here](#).

- **Using drones to stem the tide of extinction in Hawaii**

For decades, searching for hard-to-reach plants and collecting samples was carried out by intrepid botanists who rappelled by rope down dangerous cliffs to hunt for what was lost. Today, new drone technology is helping scientists in the uphill battle against plant extinction. This beautifully illustrated [article](#) shows how scientists can now reach places too risky for humans and cast about for the last surviving individuals of plants living along jagged cliffs, often hidden from the human eye, before it's too late.

- **Seedbanks needed**

Biodiverse, properly sourced, native species are key to improving restoration, but wild seed sources are declining rapidly due to land degradation and climate change. Restoration projects also suffer from difficulty collecting genetically appropriate seeds and traditional seed banks cannot provide enough seeds for ecosystem restoration. [This article](#) explains that there is an urgent need for scaling up restoration seed banks, which focus on shorter-term storage and supplying planting projects with large quantities of appropriately sourced seeds.

- **Papers on forest restoration**

Effective restoration of the world's forest landscapes is one of our main challenges in the years to come. As we have repeatedly said over the years, it is much more than planting trees. [This publication](#) provides a wealth of techniques and solutions to avoid the multiple mistakes that have been made in the past and unfortunately continue to be made, using inappropriate species and methods, at inappropriate locations, and without full collaboration between practitioners, scientists and local people.

- **Half of replanted tropical trees do not survive**

A [study](#) analyzed tree survival and growth data from a range of restoration sites in tropical and sub-tropical Asia, where natural forests have suffered degradation. The team found that, on average, 18% of planted saplings died within the first year, rising to 44% after five years. However, survival rates varied greatly amongst sites and species, with some sites seeing over 80% of trees still alive after five years, whereas at others, a similar percentage had died. Survival rates is essential data that we ask our beneficiaries to collect during project implementation and in the long term.

- **About the ecology of Amazonian forests**

Two studies about the ecology of Amazonian forests were published a few months ago. [One](#) studied how local hydrological conditions influence tree diversity and composition across the Amazon basin. The [second](#) looked at the geographic patterns and ecological correlates in the geographic distribution of the most common tree dispersal modes (endozoochory, synzoochory, anemochory and hydrochory).

- **Threatened US Trees**

A few months ago, an [updated checklist](#) of all tree species native to the contiguous United States was published. The publication also includes their state distribution, extinction risk, and most common threats. It includes 881 species from 269 genera, with Quercus and Crataegus as the most species-rich tree genera. An estimated 11–16% of US tree species are threatened with extinction.

- **Monitoring upper-canopy trees**

Upper-canopy trees store the majority of forest carbon and can be particularly vulnerable to drought events and storms. Therefore, monitoring their growth and mortality is important to understanding forest resilience for climate change. [This publication](#) describes a new method allowing landscape monitoring of large trees, using aerial photographs that allow to discriminate between tree crowns.

- **Tree species extinctions matter**

A group of scientists from BGCI and the Global Tree Specialist Group of the International Union for Conservation of Nature's Species Survival Commission (IUCN SSC) have issued an urgent warning about the global impact of tree extinctions. [This publication](#) predicts severe consequences for people, wildlife and the planet's ecosystems if the widespread loss of trees continues. This publication was also the subject of [an article](#) in The Guardian.

- **60% of endemic and near endemic Mexican trees threatened**

Mexico is floristically the fourth most species-rich country in the world. 3620 native tree species can be found in the country including over 40% of endemic or near endemic species. Mexico's extraordinary tree diversity is threatened by the increasing demand for resources because of the tenfold population growth in the last century. As a result, nearly 60% of the Mexican endemic and near endemic tree species whose conservation status has been assessed for the IUCN Red List are threatened, almost double the percentage of threatened trees worldwide. Details of the analysis can be found in [this article](#).

- **Why trees lost their leaves in August in Europe**

Large parts of Europe have suffered a severe drought in 2022. Some trees and other plants have responded in a surprising way: by losing their leaves. [This article](#) explains why.

- **Rediscovery of a magnolia species in Haiti**

A conservation team has rediscovered a new population of Magnolia emarginata in a forest in Haiti for the first time since it was lost to science in 1925. It was found originally in the forest of Morne Colombo, which has since been destroyed by

deforestation. The [discovery](#) of 16 flowering trees in various stages of development, along with juvenile plants in the early phases of growth has sparked new hope for the potential restoration of Haiti's forests.

- **About Data Deficient species**

[This article](#) predicts that more than half of data deficient species are likely to be threatened by extinction and therefore, as a group, may in fact be more threatened than data-sufficient species.

- **Improving genetic diversity**

Genetic diversity provides the foundation for biodiversity and is necessary for long-term survival, adaptation, and resilience not only for individuals, but also for populations, species, and entire ecosystems. This [document](#) aims to be a resource that guides the reader through the decision and evaluation processes that take place when designing a genetic diversity monitoring programme and identifying the most appropriate set of species or populations to monitor.

- **Use of drones for tree canopy sampling**

Tree canopy sampling is critical for biodiversity monitoring and conservation and foliage samples that have been exposed to full sunlight are often needed. This [article](#) reviews the recent developments related to tree sampling with the use of drones and presents a new device that can be used to sample small branches in the uppermost canopy.

- **Trade in wild plant ingredients**

1.2 billion people in the tropics are highly dependent on nature to meet their basic human needs and, of nearly 60'000 species of trees, 10% have a medicinal or aromatic use and one out of 5 species are directly used by humans for food, fuel, timber, medicines, horticulture, and more. This [publication](#) assesses the risks and opportunities of trade in wild plant ingredients with a number of case studies focusing on trees.

- **Not all forests are equal**

Currently, only 12-22% of primary forests and intact forest landscapes are located in protected areas, and the remainder is vulnerable to detrimental exploitation. They are essentially forests that have not been disturbed or harmed by humans and retain their native biodiversity. They may also be home to indigenous peoples and local communities (IPLCs) and form an integral part of their daily lives, belief systems, and livelihoods. This [article](#) explains why primary forests are unrivalled in terms of the benefits they provide.

- **The world's oldest tree**

An ancient Patagonian cypress (*Fitzroya cupressoides*) known as the "Gran Abuelo" (or great grandfather in Spanish) that towers over a ravine in the Chilean Andes, may be roughly 5,400 years old. If that date can be confirmed, it would make the Gran Abuelo nearly 600 years older than the current official record holder for world's oldest tree, a Great Basin bristlecone pine (*Pinus longaeva*) in California known as "Methuselah." Pictures and information of these ancient trees can be found [here](#).

- **Benefits of forest restoration**

Synthesizing data from the world's major forest biomes, this [publication](#) shows that, as suspected, native forests consistently deliver better performance than plantations in the provision of ecosystem services, with additional benefits for biodiversity. The discrepancy was particularly marked in warmer and drier regions. These findings show that the benefits of reforestation will be best achieved through the restoration of native forests rather than extensive plantation programs.

- **Rarity – The case of two tree species in Belize**

Some species are considered rare either because they and the areas where they grow are simply under-botanically explored or because they are unlikely to be encountered. This [article](#) provides a classification resulting in several forms of rarities with the example of two tree species found in Belize.

- **A Global metric supporting nature-positive action**

The Species Threat Abatement and Restoration Metric (STAR) allows quantification of the potential contributions that species threat abatement and restoration activities offer towards reducing extinction risk across the world. It is calculated from data on the distribution, threats, and extinction risk of threatened species derived from the IUCN Red List of Threatened Species. Hopefully trees will be included soon. To learn more about STAR visit the [site](#).

- **Lost Brazilian holly species wanted**

The Pernambuco Holly (*Ilex sapiiformis*) is a tree has been included in Re:wild's top 25 most wanted lost species list as part of their quest to find and protect species lost to science. This species is endemic to Brazil and has evaded scientists for almost

two centuries. It is known only from one sample collected from an obscure location in the Atlantic Forest. More information is available [here](#).

- **Transboundary tree rescue**

Magnolia grandis, a Critically Endangered tree species, inhabits broad-leaved mountain forests along the Sino-Vietnamese border. In this [study](#) the authors modeled how the tree's preferred habitat is likely to shift in response to climate change in the coming decades, finding losses of suitable habitat in current conservation areas and a likely southward shift in distribution into Vietnam. These findings highlight the importance of cross-border conservation efforts in a changing climate.

- **Logging in Romania**

We tend to associate illegal logging to tropical forests. However, in Romania, a significant amount of trees are illegally cut and violence between the logging industry and its opponents breaks out often. Two Bucharest-based documentary filmmakers, worked on a project about the illicit wood trade in the North of the country where some of the country's largest sawmills are based. As shown in this [article](#) opposing logging can be risky.

- **Seed dispersers**

Over half of plants rely on animals to disperse their seeds far and wide. In the face of climate change, birds and mammals are these plants' best chance at putting down roots in a more suitable environment. Unfortunately, many birds and mammals that carry these seeds have experienced staggering losses to their population. This [study](#) created models that could forecast future interactions between animals and plants as their habitat ranges shift, and how species losses up until now have reduced the distance seeds can travel.

- **Fungi: the missing link in tree planting schemes**

Mycorrhizal fungi form close relationships with trees, growing around or within their roots. As explained in this [article](#), these fungi harvest nutrients such as nitrogen and phosphorus from the soil and deliver them to the tree in exchange for carbon-rich sugars generated via photosynthesis. Despite their critical importance, fungi are rarely mentioned when it comes to forest restoration and tree planting and we should better understand what happens to fungi in the soil when we plant trees.

- **African trees that conquered Asia**

With more than 400 species in the tropical lowlands and hill forests of Asia, dipterocarps are among the tallest, most abundant, diverse, and economically important trees on the planet. Because of lack of fossils, the biogeographic origin of Asian dipterocarps was not clear. This [study](#) reports filling this critical gap in dipterocarp evolutionary history by presenting fossil pollen from Sudan and India that is far older than any dipterocarp fossils described previously and by characterizing dipterocarp resin from sediments collected in India.

- **Trees of New Guinea**

With 13,634 plant species, the tropical island of New Guinea is the most floristically diverse island in the world. Remarkably, 68% of New Guinea's plant species are endemic. This [publication](#) is unravelling the mysteries of trees on a paradise island.

- **Total number of tree species**

There is a general agreement that around 60'000 tree species are currently known and recognized by science. However last year a [publication](#) was released estimating that there are ~73,000 tree species globally, among which ~9,000 tree species are yet to be discovered. This brings the number of known species to 64'000. Without access to the species list it is difficult to explain the difference and this sudden increase in numbers. According to the study, roughly 40% of undiscovered tree species are in South America and one-third of all tree species to be discovered may be rare, with very low populations and limited spatial distribution (likely in remote tropical lowlands and mountains).

- **Rare and ancient trees must be protected**

Trees can live for many centuries with sustained fecundity and death is largely stochastic. A small proportion of trees achieve ages superior to 10–20 times the median age and about one-quarter of trees achieve ages that are three to four times greater than the median age. The authors of this [study](#) argue that protecting ancient individuals is especially important as they preserve adaptations to rare but potentially devastating environmental extremes. As they cannot be replaced through restoration or regeneration for many centuries, they must be protected to preserve their invaluable diversity.