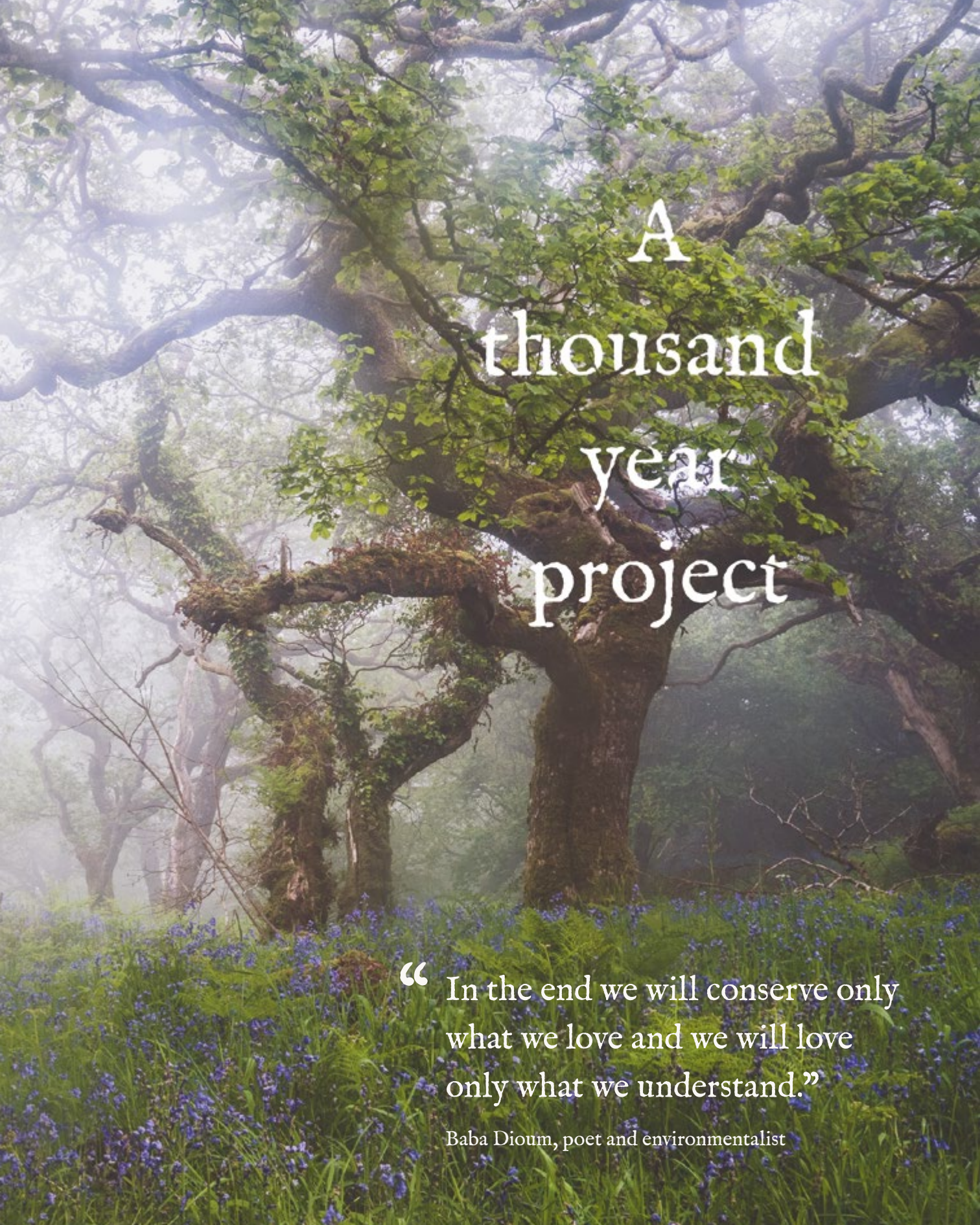
A
thousand
year
project
“In the end we will conserve only what we love and we will love only what we understand.”
Baba Dioum, poet and environmentalist

FOR OVER A CENTURY WE IN THE WESTERN WORLD HAVE BEEN COLLECTIVELY WAGGING OUR FINGERS AT THE GLOBAL SOUTH, INSTRUCTING LESS FINANCIALLY ADVANTAGED COUNTRIES TO PRESERVE THEIR MEGAFAUNA, THEIR APEX PREDATORS AND THEIR NATIVE FLORA. Over 50% of the world's tropical rainforest has been destroyed. But 3,000 years ago Britain itself was a rainforest island. Since that time, we have cut down almost all of this stunning habitat. The Thousand Year Trust, a charity founded in Cornwall at the heart of one of the last remaining Atlantic temperate rainforests, is working to reverse this tragedy.

ENNIA AND HARRISON ARE YOUNG CONSERVATION SCIENTISTS EMBARKING ON AN ADVENTURE. Both in their late twenties, they live in Cornwall and are just finishing their PhDs. Ennia has been studying for hers at the renowned Centre for Ecology and Conservation at the University of Exeter. Her thesis is on understanding social and ecological aspects of forest landscape restoration in a tropical smallholder farming landscape. Harrison commutes up to Oxford University, where he is studying at WildCRU (the Wildlife Conservation Research Unit). His work concerns human-wildlife coexistence and how green finance mechanisms could be used to influence tropical farmers' opinions of apex predators such as lions. They both spend three to four months a year conducting research in western Kenya. But they have chosen to live the rest of the time in Penryn in Cornwall, where they have bought a home together.

MERLIN HANBURY-TENISON

Merlin Hanbury-Tenison is a Cornish conservationist and veteran who founded and runs the Thousand Year Trust, Britain's rainforest charity. The charity's mission is to catalyse the movement to triple Britain's rainforest cover to 1 million acres over the next 30 years. His work has been featured in National Geographic and The Guardian and on the BBC. Merlin lives in a rainforest in Cornwall with his wife Lizzie, an entrepreneur and business leader, and their two young daughters.

When their PhDs are complete, Ennia and Harrison hope to spend the next phase of their careers building their academic portfolios and working as science communicators helping to bring the wonders of the natural world to everyone in society. At a time of climate emergency and biodiversity collapse, this work is vital. They stand on the front line of research into how we can reshape models of land use to restore nature, alongside fighting climate change and feeding the ever-growing human population across the planet. With the pressures on university funding it is important that those who pursue an academic career are focused on tackling the pressing issues of the day, sharing their insights as broadly as possible and working to create change, rather than just compiling a list of peer reviewed academic papers.

Much of their work will be conducted in the world's rainforests. We all grew up learning that rainforests are the lungs of the planet and it's been shown conclusively that they are our most important carbon sink. They also create and influence weather patterns, sometimes thousands of miles away from where the trees actually grow.

FROM CANCER TO CAPRICORN

For scientists like Ennia and Harrison, until very recently their careers would have been focused in and on the rainforests of the tropics, as their PhDs have been. These vast jungles that sit between the Tropics of Cancer and Capricorn have long been the nexus of careers for scientists ranging from entomologists and dendrologists to climatologists and anthropologists.

The forests of the Amazon, the Congo and Borneo are of huge global importance. When we think of rainforests these are usually the places that first spring to mind.

Over the last few centuries we humans have cut down almost half of the world's tropical rainforests. This is a tragedy which cannot be overstated. Our desire to replace pristine rainforest environments with poor cattle grazing, soy plantations and palm oil deserts seems to know no bounds.

The timber that has been extracted is sent across the globe. As you read this there will be something near you that was built using wood from a rainforest tree. In the UK we import 82% of our timber from overseas and much of it still comes from tropical rainforest stock. Even alongside all of this devastation, tropical rainforests still sit starkly in our imagination as thrilling, romantic and adventurous places that we have all read about in children's books and many of us will have travelled to.

GREEN AND PLEASANT LAND

Once upon a time there was an equally important, folkloric and wildlife-supporting rainforest right here in the British Isles. Just 3,000 years ago, up to a fifth of our islands would have been blanketed in the most spectacular ecosystem we have ever grown: Atlantic temperate rainforest. This wild and ancient habitat resided along our western coastline, from Stornoway on the Isle of Lewis to Land's End in Cornwall.

Over time, as human populations grew, farmers were pushed to fell trees and clear forests in order to scrape a living from ever more marginal areas. The principal animal that could be husbanded on these windswept upland areas was the sheep: a Mesopotamian import that eats nigh on anything it sees, especially young saplings. This has prevented any meaningful natural regeneration of the forests over the last 1,000 years. By the turn of the 21st century less than 0.5% of the UK's ancient temperate rainforests remained. We've almost lost them, but not quite.

Approximate extent of temperate rainforest 3,000 years ago

A temperate rainforest is defined by the rainfall it receives (at least 1,400mm per year), the native species mix, the high organic matter in the soil and the epiphytes festooning the canopy. Even if you had never heard of British rainforests before reading this article, I assure you that you will be familiar with them. These are the wet, moss covered and lichen strewn forests of Geoffrey of Monmouth's Arthurian legends, of Tolkien's Fangorn Forest and of Lewis Carol's 'Jabberwocky'. These ancient tulgey woods hold the glades where gallant knights

> “These ancient tulgey woods hold the glades where gallant knights would meet to do battle.”

would meet to do battle, Ents would patrol for Orcs and the frumious Bandersnatch was slain by brave young boys. They are as much a part of our culture and our history as any habitat or any method of land stewardship.

Of the many types of natural habitat and woodland we have in the UK, these rainforests are our most valuable and exciting pockets of wonder and never has there been a more vital time to work for their restoration and protection. They are one of our pinnacle environments for sequestering carbon dioxide and restoring ecosystem services.

But they also provide huge mental and physical health benefits to the humans who spend time in them.

TREES OF LIFE

I learnt this personally a few years ago when recovering from complex post traumatic stress disorder (PTSD) after being blown up by a Taliban-laid roadside bomb in Afghanistan. I retreated into the rainforest valley that survived at the heart of the farm where I had grown up on Bodmin Moor and felt the healing embrace of the lichen blanketed oak trees begin to restore my mind and my body.

As I lay in woodland pools in the bracingly cold river that flows through this rainforest and began to return to health, a seed of fascination was sown. I had spent a great deal of time in many different kinds of habitat but this rainforest was having a more dramatic effect on me than any other. What was it in the air, the trees and the water that was so beneficial?

HEALING PROPERTIES

At first tentatively and then voraciously I began to inhale academic papers on the healing properties of these temperate forests. Japan has the largest body of such research. Since the 1980s the Japanese have invested heavily in s*hinrin-yoku*, or forest bathing, a practice aimed at ameliorating the heavy mental and physical health burdens placed on their society by their aggressive work-life imbalance and densely populated cities.

The Japanese Department of Forestry has sponsored a great deal of research into what it is within their Pacific temperate rainforests that creates these healing effects. During the photosynthetic process a range of volatile organic compounds called terpenes and

> “Something stupendous was happening to people when they spent time within rainforests.”

phytoncides are secreted by the trees and plants in these forests. Breathing in these compounds has been shown to have a marked effect on our physiology. After spending just 30 minutes in a native woodland habitat, test subjects’ cortisol (a key stress hormone) dropped significantly and was still measurably lower two weeks later. Kidney function and immune system response both improved. Interestingly, all of those studied were observed to transition from their sympathetic nervous state (the fight or flight response we developed in order to escape from a lion or tiger) into the parasympathetic (or rest and digest) state. Something stupendous was happening to people when they spent time within rainforests.

I found further supporting research done in the Pacific rainforests of British Columbia and there are scientific teams conducting multi-disciplinary studies in the rainforests of Chile, Tasmania and New Zealand. Even though the United Kingdom has some of the best universities in the world and was once home to 80% of Europe’s Atlantic temperate rainforest, I have found almost no academic papers concerning this habitat and little evidence of research investment by these institutions.

TYPICALLY TROPICAL

The conservation and restoration of the natural world is empowered and enabled by scientific research. This builds societal awareness and shifts government policy towards pinnacle habitats. Because nearly all of the rainforest remaining on Planet Earth is tropical, that is where the research is done, with over 100 universities, research institutions and research stations dedicated to studying that habitat.

Sites like the Danum Valley Field Centre on Borneo and the Tahuamanu Research Station in Bolivia are shining examples of the scientific opportunities tropical rainforests currently benefit from. Both provide on site accommodation for scientists from across the globe with access to laboratories, workshops, equipment and, most importantly, the habitat itself. There are many more examples of field stations like these that empower scientists in the early stages of their careers to burnish their credentials and gain first-hand experience of conservation in action.

Hundreds of intrepid young academics stay at them, join cross-disciplinary research teams and have the opportunity to contribute to peer reviewed papers. Their careers flourish at the same time as the habitat is further understood and protected. Currently there is nowhere like this in the entire Atlantic temperate rainforest bio-climatic envelope, from Bergen in the southwest of Norway to Braga in the north of Portugal.

> “A single oak can host up to 600 species living amongst its canopy: these titans of the forest are bubbling, fizzing, buzzing communities of life.”

FROM LITTLE ACORNS

I decided to change that. In 2022 I founded the Thousand Year Trust, the only charity in the United Kingdom dedicated to the restoration and expansion of temperate rainforests. Ennia and Harrison joined me a few months later as our founding Research Directors.

The name of our charity is inspired by the paramount species that grows within these rainforests, the sessile oak *(quercus petraea)*. These twisted and gnarled trees can live for up to 1,000 years. They take 300 years to grow, they stand tall and proud with their arms reaching to the sky for up to 400 more years and then they take another 300 years to slowly collapse, rot and be recycled back into the mycelial network that thrives through our rainforest soils. A single oak can host up to 600 species living amongst its canopy: these titans of the forest are bubbling, fizzing, buzzing communities of life.

If we are to truly commit to restoring the natural world then we won't be able to achieve these goals using the common 21st century human centric timeframes of two, five or ten years. Our politicians and business leaders are constantly forced to re-learn how these short sprints only set all efforts up for swift failure. We need to adjust our perspective and try to view the arc of time as an oak would, over a 1,000 year horizon – hence our charity's name. If we can achieve this then we can restore our rainforests and sequester enough CO_2 from the atmosphere to halt and eventually reverse climate change whilst providing an abundance of wild spaces for humans to enjoy and heal within.

REDRESSING THE BALANCE

Our initial mission is to triple the amount of temperate rainforest growing across the UK from the assessed remnant of 330,000 acres back up to 1 million acres over the next 30 years. Several core projects will contribute to this mission but our most important endeavour is correcting the global imbalance in rainforest research. We are building Europe's first Atlantic temperate rainforest research station, in the heart of Bodmin Moor, the geographical centre of our rainforest bio-climatic envelope. This will provide a high tech hub to facilitate long-term scientific studies into the climate mitigating benefits of temperate rainforests alongside their biodiversity-boosting potential and their benefits to human mental and physiological health.

We will be not only establishing the scientific baselines for understanding why these habitats are so vital, but also studying how best to restore and expand the fragments that remain. When you are

If you would like to learn more about the work Merlin and the team at the Thousand Year Trust are doing please visit thousandyeartrust.org. Merlin's book, *Our Oaken Bones*, about the healing power of Britain's Atlantic temperate rainforests and a vision for their future, will be published by Penguin in March 2025. Find out about visiting the rainforest at Cabilla Cornwall at cabillacornwall.com.

planting rainforests that won't be fully mature until your descendants in a dozen generations walk beneath their canopy, it's important to ensure the optimal conditions are set down from the start. Our research station will have a dedicated epiphyte and mycelium growing environment on its living roof that will ascertain how to grow, transplant and rapidly establish these integral elements of rainforest ecosystems. This research will be groundbreaking as well as breathtaking in its applications.

For all the ambitious technological and scientific functions of our research station, it will still be a modest set of buildings with a very low establishment cost and ongoing running requirements. We have designed and are beginning the build with this always at the forefront of our minds.

At the time of writing this article the station is one third funded. Hopefully by the time of publication we will have secured all of the donations we require and this focal point for Atlantic temperate rainforest research will be nearing its completion. We depend upon the support and generosity of organisations and people with a similar desire to us to study, understand and improve the natural world for our and all future generations. Please do get in touch if you would like to join us on this life-giving journey. ●

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