

RAINFOREST REVIEW



**25 YEARS
OF SUCCESSFUL
CONSERVATION**

SUMMER 2019

Colombia
Creating the Andes-Amazon-Atlantic corridor

Peru
Fragmented tropical dry forests in northwest Peru

Costa Rica
Turtle conservation on the Caribbean coast

Ecuador
Threatened cloud forest of the Chocó-Andes

Chile
Threatened high-altitude polylepis forests

Chile
Fragmented coastal forests

Chile
Protecting the Araucaria forests of southern Chile

Romania
Ancient meadows and woodlands of Transylvania

Romania
Protection for vulnerable Carpathian forests

India
Conserving threatened plant species in the Western Ghats

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Front cover photo of a spectacled bear in Ecuador by Pete Oxford. Back cover photo of a sunset over cloud forest in Ecuador by Murray Cooper.

In times such as these we must remain positive



It has been an extremely challenging year for our natural world, at a time when we have been consumed by conflict and political and social instability – more so than any time since the Second World War. It is extraordinary that just two men now represent the greatest danger to the environment, the dreadful combination of the US President Trump and Brazil's President Bolsonaro and their contempt for the environment.

Fortunately there has never been more awareness of the fragile state of our planet, climate change and the accelerating loss of biodiversity. The UN's Intergovernmental Panel on Climate Change has warned that new levels of action are urgently required to limit temperature increases to 1.5°C above pre-industrial levels. However, in our concern for climate change we should not neglect the main contributors to it: the relentless loss of natural habitats particularly forests, the contamination of our rivers and oceans and of course the sheer number of people on the planet.

Most recently the UN has published its Global Assessment Report, the most comprehensive study of life on Earth ever undertaken. It states that now over one million species are at risk of extinction and destruction of the planet's remaining areas of wilderness must be prevented. It suggests that we can still avert disaster but this will require drastic changes in our consumption and lifestyle.

Much of the concern is being voiced by schoolchildren out of their frustration that not nearly enough has been done by the older generation to avert a global catastrophe. It would be hard to escape knowing about the Youth Strike for Climate movement, which was inspired by a Swedish schoolgirl Greta Thunberg. In March 2019 an estimated 1.4 million schoolchildren took to the streets to make their voices heard. The Extinction Rebellion protests have drawn attention to global ecological collapse and loss of animal species by demanding action from our governments. Let us hope children can help to achieve what people in power and responsibility have failed to do.

Rainforest Concern was founded in November 1993 so I am pleased to tell you we are celebrating 25 years of our conservation work this year. This edition of Rainforest Review looks back on some of the projects and partnerships over that time. Our efforts for conserving natural habitats and their wildlife are increasing and we are proud to have made such a positive impact over these years and we will continue to need your support as we navigate these challenging times.

Thanks to you our supporters we have helped to protect over two million hectares and countless species of animals and plants.

Peter Bennett, Director, Rainforest Concern



Royal Botanic Garden
Edinburgh



Forest Credits
by Rainforest Concern



Milestones for the protection of the Amazon

by Martín von Hildebrand,
President, Gaia Amazonas



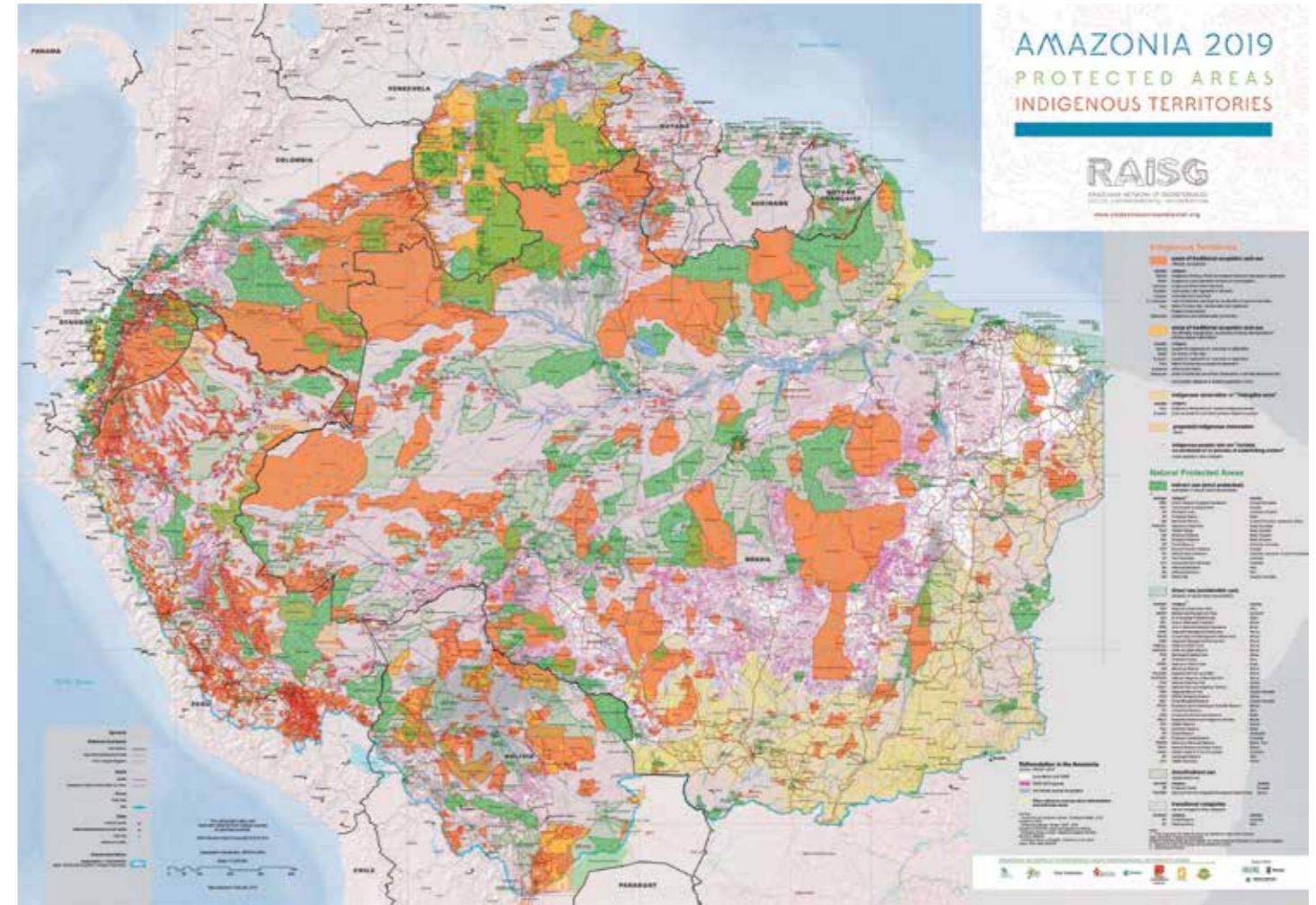
A rainbow over the Amazon

Let us start by looking at the Amazon basin. Forty eight percent of the rainforest is protected by national parks or indigenous territories that have been officially recognised by each one of the corresponding countries (see map 1).

If we look at the pressures on natural resources and traditional cultures, the picture is less optimistic.

In this short article there is not space to reiterate the importance of the Amazon forest as a vital organ of the planetary system, the contribution it makes to the water cycle, to the carbon sink, to biodiversity, to the cooling of the earth, and so on¹.

Wade Davis



Map 1: Amazon Basin: protected areas shown in green and indigenous areas shown in orange

Nor can we describe in depth the importance of the traditional indigenous worldview which defines nature as a community of subjects and not as an accumulation of objects. Nor that humans are part of nature; inter-dependent and connected with nature by the permanent flow of energy that sustains all life through time. Nor shall we analyse the importance of ecosystem connectivity, which is essential to maintain the biodiversity that is at the basis of the whole living system.

What we would like to highlight is that, considering all these aspects, we believe that a major step should, and can, be taken to preserve and maintain the ecological connectivity of the forest in 30% of the Amazon biome.

If you look at the region north of the Amazon river, you will see how most of the forest is already protected by

officially recognised indigenous territories and protected areas. It is the largest continuous forest in the world, and because of its location along the climatic equator, it makes the largest contribution to the Amazon water cycle². What we are proposing is to develop a strategy to maintain the connectivity between the ecosystems from the Andes *cordillera*, across the north of the Amazon forest, all the way to the Atlantic Ocean. This would cover roughly 2.5 million km², four times the size of France (see map 2).

This initiative depends on cooperation and coordination between the national and subnational governments of the eight countries with territory in this area. It also needs the cooperation of scientists and research centers, local communities (with the participation of indigenous communities being especially important), social movements, NGOs and the private sector.

This sounds like a daunting task, but already a lot has been achieved. Each of the eight countries have independently recognised protected areas and indigenous territories, as well as ratifying international agreements regarding climate change, biodiversity, and indigenous peoples' rights. They have also defined strategies for maintaining the connectivity and protection of the rainforest and set-up cross boundary platforms with their neighbouring countries to coordinate different social, economic and environmental issues. Research centers, NGOs and the private sector all have important initiatives and programmes in this area as well.

For the past three years, national and subnational governments, NGOs and indigenous organisations have been discussing this initiative, and have taken some important steps regarding

ecosystem connectivity and the protection of the rainforest.

- NGOs in the region have established a network to coordinate initiatives that contribute to ecosystem connectivity in each of these countries.
- The coordinators of the Indigenous Organisations of the Amazon Basin, as well as national and local indigenous organisations, have taken on this initiative as one of their major objectives.

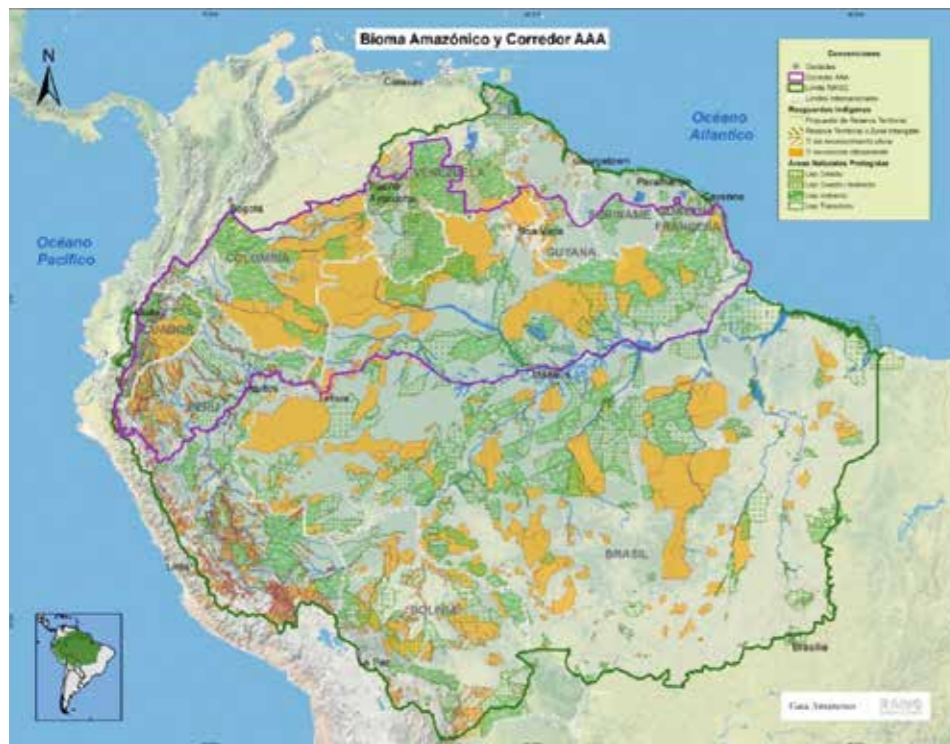
At a subnational level, governors have created an initiative entitled 'Governors Forest and Climate Task Force', seeking the protection of the forests in the eight countries.

- The national governments of the eight countries have been defining the Strategic Plan for the Amazon Treaty (AECA) for the next 10 years, highlighting the importance of ecosystem connectivity.
- Various religious movements around the world, sponsored by the UN, have come together to create the Interfaith Rainforest Initiative

with the purpose of protecting the rainforests and supporting cultural diversity in Indonesia, Congo and the Amazon Basin.

This Andes-Amazon-Atlantic Ecological and Cultural Corridor initiative has been largely promoted from Colombia by the Gaia Amazon Foundation and very importantly by the ex-president and 2018 Peace Nobel prize winner, Juan Manuel Santos.

Much has also been achieved by the local communities that will facilitate the implementation of this strategy. For example, the in-depth coordination between the government and indigenous communities along the lower Apaporis River in Colombia, where the Yaigojé National Park has developed a special management plan with the indigenous communities so that they can run the park based on their traditional knowledge (See Rainforest Review article, 2017). This initiative is introducing a new paradigm where the environmental authority officially establishes the protection of the biodiversity based on traditional indigenous knowledge. Similar initiatives also exist in Brazil and



Map 2: Proposed area for the connectivity strategy, in the region north of the Amazon river (shown with purple border)



Juan Gabriel Soler

Peru within the area of this mosaic-corridor, as well as alternative economic initiatives.

What are the next steps?

In a political context, the region is going through a difficult moment for this initiative. Recently elected governments in the Amazon and beyond do not see the importance of biological nor culture diversity for the present and future of the planet. They are more interested in exploiting the Amazon forest in a conventional economic way.

On the other hand, there are many advances in social movements, alternative technologies as well as productive projects and ecological connectivity and not least the recognition of the rights of nature, as in the case of the Colombian Amazon, which by articulating and scaling up can have a high positive social and environmental impact in the region.

During the last decade Rainforest Concern has supported several Gaia Amazonas initiatives, above all, the Yaigojé Indigenous Initiative and the Andes-Amazon-Atlantic Ecological and Cultural Corridor. This support has been key in helping to achieve important milestones for the protection of a large expanse of the Amazon.

¹ If you would like information about this, you can see this short video made with the support of Rainforest Concern: <https://www.youtube.com/watch?v=RGZtYhJNOM&t=33s>

² For deeper understanding about this, you can also see the following document: Nobre A.D (2014). El Futuro Climático de la Amazonía: Informe de evaluación científica. En: Pan: Amazonía, Escenarios y desafíos de la crisis climática. ARA: Articulación Regional Amazónica.

What a lizard can teach us!

by Carlos Zorrilla, Executive Director, DECOIN



Carlos Zorrilla

Keeled Whorltail Iguana

In the past I've reported on the wild diversity of moths, orchids and ferns inhabiting the cloud forest where I live. The bird and mammal diversity, while not as rich as that of Ecuador's lowland tropical forests, is still impressive. Around my home and the adjacent forest, I and others have identified 222 species of birds. And although mammals have not been extensively studied, there are dozens of species, including the threatened Andean bear, as well as mountain lions, ocelots, coatimundis, and armadillos.

A fortuitous trip to the composting latrine

And so, one morning as I was headed to attend to some very personal business, I noticed a sudden movement on the bamboo wall of my composting latrine (if you are wondering: I think it wiser to enrich the earth with human waste rather than

pollute waterways). Upon closer inspection, I realised it was a beautiful lizard, one I'd not seen before. Ever curious, I ran back to my house and grabbed my camera. Fortunately, the lizard was still there waiting for me to take its photograph, which I did; several of them.

Minutes later, I downloaded the images hoping to identify the reptile. I turned to the Tropical Herping site, which has fine photographs of many of the lizards from this part of Ecuador. Soon, I had a likely candidate for what I initially dubbed the *Compost-Toilet Lizard*, but I wanted to make sure. So, I wrote to the site administrator. He confirmed my suspicion that the lizard was the Keeled Whorltail Iguana (*Stenocercus varius*); a species listed as endangered. It is also known as Mist Whorl Tail Iguana. A name which, I must admit, is much nicer than the one I baptized it with! This iguana is

not only endemic to Ecuador it is facing extinction. It has only been recorded in three of Ecuador's 22 provinces, and it has been seen very few times. The IUCN Red list has no record of it for the Imbabura Province, where I live.

Reptile diversity

You can expect rich diversity of species in a mega-diverse country like Ecuador, and such is the case for reptiles. The small Andean nation occupies only 0.055% of the world's land area, yet has more than 5% of the world's total number of species of reptile. As in other mega diverse countries, many species face extinction. In Ecuador's case, a depressing 273 of the country's 473 species are in danger of becoming extinct, thanks to human activity, or lack of thereof. Of the 473 reptiles, 131 are endemics, meaning they live nowhere else.

What a lizard can reveal

The fact that it's taken me four decades to see the Keeled Whorltail Iguana, in spite of my curiosity in all things natural, tells me a lot about the habitat where I live; and what is being lost. Beyond the obvious- that it may take decades for a cloud forest to reveal its true biological diversity, the finding should add urgency to the calls being made all over the world to stop the biodiversity crisis ravaging our planet.

The call is even more urgent here, given the promotion of large-scale mining at all costs. Those "costs" are unimaginable in biologically and culturally diverse places such as Intag, and will have negative consequences for generations to come. You could excuse a country lacking water resources and diversity of cultures and species for favoring mining. In Ecuador's case, it is unconscionable.

The Keeled Whorltail Iguana is just one species threatened by extinction; Ecuador has over one thousand in the same fraught boat. It's just a lizard you might say. Yet, its importance should not be lost simply because we are bias towards more cute and cuddly species. One lizard can reveal to us what is so tragically wrong with our way of looking at the world, and our place in it.

19 years of successful partnership with DECOIN

by Carlos Zorrilla,
Executive Director, DECOIN

Time flies when you are busy conserving forests and endangered wildlife, while simultaneously looking over your shoulder to keep out of reach of the powerful interests you rile up. In a nutshell, this how it has been the last nearly 24 years of DECOIN's work, the grass-roots organisation that I have led since its founding in 1995. An important part of our achievement is in no small part due to our 19 year collaboration with Rainforest Concern. That collaboration includes buying forests, funding scientific investigation and creating sustainable economic alternatives.



Decoin hosts a hydro workshop for the local community

In spite of what may be called the hurricane headwinds against our small organisation, we've helped conserve approximately 13,000 hectares of cloud forest in northwest Ecuador that are home to hundreds of endangered species. You read that correctly, it's not a typo. Hundreds of near-threatened, threatened, endangered and critically endangered plants and animals, all of which are on the IUCN's Red List. This includes a frog that was considered extinct by the IUCN, and rediscovered in 2016 in one of the community forests we purchased thanks to a project funded by Rainforest Concern. The scientists who found the frog were staying in a community ecological lodge that Rainforest Concern also helped fund.

Most of the hectares of primary and secondary forests that are being conserved by communities and local governments in Intag are the buffer area for the Cotacachi-Cayapas Ecological Reserve. This protected wilderness reserve is in the top 1% of the most biologically important areas of our planet. But the forty-one community watershed and forest reserves are not only protecting forests and endangered wildlife, but also thousands of inhabitants' drinking water. This is the key that makes it such a successful conservation initiative. The protected reserves that DECOIN has bought, we do not own; we have bought them for the communities as we believe wholeheartedly that communities need to be intimately involved in conservation to guarantee the area will be protected in the long run, especially in countries where I feel the rule of law is only an ideal; such as Ecuador.

The community reserve project which Rainforest Concern helped fund nearly 19 years ago, made it possible for us to purchase the first 900 hectares of forests and abandoned pastures. Those pastures have since been reforested with 75,000 trees. More important for communities than wildlife and trees, is water. The reserves are protecting the water sources for 30 communities. In all, thanks to Rainforest Concern and other organisations, we've bought another 10,000 hectares. In all, including the

Nebolina Bosque Protector, together we have been able to effectively protect over 13,000 hectares.

However, conservation without good environmental education is incomplete, which is why we reach out to hundreds of school-age children and adults with the message that the real value of Intag lies not hundreds of meters below the ground, but above it.

In my introduction I say that I have been "looking over my shoulder". The reason for this lies below these stunningly beautiful and biodiverse mountain forests, in the copper deposits that several governments and four transnational mining companies have been trying to develop since 1995. Because conservation directly conflicts with mining, over and over again DECOIN has found itself in the cross-hairs of the multinationals and governments; with death threats being the most benign of our concerns.

I am pleased to say that the work we do has been internationally recognised, last year I travelled to New York to receive the UN Development Programme's Equator Prize on behalf of DECOIN.



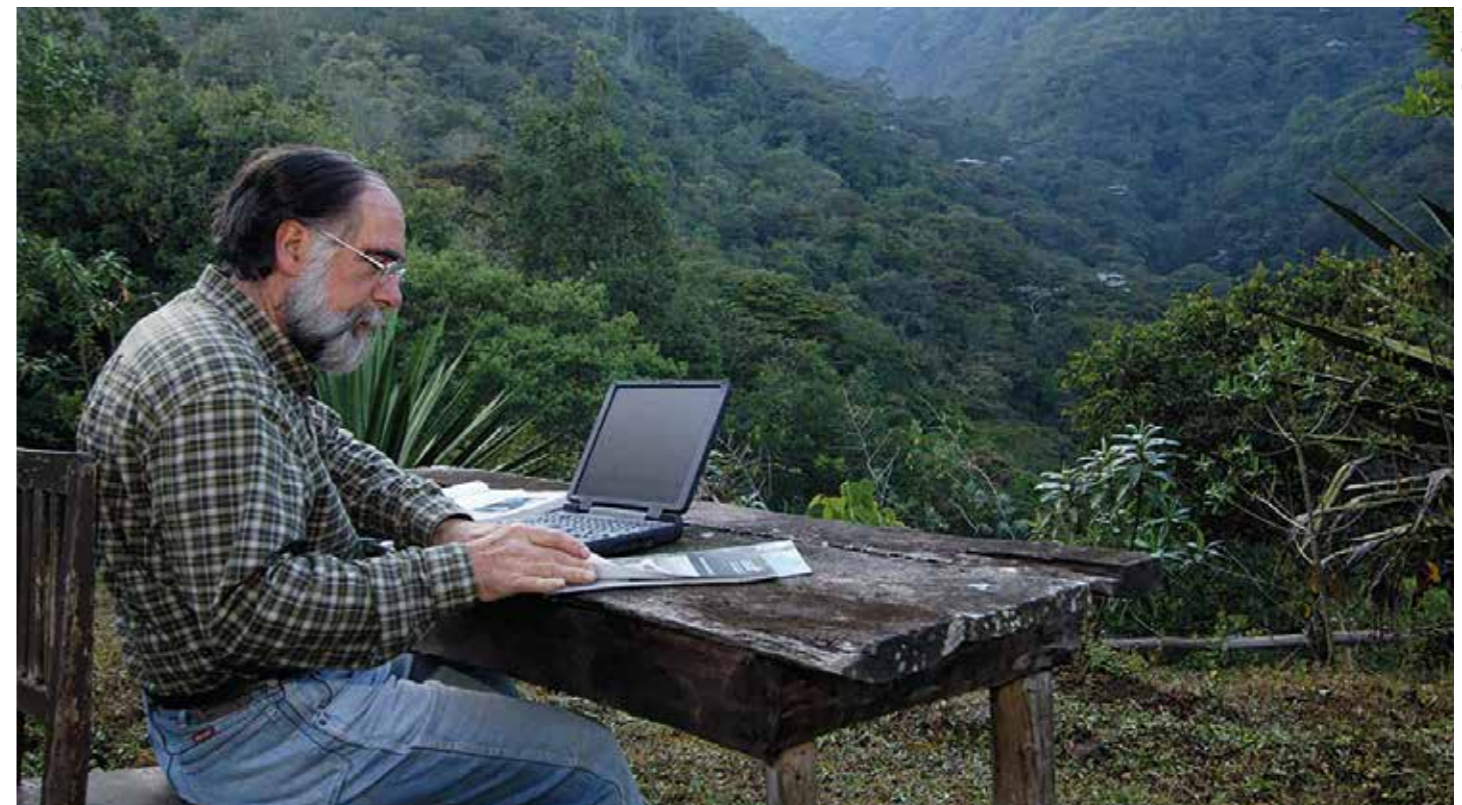
Community watershed reserves

The award was granted for work providing 'essential support to communities resisting mining interest, conserving over 12,000 hectares of Andean biodiversity and advancing alternative income livelihood options.

The fight to protect these forests and wildlife is far from over. Mining interests, such as the giant Anglo-Australian BHP Billiton and Chilean-

owned Codelco hold tens of thousands of hectares in mining concessions across most of Intag's forests, including all of the community reserves. It's like a David vs Goliath-on-steroids fight. But if we stand together, these areas and the magnificent wildlife within stand a chance.

Here's looking to the next 25 years of working with Rainforest Concern!



Carlos Zorrilla at work in the Intag cloud forests in 2005

Reflecting on Neblina Reserve's first 17 years

by Sonja Dillmann,
Project Manager, Neblina Reserve

For the last twenty years, Rainforest Concern has been working in the Intag region of north-west Ecuador to help conserve the unique and threatened cloud forests.

In addition to working with partners like DECOIN to protect watersheds and put in place alternative income strategies, in 2002, we first began to establish the Neblina Reserve, with the intention to act as part of a protected forest corridor linking the Cotacachi-Cayapas Ecological Reserve and private forest reserves through to Mindo. The reserve started with just 100 hectares, but is now one of the biggest private reserves in the area, totaling 2272 hectares and still growing. It provides valuable ecosystem services, and is a home to many threatened animal and plant species.

We continue to protect, manage and monitor the Neblina Reserve. A team of local forest guards regularly patrol the forest, keeping an eye out for signs of illegal encroachment as well as reporting back on direct sightings of species or indirect observations like scats or footprints.

This past year we started a new monitoring project funded by the PTES. The project aims to gain greater understanding and control of the factors affecting the decline of



Rare face to face encounter with spectacled bear

vertebrate species in the area, and focuses on the Andean (or spectacled) bear population in the Neblina Reserve using camera traps to monitor movements and numbers of individual bears. We chose the Andean bear as it is regarded as an umbrella species. These are species selected for

conservation making decisions since protecting them indirectly results in the protection of many other species within the same ecosystem.

Biologist Tashkin Meza and his team are leading the research. Coincidentally, Tashkin's family was originally from the Intag area, and Tashkin has fond memories spending time here during his childhood. He was especially pleased to hear that Rainforest Concern had bought land that once belonged to his family, so it is now protected as part of the Neblina Reserve.

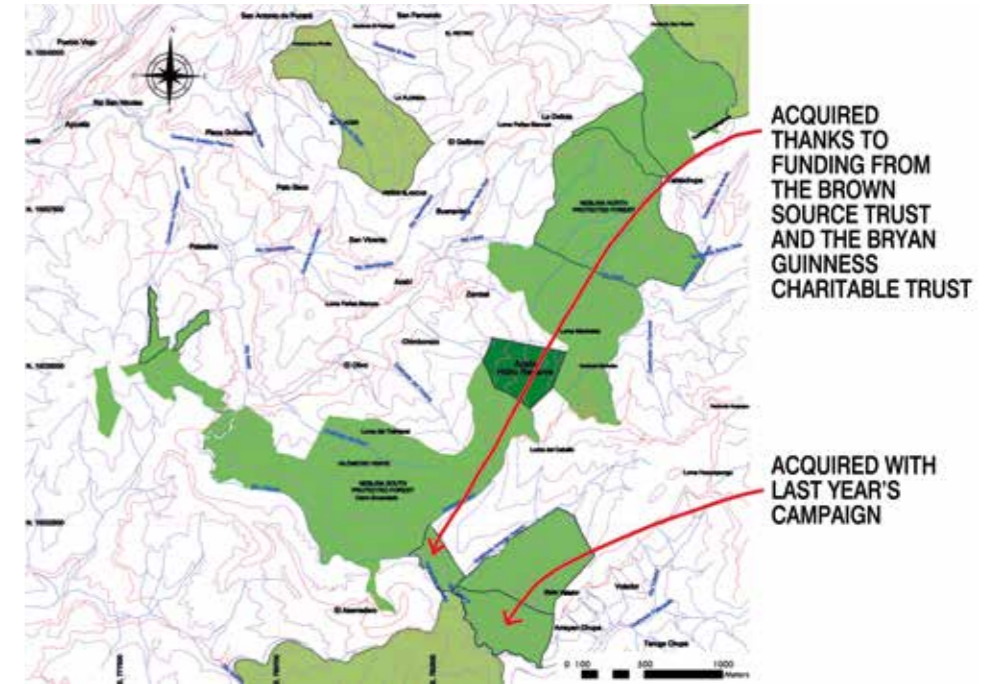
With this collaboration with Tashkin, we have further refined our monitoring of the reserve. The position of the camera traps is planned according to altitude, plant distribution, food availability and possible breeding places for important species like the Andean bear or puma. Already we have had sighting of a number of Andean bears as well as many other mammals and birds. Research like this is vital, as the data we gather allows us to make more informed management and conservation decisions, and to prioritise how to expand the reserve.

2018 also saw Rainforest Concern's lawyer, Mauricio Bustamante receive Neblina Reserve's second Declaration of Protected Forest Status (Bosque Protector) from Ecuador's Minister of the Environment. This brings the total area of Neblina legally recognised as protected forest to nearly 4,200 acres (1,700 hectares). Over 100 people attended the event.

In spite of this achievement, we are currently in the process of conducting the work needed to apply for even more stringent protection. This is a large task and includes in-depth cross species biodiversity surveys, and the creation of a revised management plan.

Copper mining concessions first began to be a threat to the cloud forests in this area around 20 years ago. One such threat was in Junin. With help from Rainforest Concern, and working with DECOIN, the community was able to purchase an extensive area of forest that became a strategic component against the mining threat that they faced. This community reserve started to generate alternative income possibilities for the families (e.g. ecotourism) and strengthened the community's commitment to defend both these important forests and their livelihoods.

We continue to work with DECOIN to help them purchase strategic watershed and forest reserves for local communities, as well as support them in their environmental education programme and alternative income generation initiatives.



Map of the Reserve in bright green and other protected areas in mid green

However, the threats to the forests are ever present and escalating. There are now renewed threats from more mining concessions in the area acquired by Codelco and BHP Billiton. We continue to pursue our policy of strengthening and extending the Neblina Reserve to protect the vulnerable cloud forests, working with biologists like Tashkin

and local government authorities to monitor and protect the many threatened and endemic species living there, and collaborating on conservation initiatives with DECOIN to try to protect the fragile cloud forests.

We have achieved so much for Neblina Reserve's first 20 years.



Oliver Whaley, David Harvey, Peter Joost and Sonja Dillmann at Neblina Reserve

The position of the camera traps is planned according to altitude, plant distribution, food availability and possible breeding places for important species like the spectacled bear and puma



With thanks to Rainforest Foods and John Brown Media for their long standing support of the Neblina Reserve

Oliver Whaley



Looking over the Andean dry forest of Peru

Conserving the dry forest in Lambayeque, Peru: A story of love and intrigue

by Oliver Whaley, Rainforest Concern

Imagine yourself for a moment, on a high rocky spur of the Andes a dragon tail slumbering on a forested plain stretching into a blue haze under a Pacific sunset...

The vertebrae are towering basalt cliffs with cactus-lined peaks above sheer walls that echo the cry of a savanna hawk. Huge rosy bromeliads jostle for ledge space with yellow *Puya* and purple flowering *Tillandsias*. You turn to gaze slowly over a mist of pale brown and ochres of *hualtaco*, *pasallo* and *cerecillo* – a dry season canopy with garlands of pale pink *Bougainvillea* framing the *Neoraimondia* cacti, as ants sip nectar beads from their flower buds waiting to open for bats. Stirring in the dusk, the bat colony lick each other's eyes amongst the lichen-clad rocks under your feet. A white-tailed jay shrieks a shrill repeat as a guan takes fright at a pampas cat melting stripes through wild papaya and twisted lianas. The cat hesitates to sniff a cave entrance formed over a million years ago during an earthquake. Now entwined by ancient fig roots, it is home to a family of dry forest spectacled bears; bedding down on dry ferns with bellies full of sapote. A light breath kisses your neck and you turn to feel the warmest

sift of katabatic wind, setting a flush of bluest *Jaquemontia* aquiver. The breeze is infused with the frankincense-like fragrance of *palo santo* amongst nocturnal scents of *sune* and *Haageocereus*. You feel... strangely at home, embraced in a timeless space, vast and billowing in peaceful exclusion, a world not as much as waiting for rain, or indeed for anything, but basking in moments amongst blood-warm rocks in the pure light of life...

You are standing amongst tropical dry forest in northern Peru – an ecosystem unlike any other, although ignored, exploited and already fragile, it is now highly threatened.

As the humid arms of rainforest stretch through the Andean cordillera and the sky-rivers fade through the *huancabamba* depression, seasonal dry forests revel in fungus-free aridity! Dry forests, are nothing new or spontaneous on an evolutionary scale, in fact quite the opposite, they are ancient and highly evolved. Research is revealing Neotropical dry forests as stable ecosystems of deep time far predating much rainforest. Andean rainforest has pulsed through wet and dry epochs driven by successive ice ages draining moisture, only to flood it

back with deglaciations. In fact, DNA analysis suggests that many rainforest trees have their ancestors in dry forest.

But what is dry forest, really? I hear often. My simple answer is: rainforest, but without the rainy bit (at least not so often). And for me personally, it is far more than an ecosystem, it is more akin to a nurse, a place that healed me. Not long after wandering into its warm embrace, looking to shake off a bunch of humid-loving, flesh-munching rainforest microbes, I was in love.

Unsurprisingly, dry forests of northern Peru have been subjected to the familiar, now globalised, 'space-for-reckless-monkey-to-live-and-grow-stuff' scenario of clearance for the sublime human capacity for agriculture (and population expansion) leaving them as the most threatened forests left on earth. But before you despair: as long as we conserve it now, dry forest has 'episodic' magic up its sleeve, and we find from fragments with good seed, a rich forest can be nurtured back and restored from relicts and colonised by its native species.

But have no doubt there is an ongoing 'problemita' – of the Peruvian massive understatement variety, as the dry forest biome, unlike rainforest, is also

superb for industrial agriculture. Expansion to supply insatiable global markets for nutrition, even from blueberries, is fast. Although a lifeline for millions, predictably only around 10% of dry forest remains, and as globalised *shift-stuff economics* destabilises everything, the young campesino is on the move; with or without walls to cross, families are upping sticks in search of work, sometimes to local industrial farms and often far migration.

Those that remain are still bonded to the forest, largely through age and experience, and these people need our help, helping them to help us, as they are *critically important to dry forest survival*. Often overlooked, rural communities are still connected to the landscape – they know where it can provide and when to be left. *Their* dry forest exists because of climate, not despite them. Now that climate and atmospheric change are, at last now incontrovertibly, requiring forest to adapt or die, the message is stark: if we can't nurture the forest back to support livelihoods again, its children will never return. The forest left unused is unprotected, it is lost to fires, illegal deforestation and land-grabs – natural regeneration processes are long gone with soil seed banks lost.



SBC/Rainforest Concern



SBC/Rainforest Concern



SBC/Rainforest Concern

Camera trap images from the dry forest reserve From top; pampas cat, spectacled bear, white-tailed deer



Oliver Whaley

The project involved many members of the local communities

So, let me take you for a last stroll – this time alongside a dry forest community. Most outsiders agree, that Peñeros are the *real* men (and women); generous and strong in every sense, scornful of urban corruption, honourable and looking up in admiration and maternal familiarity at every tree. Their realities are forged from the forest and four am starts, where most people's hardship is their good day, in a land where cattle stealing and terrifying land-grabs are part of life and death still, in Peru today.

So giddy up! Here we are with Don Blanco, Meque, Gualberto and Panchos' crew. We are off to survey a *jaguay* (an ancient Moche word for spring) buried in dry forest, where, they say, spectacled bears (*Tremarctos ornatus*) come to sleep making nests in the oasis fig trees. Everybody is ready, with hard jobs done before the sunrise. We purr out of the forest village, riding pillion on the famous Wanxins, the morning air uplifting as we glide past empty beehives and svelte forest loving zebu. You seem to float with the *chilalo's* elevating call over the golden morning pampa, swerving to avoid rocks and a hip wiggle overtaking of hard baked cow pat, only to dive gear-crunching, into a narrow goat track to breath yellow dust and two stroke fumes over warm rock. We are covering 20 km quickly to the mountain

foot, instead of a day walking. Our drivers' eyes are resolute, deep set beyond the piercing sun but glinting under fertilizer-brand caps. The *overo* branches tear at throttle breaking hands and *Yanquis* sandaled toes – Blanco and his Peñero men don't even wince. Why would they? This is a day out, after the previous back-breaking fencing with 1100 dead *Prosopis* posts, cladding six ping-tight strands of barbed wire for seven km to stop hired louts stealing land stealing cattle too. The Peñeros though, are sanguine; even about loosing 10 goats to a puma, recounting it all with flashing humour and not an iota of hatred. These are Moche warriors, and the forest is their friend. They fear only that their kids leave forever; 'he went to the city with a smile and came back only once with a huge shiny belt', I was told. And the women are tougher still, as they gather 100's of thousands of dry forest seeds and think nothing of four am starts and walking 10 km home in the dark.

Blanco and the Peñeros love dry forest as it once provided a bonanza of rich sweet algarroba pods. Today that has died away, but still the forest, with *sapote*, *overo* and *faique*, sustains livestock entirely from trees. This year, with the Rainforest Concern team in Peru, progress on conservation and restoration of dry forest has been

incredibly encouraging and full of amazement. By working with the Peruvian government bodies, we have reached agreement with the community to conserve about 4,500 hectares of lower slope Andean dry forest as a permanent reserve (you were standing there earlier), and to protect, restore and monitor the wildlife and *jaguays* so vital to its survival.

Amazement came to all of us, as working with partner scientists from Spectacled Bear Conservation – Peru (SBC) in the proposed reserve, we recorded a parade of threatened species using the dry forest springs, including a pair solitary eagles, pampas cat, puma, northern tamandua the arboreal anteater, white-tailed deer, king vulture as well as opossum and Sechuran fox and most wonderfully, exactly as told, several spectacled bear visiting from a unique dry forest group around the Laquipampa reserve.

The La Peña reserve (CC. San Francisco) area will create a magnificent corridor for wildlife, bridging two large watersheds and providing access to resources like the sapote fruit that the dry forest bear needs to survive. For dry forest restoration in and around the reserve, we found the perfect community-corporate partner in Ingleby Farms

& forests who, with a uniquely environmental vision for sustainable farming in the region, have helped us establish a second restoration centre where we have already propagated and developed seed storage for the majority of the lowland dry forest species. This is the first forest restoration centre in northern Peru and we are building world-class local capacity with exchange training from Chilean Banco Base de Semillas (INIA) and Airpots® propagation systems for larger tree restoration. The Royal Botanic Garden, Edinburgh (under the new MOU with Rainforest Concern) provided horticultural training and dry forest, and quantitative monitoring was

completed with drone specialists from Kew Gardens. Alongside our partner NGO, ANIA Children's land, we supported and trained Túcume museum to produce dry forest trees and useful plants with local schools, and here the culture of Moche is being resuscitated to the 21st century as we produce the first dry forest ethnobotany book for the area to support our restoration work and publications.

Despite nefarious efforts to steal their land, the valiant Peñeros have resisted and held out to economic pressure. They are willing to take a conservation and restoration journey, not only to protect and reforest their land, but to

share the dry forest with pampas cats, eagles, bears cubs and the occasional goat-borrowing puma. We have found a future in dry forest by showing how it can be done when we all work together. Rainforest Concern and our partners stand with the Peñeros for their children children's; we hope the partnership will continue until old sapote and algarrobo trees thrive again around old blueberry farms that preserve and protect their watershed dry forest communities – addressing the bare facts and water!

We are extremely grateful to the Planet Foundation, who, over the last two years have made this project possible.

The mysterious polylepis forests of Peru

by Constantino Auccha Chutas, President of ECOAN

In the high ranges of the Andes you can find remnants of ancient polylepis forests, often located at the foot of the snowy peaks, between 3,800 to 5,300 metres above sea level.

The polylepis forests once dominated the high Andes, but since pre-Inca times human actions have resulted in the destruction of 90% of the forests. The remaining fragments of these Andean forests provide vital ecosystem services: by reducing and preventing soil erosion, they help to retain nutrients and sediments; they are a source of water in the dry season, as water retained within the mosses is gradually discharged; they regenerate agricultural land through organic decomposition; and create a microclimate providing a habitat for many species. In the Peruvian polylepis forests, bird species include the Endangered ash-breasted tit-tyrant and the Endangered white-browed tit-spinetail. Plants include forest species such as the pungent smelling chachacomo and the unca, listed as Vulnerable by the IUCN, its presence indicates an area of mature vegetation.

Along with fellow graduates of the National University of Cusco, I decided to create the Andean Ecosystems Association (ECOAN) to protect Andean ecosystems, and specifically to conserve the *Polylepis* forests and restore and increase habitats for wildlife. Since then, in alliance with the American Bird Conservancy (ABC) and other organisations, we have worked to protect these ecosystems with the help of the local community.

In 2003, we met Martin Stanley and through him, Rainforest Concern. For almost a decade, Rainforest Concern have helped us to maintain constant reforestation activity in the Patacancha basin in the province of Ollantaytambo, Cusco.

After the worrying news of the impact of climate change at the 2014 COP20 in Peru, ECOAN was inspired to create the 'Queña Raymis', a festival in which local communities and volunteers plant thousands of *Polylepis* trees in just one day. In the past few years, this activity has become a huge party in which everyone can see the benefits of a healthy environment for our planet.



Planting polylepis at high altitude

In July 2018, the Andean initiative of Polylepis Forests, involving Colombia, Ecuador, Bolivia, Argentina, Chile and Peru was created to unite those working towards habitat restoration and protection of threatened species across the Andes mountain range. The international initiative aims to minimise the impact of climate change and offer sources of alternative income to local communities. It also aims to acquire indices for biodiversity, physical and social mapping, water and carbon. This will provide the necessary tools to monitor the much-needed sustainability of these projects.

A step forward for Urpiano turtle conservation

by Carlos Fernandez, Manager, Urpiano beach project

It was 1992 when I first met Peter Bennett in the Osa Peninsula, on the south Pacific coast of Costa Rica. At that time I had recently started to work for the Endangered Wildlife Trust, a British charity protecting sea turtles in Costa Rica and Panama. Shortly after this meeting, Peter established Rainforest Concern, a charity that, in time became an extremely important supporter of EWT's sea turtle protection projects over many years.



Leatherback turtle returning to the ocean having laid her precious eggs



Rainforest Concern

Hala Bennett about to release a nursery hatchling

In 2015, Peter and I embarked on a new chapter in the protection of sea turtles.

Urpiano beach is located on the northern Caribbean coast of Costa Rica, three kilometres south of the Pacuare Nature Reserve. It is a strip, four and a half kilometres long, located between the Caribbean Sea at the east and the Tortuguero Canal at the west. From March to June every year leatherback sea turtles (*dermochely coriácea*) come to nest to this area. Additionally green turtles come to nest in less numbers as well as the hawksbill turtles.

Unlike other nearby beaches, Urpiano beach had never been protected, and historically has been known as a place where poachers and hunters come to poach leatherback turtle eggs and kill green and hawksbill turtles. The International Union for the Conservation of Nature (IUCN) lists the turtles as Vulnerable with numbers declining. Threats to it include; the utilisation of turtle eggs for human use, the development of coastal environments, pollution and pathogens, climate change, and fishing by-catch.

In 2015 Peter and I visited Urpiano beach and talked about the urgent need to protect the leatherback turtles that spawn there. We also had the opportunity to speak with the Spanish biologist Bárbara Barrera.

That year, Bárbara and her partner Johnny were contracted to monitor turtle activity at Urpiano beach in order to have more and accurate information about the importance of the beach and the number of nests.

During the 2015 nesting season, we found that there was a higher density of leatherback nests than at the Pacuare Nature Reserve, but of the Urpiano nests, over 98% were poached. By comparison, the nearby Pacuare Nature Reserve had 0% poaching. The findings of this initial survey showed the great importance of Urpiano beach for nesting turtles, and the critical state of this population due to the high percentage of poaching.

Since then Rainforest Concern and The Black Rhino Foundation have given their support to a local group led by Bárbara Barrera and Johnny Hurtado. Bárbara, Johnny and their team have worked hard trying to save as many nests as possible, and steadily, we are seeing the project grow. Each year we are succeeding in increasing the numbers of turtle nests saved.



Carlos Fernandez

The newly completed turtle hatchery



Carlos Fernandez

Releasing hatchlings at Urpiano beach

Each year a hatchery is built at the little Urpiano station, and the project trains and employs local people and volunteers to work as part of the team. Every night during the season, they patrol the beach, trying to collect the nests before poachers do, and then relocating them to the safety of a guarded hatchery. This hatchery is manned 24 hours a day to stop poachers from stealing the nests.

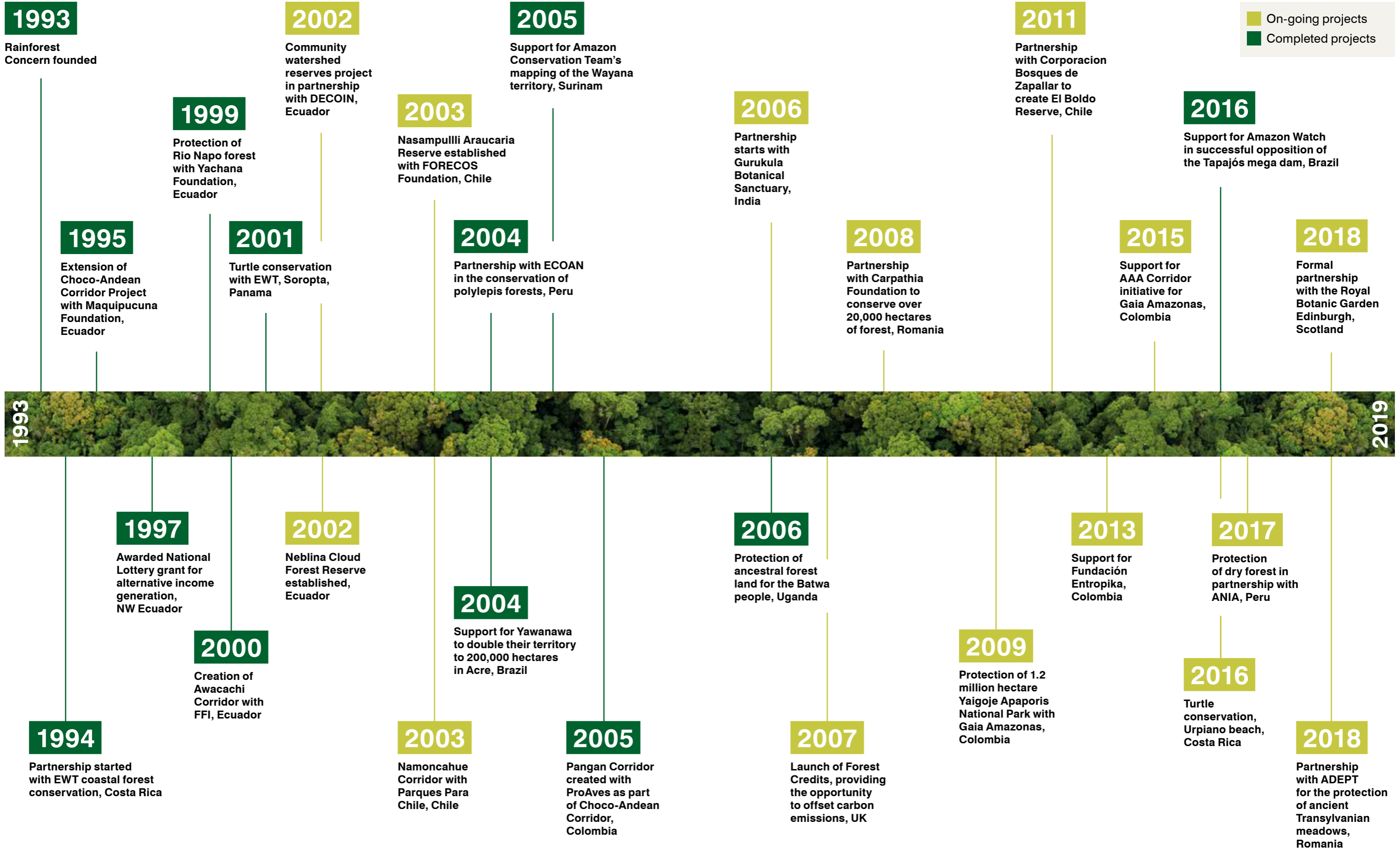
In 2015, 1.83% of nests were saved. We set ourselves a realistic target of

increasing this figure to 20% by 2018, but commitment and perseverance paid off and team succeeded in beating this target by 2017, when they succeeded in saving 22.8% of nests. By the end of the 2018 season, the figure was even better: the team saved 166 nests, or almost 28% of all the nests. This is a real success considering that for many years prior to the project, nearly every nest on the beach was poached. As a result of the hard work carried out by Barbara and her team, thousands of baby turtles are now hatching and going to the sea from Urpiano beach.

Looking to the future, it is vitally important to continue working with Rainforest Concern to protect the turtles of Urpiano beach. The IUCN states that the Caribbean leatherback population is dependent on the success of current conservation to protect the turtles, their offspring and their habitats. We cannot afford to be complacent.

As Rainforest Concern reaches it's 25th anniversary, the story of its long history of protecting turtles, including the newest endeavours at Urpiano beach, is just one example of the constancy, dedication and support it gives to community groups and to protecting the environment.

Rainforest Concern through the years



Creating Europe's most important wilderness reserve

by Christoph Promberger, Founder, Fundatia Conservation Carpathia

Another year has passed and once again Foundation Conservation Carpathia has made great progress towards creating a new, world-class wilderness reserve in the Făgăras Mountains of Romania; a reserve that we hope will, in time, become one of the most important national parks in Europe.



The numbers of Lynx have increased since the creation of the reserve

Our most significant achievements this year: the purchase of over 3,337 hectares, of which 1,000 were almost virgin forests in the south-central Făgăras Mountains as well as 900 hectares in Leaota; the leasing of a second hunting concession in the lower Dâmbovița Valley; and the building of wildlife hides in our project area, represent everything FCC stands for:

- Protecting the forests
- Managing wildlife, with the conservation of wildlife and the resolution of human-wildlife conflicts as a top priority
- Developing a new, non-extractive economy for local communities

Yet, this year we achieved so much more than this. We also: planted 400,000 saplings; began large-scale monitoring of wolves, bears, and lynx; took the decision to start to reintroduce bison; started to develop a common strategy for protected areas with other conservation NGOs in Romania; and established a discussion platform between the Romanian timber industry and conservation NGOs. And we now protect over 21,000 hectares.

The harsh winters of 2017 saw the price of firewood rise. We therefore intensified forest watch activities to monitor and prevent the illegal removal of trees and wood. In total, 142m³ of wood was taken, of which we found and confiscated 78m³.

However, FCC are all too aware of the need to balance the needs of the community with the planet's need for

clean air, water, a stable soil and a stable climate. Therefore, to help the local people through the cold season, we provided naturally fallen beech wood to the disadvantaged in the local community and also subsidised firewood for members of the Rucăr Landowners Association with incomes below subsistence level.

Trophy hunting is a major source of income for hunting associations in Romania. In Africa trophy hunting has had a positive effect on wildlife conservation as a way of bringing in much needed income. However, in the mountains of Romania, rural communities still make a living from livestock, not trophy hunting. We therefore believe that sustainable wildlife management must focus on decreasing and controlling conflicts between wildlife and local communities, rather than making money through trophy hunting.

FCC has been developing a programme to showcase how we think wildlife management can work.

To mitigate human/wildlife conflict, in the summer we set up electric fences to provide night-time protection of sheep from large carnivores. In another area farmers have had problems with one particular brown bear getting into stables and attacking livestock.

Here FCC has been focussing on establishing adequate livestock protection and instigating aversive conditioning measures. Our next steps will be to equip and train our wardens, alongside the gendarmerie, on controlling conflicts before or immediately as they occur. To involve the larger community in our work, FCC hosted workshops for 800 school children, trained junior rangers, and organised wildlife trails.

Since 2011 we have had the lease of a 13,500 ha hunting concession. When we first acquired the concession wildlife density within the area was very low, so we instigated a no-hunting and anti-poaching policy to increase numbers of red deer, wild boar, chamois and bears. We after trying to acquire a second hunting concession of 10,700 ha in 2013, we finally successfully acquired the concession in 2017. This is extremely significant, as the two areas form a seasonal corridor with wildlife from the first area migrating to the valleys of the second area. This means that FCC can control and protect both the summer and winter habitats. With the neighbouring Piatra Craiului National Park, 36,000 ha are protected from trophy hunting. We intend to acquire more hunting concessions if the opportunity arises. We now monitor over 100,600 ha using camera traps, sign surveys,

and genetic analysis in order to estimate wolf, bear and lynx populations. A new mobile phone app allows inputting of sample data, which means instant data collection and data transparency.

We also hope to generate wider interest in the area and help the local economy through eco-tourism. Romania has the biggest population of large carnivores in Europe but does not exploit this asset. FCC therefore started an eco-tourism programme. We have built wildlife hides and established partnerships with local guesthouses.

The past year has also seen progress towards shared strategies for forest management for the future. Direct discussions with timber industry and conservation NGOs had completely ceased, but FCC re-initiated meetings between the two groups, and now all parties have agreed to keep talking.

Next year we will continue to build on our past achievements. We will start to prepare for the reintroduction of beaver and bison; organising permits, deciding release sites, building release enclosures and sourcing release animals. We hope to purchase another 2,000 ha of forest and alpine grasslands, restore 10 ha of alder gallery, convert 50 ha of spruce monoculture into mixed forest, and replant 120 ha of clear-cut forest.

There is still much to do before we can create a world class National Park at Făgăras: we know that it will take time. The amazing success of our colleagues from Tompkins Conservation in establishing a series of new National Parks in Chile shows that such ambitions need both perseverance and funds. Doug Tompkins purchased the land at Pumalin 25 years before the Chilean government accepted it as a National Park.

However, FCC is equal to this challenge. Our promise for the future is to persevere; to continue to work hard to create Europe's most important National Park in the Făgăras Mountains, to restore and protect the entire ecosystem and to help local people have a better life.



A ranger on patrol

Bob Gibbons



About 40% of the landscape of the Târnava Mare area is woodland

Transylvania's farmed landscapes and why they are so important for biodiversity

by Nathaniel Page, Director, Fundatia ADEPT Transilvania

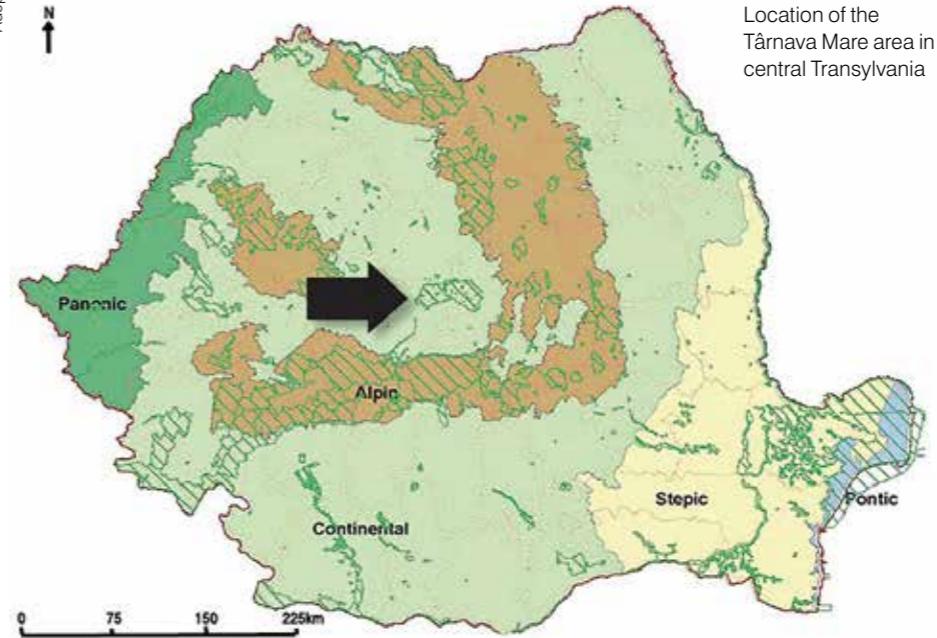
In 2018 Rainforest Concern started working with Fundatia ADEPT Transilvania, a Romanian charity which, for 15 years, has been protecting the high biodiversity farmed landscapes of Transylvania in partnership with the small farming communities that created them over hundreds of years, and still maintain them today.

The traditional farmed landscapes of the Târnava Mare area of Transylvania are a mosaic of wildflower-rich pastures and meadows, old-growth forests, gallery woodland, wood pasture and small arable parcels. Variety, connectivity and a host of dynamic habitat boundaries are favourable for supporting a wide range of wild species, many of them rare and threatened in Europe.

These landscapes are important because of their biodiversity and rich ecosystem services (such as clean air, water retention, flood prevention, pollination, soil quality and carbon sequestration). They are also a model of how humans and nature can exist in harmony.

It is surprising to many people that such landscape-scale high biodiversity, linked to poor and vulnerable small-scale farming communities, is present in Europe today. Most families in Transylvania live on semi-subsistence farming, and nine out of ten farms are smaller than five hectares. Traditional methods of grazing and haymaking have led to the development of important, species-rich grasslands. Studies have shown that habitat and species diversity often increases as a result of gentle human interference – but decreases with intensification.

Adept



Location of the Târnava Mare area in central Transylvania

This complex landscape, still in full ecological 'working order', can only be protected by working with the local farming communities; not by trying to keep them in medieval management and living conditions, but by using low-impact technology and modern marketing so that nature and its local guardians, the farmers, both prosper.

Low intensity agriculture has allowed the survival of old growth forest, woodland still coppiced for firewood, and many galleries of trees along streams and isolated trees in pasture.

These habitats offer connectivity for mammals, and nesting and hunting perches for birds of prey.

So, although Transylvania's lowland farmed landscapes are influenced by humans, they contain biodiversity of European and global importance. These landscapes and communities are under immediate threat from land grabbing by outside investors who will abandon nature-friendly management, and disenfranchise the local communities who created these precious landscapes.

Jan Hanspach



Lizards, snakes and insects benefit from a micro-mosaic of land management which allows them to move short distances to find refuge from grazing

ADEPT works to improve the understanding and protection of these landscapes. This includes scientific assessments and inventories, advisory services and training for farmers and farmer associations to improve grassland management and thereby benefit both production and habitat conservation. The project also requires innovative management in processing and marketing products and services so the communities are properly rewarded and have an incentive to continue. We also plan to develop a nature school and visitor centre, in the Angofa valley, to bring thousands of local schoolchildren into contact with nature, and to explain the complex landscape to visitors.

ADEPT is delighted to start working in partnership with Rainforest Concern. We will no longer be working on grasslands alone; Rainforest Concern will bring welcome new knowledge of forest conservation to the landscape-scale conservation approach, and we will be developing a project to maintain landscape structure. Forests and natural and semi-natural grasslands are the two habitat groups with the highest percentage of anthropogenic loss worldwide. Over 90% of lowland hay meadows have been lost in western Europe, but forests and grasslands need to be conserved together because in this part of the world many species depend on the interaction between the two habitats.

Rainforest Concern's involvement and expertise will allow us to use a more holistic approach that recognises how forest, isolated trees, small mown and arable patches, and broad grazed pastures and scrub, all work together to provide a range of habitats that offer sanctuary for many species lost elsewhere in Europe. We hope that the area can also be a source from which western Europe could be repopulated with species as their habitats become better protected.

Watch this space for further reports from a lesser known natural treasure in Europe, which depends on continued gentle management for its survival.

Looking to the future in the Western Ghats

by Supi Seshan, Director,
Gurukula Botanical Sanctuary

The world in which each of us lives does not necessarily yield the world in which we all live together. Where does your world end and mine begin?

I live in a world grown from tall trees, tiny tender plants and a scintillating diversity of creatures, which is covered in cloud and drenched in rain for a greater part of the year. Out of my window, I see the Banasuramala mountain gracing the southern horizon, rising over 6,000 feet, and rolling forests to the west. I see the rise of the shola grasslands of the Brahmagiris in the north-east. The rounded hills and snaking streams, each born of millions of seeps from tree roots, making their way east. My world is also full of ferns. I frequently awaken to the sound of heavy wind blowing through a forest canopy.

I believe it's possible that soon, within my lifetime, this rain-drenched world, at the edge of a forest in the mountains of southern India, might not be here anymore. Mighty forces are at work. So, I must modify my first sentence. The world in which I live today doesn't necessarily yield the world in which I have lived all these years, nor the world that is to come.

When people ask me about the Western Ghats, the mountain biome in south India where I live and work, I often wonder, which Western Ghats

are they interested in? The environmental hotspot with waterfalls, species — rich forests, and cold heights, full of frogs, orchids and butterflies, or the decimated 93 per cent? The one featured in coffee-table books and surround-sound drone-filmed footage, or the green deserts



On the Nilgiri plateau

and gouged-open slopes, and the dammed, desecrated rivers that don't reach the ocean? The diverse indigenous and traditional peoples, or the diaspora doing menial work in the Gulf? Do they want to know about how rich and lush and full of plants and animals it still is or about the species that are going extinct, owing to Ayurvedic pharmaceuticals, climate change, highways, resorts, mega projects and plantations? Do they want to know about how these mountains with their forests create water, or about how their waters are stolen?

There are so many perspectives on this small mountain biome, with its rivers supporting some 245 million people — from wanting them up, to wanting them down, the need to conserve them and the greed to destroy them. The thoughtlessness and travesties behind the ports, airports, railways, highways, neutrino projects and tech parks, and the thoughtfulness and sage wisdom of the many indigenous and traditional peoples. I could talk about CK Janu, a brave Adiya tribal woman, and the Muthanga struggles she led to reclaim the forest, or the colonial plantation history that alienated peoples from the land, the fickle policies by successive

governments of independent India which worsened the alienation. About emerald-green tea plantations offering scenic backdrops to honeymooners taking selfies, or tea plantations that want to be forests, with ancient regenerative secrets fibrillating impatiently between their roots.

Sometimes each of our individual worlds come together. I first met Peter Bennett in 2006 after I received an award from the Whitley Fund for Nature. Six months later, Rainforest Concern helped Gurukula Botanical Sanctuary purchase a crucial piece of land in a tiny corridor of riparian vegetation linking other lands previously protected by us and under recovery. Rainforest Concern recognised the urgency of our mission and cause (the preservation of endangered plant species in a global biodiversity hotspot as well as recovering habitat and working with communities).

The work of the Gurukula Botanical Sanctuary is different from the other projects that Peter has championed in one key respect: it focuses on plant conservation through cultivation, and habitat restoration through "gardening back the biosphere".

The recognition that most of our biodiversity hotspot has been decimated and species erosion is rampant has shaped the work of the Sanctuary in its locale, working with local women in the desperate bid to save species from total extinction.

Since those early days, Gurukula Botanical Sanctuary and Rainforest Concern have shared a deep sense of solidarity and common cause, and Rainforest Concern has continued to support us. There is a feeling of partnership and mutual respect; we are each doing our role in a tough battle. And our worlds are still growing together into the future, spreading tendrils and roots, as my colleagues and I take our first steps towards fulfilling another vision — establishing a second Gurukula Botanical Sanctuary in the Western Ghats. In the south of the Western Ghats, above



Plant conservationist Laly Joseph at work in the Sanctuary

the tropical forests, are bioregions influenced by the colder temperatures of higher altitudes and stronger winds; one such region is the Shola forest and grassland of the Nilgiri Plateau, at 2,000 metres above sea level. This is one of the most threatened ecosystems of the Western Ghats. What remains of these unique stunted tropical mountain forest and grasslands are home to 1,000 native plant species and to many other rare and endemic species; threatened mammals such as the tiger, Nilgiri tahr and the Nilgiri langur.



Hiking with students near Gurukula Botanical Sanctuary

With funds from the Planet Foundation, this year Rainforest Concern have helped to kick start the critical initial set up and establishment of GBS II on the Nilgiri Plateau. Already we have begun looking at land to buy upon which we will build a small base, and start conservation measures. The establishment of Gurukula Botanical Sanctuary II will be a long-term project. The original Sanctuary was set up 40 years ago, and gradually expanded both in land and scope over that time. With our second base we will use a similar model, starting the project at a small scale, and slowly unfolding and expanding over the next 20 years. In time, GBS II, like its progenitor, will become a centre of excellence and knowledge sharing, and will work to train the next generation of ecosystem gardeners.

It is a big idea, and will require imagination, passion, endurance and commitment, but I am looking forward to this new journey.

I do love my home in these mountains. We all do — the frogs, the elephants, the rivers, the humans and the trees. I hope that like us, like Rainforest Concern, we pass on this love to others, in the slim, yet bright, shining hope that they too find communion in all that is vital, beautiful and real, then roll up their sleeves and get to work, protect what needs to be protected, fight what needs to be fought, and leave alone what needs to be urgently left alone. So, I modify my first sentence. The world in which we live necessarily yields the world that is to come.

The Nasampulli Reserve: 17 years working for conservation of araucaria forests in southern Chile

by Enrique Cruz and Professor Antonio Lara, Forecos Foundation

Located in the lake district of southern Chile, Nasampulli Reserve began in 1998 when a group of Chileans and two colleagues from the Royal Botanic Garden Edinburgh (RBGE) created a society to purchase and conserve 160 hectares of araucaria (monkey puzzle tree) and nothofagus beech forest, to the north of Lake Caburga. Martin Gardner, one of the two from the RBGE, is now a trustee of Rainforest Concern.



The Rainforest Concern team at the refuge, Nasampulli Reserve, February 2019

In 2002, Martin met Peter Bennett and told him about the society and the urgent need to extend the protected forest area. As a result of this meeting, and after several visits to the region, it decided this should become a new project for Rainforest Concern. Work began to create the reserve, and to expand it through the acquisition of more land over the years. Nasampulli Reserve now totals almost 1,650 hectares, and is still being extended: in 2017 Rainforest Concern acquired another 220 hectares and a further 160 hectares in 2018.

The reserve is stunningly beautiful. Perched high above Lake Carburga, it is possible to see both the Llaima and Villarica volcanoes and Conguillo National Park.

Prof. Antonio Lara led the early years of the project working with forest ecologists from Universidad Austral de Chile. Fundación Forecos, a Chilean NGO and land trust, has been in charge of the administration, management and protection of the reserve since 2008, in an effective and enthusiastic collaboration with Rainforest Concern. Thirty years ago the area had been selectively logged and cleared areas grazed by cattle. Seventeen years of protection has greatly improved its conservation condition and seen recovery from this damage.

We have developed the infrastructure to support the reserve, including a comfortable cabin and forest trails.

Since 1998 the project has encompassed conservation, research and education. We have researched forest regeneration and dynamics, botany, and the impact of introduced wild boar. Weather and fluviometric stations are providing Professor Lara's team with information about the forest's ecosystem services and climate change. These latter two studies have been made possible through the collaboration between the Centre for Climate and Resilience Research (CR2) and Universidad Austral de Chile. The intention is now to encourage wider research from other institutions, particularly the Royal Botanic Garden Edinburgh, with whom Rainforest Concern recently signed a formal partnership.

The reserve has provided Engineering of Natural Resources and Conservation students with education and training opportunities in the form of internships or undergraduate theses focused on the reserve. Interns and rangers are key to the maintenance of the reserve. Their hard work has included the improvement of the cabin and walking trails, the repair of wooden bridges, ecological restoration of old roads, and recently the installation of solar electricity at the cabin.

Dr. Marco Cortés, Nasampulli Reserve's manager since 2012, is in charge of conservation work, building relationships with neighbours, guiding students, reconnoitering new land for possible purchase, collecting seeds and planting, reducing erosion and bringing back native forest.

Over time, we have realised that, in addition to conserving native forests, the reserve provides a critical habitat to many species of fauna identified in the IUCN Red list. These include: the Magellanic woodpecker, slender-billed parakeet, the small pudu deer, the guigna (the smallest wildcat in the Americas), puma, Darwin's frog and the monito del monte, a small marsupial.



The northern part of the Nasampulli Reserve with its volcanic lake

In recent years, araucaria ecosystems have been critically affected by human-induced wildfires, which have destroyed 8,900 hectares of forest in the region. These fires, along with the impact of a ten-year drought in southern Chile, could be the main factor causing physiological stress in the trees, leaving them vulnerable to fungi and bacteria. Recent data from the Chilean Forest Service, estimates that 98.3% of araucaria trees in Chile are affected.

Fortunately, Nasampulli's araucarias do not appear to be affected to the same extent, possibly because rain and snowfall in the reserve is high compared to other areas. Thankfully, we have had no wildfires although we must remain alert to this serious threat.

Further encouraging news is the recent announcement from the Chilean Government that Nasampulli's neighbour, the "Reserva Nacional Villarrica" is changing conservation category from National Reserve to National Park, meaning increased legal protection of 17,000 hectares of forests, glaciers and mountains.

For the future, we are planning to monitor how climate change affects Nasampulli's forests. Climate change, wildfires and the impact of exotic

species on habitat are key reasons to continue the private conservation of araucaria forests.

The success of Rainforest Concern's Nasampulli Reserve owes much to the many people who have contributed to this project including Marco Cortés, Montserrat Lara, and Marcia Millas from Forecos Foundation, Claudia Sutulov, Cristian Little, among others from Sociedad Trafampulli, Cristian Echeverria, Fernando Bustos, David Lobos from Universidad Austral de Valdivia and Martin Gardner from the RBG Edinburgh. Also, Nasampulli's rangers José Miguel Riquelme and Esteban Arias, and Nasampulli's neighbours, Gregorio Candia along with Joel Balboa and his family, and all the interns and students who have spent time in Nasampulli.

We are extremely grateful to Rainforest Concern in recognising the importance of creating this Reserve and its determination to enlarge it over the past 17 years, as well as its enthusiastic donors, who have supported the project and made Nasampulli a reality, and in particular the Planet Foundation.

We look forward to the next 20 years in the life of Nasampulli's forest and its extraordinary wildlife.

Nine years protecting the fragile remnant forests of central Chile

by Denis Astoreca and Carolina Brown, CBZ

The Zapallar forest corridor is one of the only remaining examples of a Mediterranean type coastal habitat, a living remnant of a vast ecosystem that dominated Chile's central region for centuries. It is not only a place of extraordinary biodiversity but also one with high levels of endemism.

However, rising popularity and expansion of the neighbouring villages of Zapallar and Cachagua in Chile's central coast, cattle, the introduction of exotic plant species such as *Pittosporum undulatum* and the inevitable pressure from urban developers are threatening the integrity and conservation of this valuable habitat.

Although the Zapallar forests were known and cherished by locals for generations, there was no official initiative to protect them. Furthermore, the lands comprising the forests were owned by different people, which entailed an additional complication. During the early 90s Peter Bennett, Director of Rainforest Concern, was motivated to visit the area thanks to the research the Royal Botanic Garden Edinburgh had conducted in the forest, which deemed this habitat as a biodiversity hotspot.

This visit was the first step towards recognising the importance of this forest and its crucial ecological value. Community leaders began to realise something should be done to protect it.

An opportunity to do so came in 2003 when faced with the possibility of a massive real estate project in one of the properties of the corridor. The mayor at the time organized a referendum which resulted in overwhelming support from the community in favour of protecting the forest.

Motivated by Rainforest Concern's initial vision and support, a group of locals formed and eventually founded Corporación Bosques de Zapallar (CBZ) in 2009. CBZ is a non profit organisation dedicated to the conservation of the Mediterranean forest of Zapallar and its surroundings. Meanwhile, the land where the real-estate project was supposed to be built was acquired by a group of residents who entrusted CBZ with the conservation of 72 hectares of forest in 2010. It has since been known as Parque El Bordo and has been open to the public for 8 years.

In 2011 Rainforest Concern generously donated funds to commission a Master Plan for Parque El Bordo, a comprehensive study of its vegetation, threats and challenges which also included the design of basic infrastructure and three trails which visitors can nowadays enjoy.

In 2017 an agreement was signed between the Municipality and CBZ to expand the educational programme for schoolchildren in the area. Almost 500 students and their teachers have

visited the park in the last 12 months. CBZ was also among the first organisations in Chile to secure the conservation of land with a Derecho Real de Conservación (DRC) agreement. DRC is a new law approved by the Chilean senate in 2016 which recognises the owner's right to use his land, or part of it, for conservation in perpetuity and state so in a legally binding contract.

CBZ has set an example and motivated other landowners in the community to join forces and participate in conservation. Visiting the park and walking into the forest has become an attractive activity among residents and their families in a town where the beach used to be its sole appeal.

As winter gives way to spring in the southern hemisphere, a new season begins with high hopes and expectations. CBZ is currently working on an conservation agreement with the owners of La Judea, a property located at the eastern end of the corridor. This agreement will protect 185 hectares of Zapallar forests and will hopefully inspire other owners in the areas to do the same.



Some of the CBZ team: Carmen Rosa Ringeling, Carolina Brown, Frederico Ringeling and Guillermo Morales

A personal perspective

by Martin Stanley

Looking back on Rainforest Concern's 25 years of existence, I felt that those reading this magazine might be interested in why I have helped fund their work for over 20 years.

In 1995 I set up the Holly Hill Trust a small foundation to support wildlife conservation projects and environmental education. Soon after, I met Peter Bennett and decided to find out more about Rainforest Concern, and visited their projects in Ecuador and Costa Rica.

There, I witnessed first-hand the complications of buying and protecting forested land. I also saw that there was a need to build capacity at Rainforest Concern, which was a very low-cost organisation. Very often the most valuable donations for charities are for unrestricted funding which allow flexibility, so I decided to support core costs and other activities like community and education projects.

I soon recognised that biodiversity in tropical Latin America is far greater than in UK, that local salaries are less, and there are more threats from activities such as mining, cattle ranching, palm oil plantations and illegal logging. Well-run projects in developing countries can achieve a lot more biodiversity protection compared to those in the UK, but there are certainly greater risks for the donor. With this in mind I decided to support some young projects. These included Rainforest Concern's partner DECOIN's cloud forest watershed project, some legal work, with



Abra Malaga-Cusco

student expeditions, PhD research and a community woodlands project in Peru. Despite the risks, the projects all produced positive results and expanded into other areas.

Taking some of these examples; DECOIN's watershed project protected fresh water supply by purchasing community forest reserves along streams for protection and organising local communities to plant native trees along the rivers above the villages. This project has helped bring back water supply in the dry season for local communities, and the project has been extended to cover a larger area.

The area was also threatened by an open-cast copper mining project of Canadian Ascendant, which the local communities opposed. I funded advocacy work in Ecuador and Canada to challenge, amongst other things, the environmental impact assessment which had not conformed to the Ecuadorian government's regulations. Eventually the Ecuadorian government suspended the project.

The mining project would have caused huge environmental damage in a rare and fragile cloud forest region, as well as causing social problems in nearby villages. Sadly, the problem has not disappeared but intensified with current threats from the Australian BHP Billiton and the Chilean Codelco mining companies.

Another Rainforest Concern partner project I assisted was a community owned ecotourism project, Santa Lucia, near the Maquipucuna Reserve, again in Ecuador. This resulted in increasing the number of research, volunteers and students, in particular through the involvement of Sussex University.

Through Rainforest Concern, I helped a Colombian student, Angela Maldonado, to study for a PhD in the UK. This paid huge dividends as on her return to Colombia, she set up the Entropika Foundation, an NGO working with local communities in the Amazon near the Peruvian border to counter illegal trafficking of endangered species. Angela subsequently won a Whitley Award in 2010 for her tireless work.

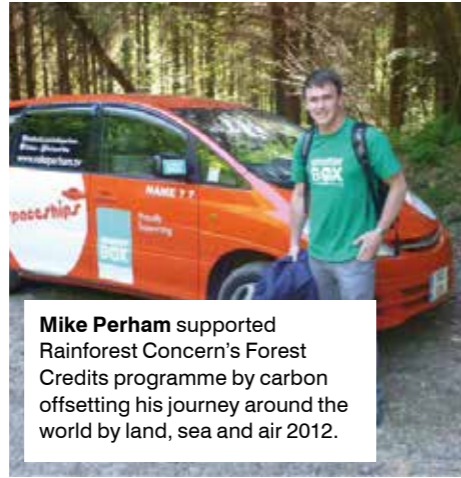
The final project I should mention is a community woodlands project in Peru run by ECOAN, a small association based in Cusco. I sponsored their founder, Constantino Auca, to study at Plymouth University with an academic working on highland ecology in the Andes, and assisted Peruvian students with fieldwork for the project. These activities helped ECOAN to professionalise their work and now ECOAN has several projects. These projects have resulted in many community owned forests which are now recognised by the government. They also produce income for the communities derived from eco-tourism, particularly from ornithologists.

In twenty years of involvement in Rainforest Concern I have seen these small projects that I helped fund grow and thrive, and expand into new ventures. I would strongly encourage anyone thinking of supporting environmental conservation to do so through Rainforest Concern.

Inspirational fundraising

Every year we are astonished and humbled by the amazing endeavours that our supporters undertake to fundraise for Rainforest Concern; from epic journeys to concerts, cycle rides to cake sales and marathons.

Here are just a few of the most memorable:



Mike Perham supported Rainforest Concern's Forest Credits programme by carbon offsetting his journey around the world by land, sea and air 2012.



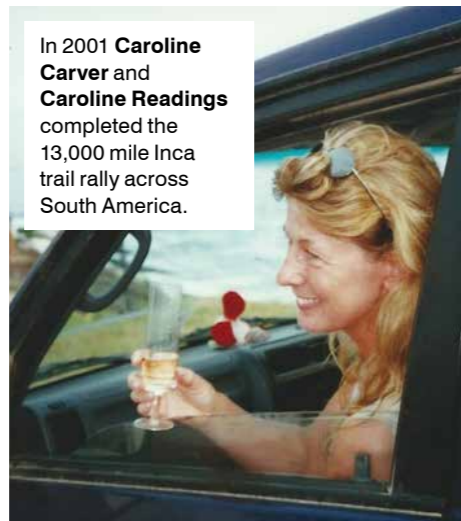
Tim Lennox, runs the Marathon des Sables in the Sahara desert, April 2014.



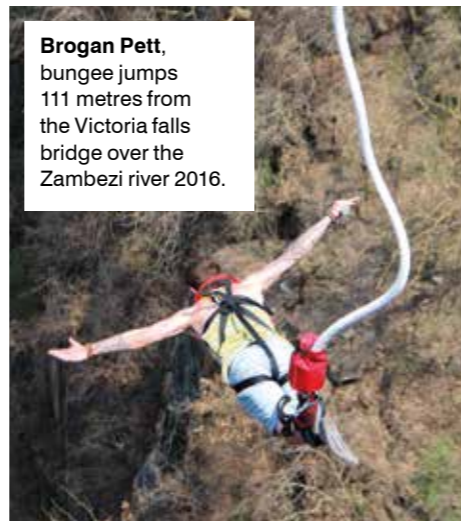
Ed Stafford started an epic journey to walk the Amazon. Starting in 2008, he completed his expedition in 859 days.



Long time supporter, **Dee Douglas**, continues to come up with creative ideas to fundraise for Rainforest Concern.



In 2001 **Caroline Carver** and **Caroline Readings** completed the 13,000 mile Inca trail rally across South America.



Brogan Pett, bungee jumps 111 metres from the Victoria falls bridge over the Zambezi river 2016.

Peter Joost



Will in the Rio Toabunchi

Volunteering in the Intag cloud forest in Ecuador

by Will Harris

At day break I was up for my first patrol – going deep into the Neblina reserve forests to assess whether there was any indication of human influence or bear tracks. I also assisted in an orchid investigation

in Neblina Reserve; we stumbled across a flower as small as a finger nail that turned out to be hugely rare; the *Prescottia Lojana*.

Overall, I had an amazing experience in Intag meeting some lovely people while seeing and doing things I never thought I would. I hope to return in the near future.

GBS



School children from the local community are regular visitors to the sanctuary

Teaching at the Gurukula Botanical Sanctuary in India

Sergey Sitwell, a volunteer from Wiltshire, made a huge contribution at the Gurukula Botanical Sanctuary, teaching school groups, helping to

propagate rare species and reintroducing them into the wild. Sergey told us "teaching the children about our relationship with the natural world was a life-changing experience".

London Marathon

Our thanks to Rainforest Concern's 2017 and 2018 London Marathon runners; Kevin Silverthorn, Alana Medforth, Conta Henderson, Leanna Romano, Courtney Kirk and Christopher Ellingham together managed to raise nearly £8,000. When Chris mustered the strength to sprint across the finish line, the commentator shouted "look at him go, the rainforest concern guy, where did that come from?"

Good luck to this year's runners: Alan Dean, Lucy Graham, Raquel Diniz Dalesco, Haroldo Fernandes, Marco Rijk, Sara Jones, Billy Jones, Joanne Nelms and Jason Berney.

Bath Half Marathon

In March 2019 we had a whole football team run the Bath Half! Team Maths, who raised an incredible £3,500, ran to celebrate the life of their friend and brother Mandip Mann, a nature photographer who was passionate about environmental causes.

Thanks to all of our 2019 Bath Half runners: Natasha Crawford, Anthony Skinner, Jasneel Sehmi, James Rynn, Tony Brady-Locke, Thomas Nash and Karanpreet Dhillon and all of Team Maths.



If you feel inspired to run for Rainforest Concern please do get in touch – info@rainforestconcern.org

Maya 2020 sees results in Belize

by Chris Minty, MBE Maya 2020

Maya 2020 aims to halt all illegal activities in the Chiquibul Forest, Belize, by 2020. With friends such as Selvana Conservation, Rainforest Concern and Survival Wisdom, the project was launched at the House of Lords in 2016. Since then Maya 2020 has focused on building the forest rangers' capabilities through technology, training and mentorship, working with Friends of Conservation and Development Belize (FCD).

Towards the end of 2018, the Foreign & Commonwealth Office invited Rafael Manzanero, CEO of FCD, to the Illegal Wildlife Conference in London to represent Maya 2020. The conference brought together world leaders, environmentalists, technology companies and protected area managers, and culminated with a declaration from leaders to take more specific actions to curb the illegal trade in protected flora and fauna and their products. The Mexican, Guatemalan and Belizean delegates signalled their continued commitment to the protection of scarlet macaws (*Ara macao*) at a tri-national level and emphasised that cross-border collaboration was key in curbing the illegal trade of these beautiful birds.

While the talks focused on the dramatic increase in the illegal ivory trade, the conference also provided an opportunity for Latin-American leaders to describe the challenges they face with the illegal trade in wildlife and timber. The Guatemalan delegates explained that the illegal wildlife trade has connections to other organised criminal elements throughout the region. For FCD, these issues are a daily reality and one that they continue to monitor and tackle in collaboration with the Belizean and Guatemalan authorities.



Jaguar in the Chiquibul Forest

The Maya forest has suffered around 60% biodiversity degradation and 40% deforestation. This has been most pronounced in Mexico and Guatemala, but in recent years Belize has seen significant increases in illegal activities and forest loss, particularly on the Guatemalan border. This is now spreading across the Chiquibul Forest. Activities include logging, gold mining, palm leaf harvesting, scarlet macaw poaching and looting of Mayan sites. The challenge for FCD rangers is to document these activities and protect the natural resources without increasing conflict and risking lives. Unarmed foot patrols set out daily from one of four conservation posts along the border with Guatemala to monitor surveillance devices and document recent activities. They also establish covert observation posts on known scarlet macaw nests to protect chicks and adults. Often, just the

presence of rangers is sufficient to deter illegal activities, but with limited resources and shortage of trained personnel over large areas these daily tasks become challenging. To bolster this work, Maya 2020 initiated a multi-pronged approach covering field training for the rangers, sustainable livelihood programmes for communities in Guatemala, and environmental education. As part of the training, in October 2018, chief ranger, Marco Diaz, spent a week at Survival Wisdoms' training camp in Cornwall focusing on ranger development and leadership skills.

Whilst this programme has begun to reduce illegal activities in the Chiquibul Forest, it is extremely important to ensure this focused and active approach is supported by adequate multi-year financing and political backing.

Offset with Forest Credits

Remember to offset your carbon emissions with our Forest Credits programme. As well as contributing towards preventing deforestation and mitigating climate change, you'll be helping to protect fragile cloud forest ecosystems, protecting endangered plants and animals. www.forestcredits.org.uk



Neblina Reserve looking towards Cotacachi Cayapas

Official partnership with the Royal Botanic Garden Edinburgh

by Martin Gardner, RBGE International Conifer Conservation coordinator, co-chairman of the IUCN Conifer Specialist Group

In June 2018 Peter Bennett, Director of Rainforest Concern and Simon Milne, the Regius Keeper of RBGE, signed an agreement to collaborate in Latin America. This builds on a 25-year collaboration with the International Conifer Conservation Programme that has focused on the purchase and research of monkey puzzle forest in Chile. Under this agreement, funding and research collaboration will target conservation and habitat restoration in a range of ecosystems in Chile and Peru. This will bring researchers and horticultural scientists together to help ecosystems, local communities and agriculture adapt to climate change and protect biodiversity. One of the biggest barriers to conservation and restoration is the lack of horticultural expertise in the field, as well as



Peter Bennett and RBGE Regius Keeper Simon Milne at the MOU signing ceremony

protected sites that require long-term monitoring for restoration

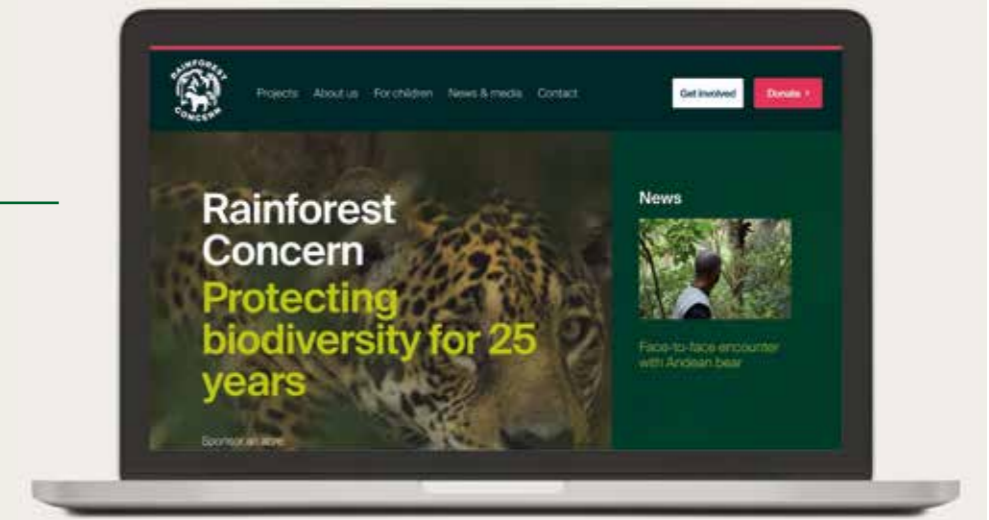
Under a Rainforest Concern MOU with the Royal Botanic Garden Edinburgh, this year saw the initiation of a series of capacity building projects. Gunnar Ovstebo, a Senior Horticulturist from RBG Edinburgh, who is well known for his innovative expertise in arid land plant propagation, joined Oliver Whaley (researcher at RBGE) and a team from Kew in the coastal area of Peru. Training was based mainly in Lambayeque and Ica but a visit was also made to Arequipa to look at critically endangered plants in fog ecosystem (lomas). During the visit, Gunnar developed a strategy for propagation of endangered plants,

working to engage young children to create mini habitats and 'sow the seeds' of expertise in both community nurseries and agroindustry plant conservation centres – supported by Rainforest Concern and wide collaborative partnerships.

In March 2019, Oliver Whaley led a one-day workshop based at Jardín Botánico Chagual, Santiago in Chile on restoration of desert habitats, which attracted 20 participants. The workshop drew on Oliver's considerable experiences working with the restoration of Peruvian lomas and focused on the practical aspects of propagating and establishing plants in arid habitats.

Rainforest Concern's new website

Please visit our website at www.rainforestconcern.org



Thank you to all our school supporters!

As always we are delighted to see the effort and enthusiasms shown by schools in fundraising for Rainforest Concern. We've enjoyed hearing about pupils' cake sales, rainforest cafés, rainforest calendars and many more brilliant fundraising days.

Thank you and congratulations to all who have raised money to support out conservation work.

Particular thanks to:

- Springwood High School who donated £60
- Thomas A Becket Junior Year 4 pupils raised an amazing £820
- Callington Primary School raised £144
- Year 5 at St James' Primary school donated £85.56
- St John's Primary School in Keynsham raised £270 at their cake sale after a Rainforest Concern visit.
- Year 6 at Simon de Senlis Primary School held a rainforest café and raised £264
- Children at Cambridgeshire Educating Families group made their own cakes, bath bombs, games and biscuits to sell and raised £117 sponsoring two acres of rainforest
- King's Oak Academy raised £50 sponsoring one acre of rainforest
- Millie Harrison was so inspired after hearing a rainforest talk at her school in Harpenden that she raised £50 to sponsor one acre of rainforest all by herself!



School children at a Wild About Comics event

You can download educational materials from Rainforest Concern's website at www.rainforestconcern.org/explore/resources

Resources include worksheets and activity sheets, our rainforest booklet and copies of the Amazonas comic. We can also send printed versions on request.

Please do send us your letters, artworks and photos and we will try to include as many as possible on our website and in the next newsletter!



Greta Thunberg, founder of School Strike for Climate is an inspiration for so many children

Leave a piece of paradise in your legacy

Any gift – however big or small – can have an impact on the future of the forests you leave behind, helping us continue our work to conserve threatened habitats.

Leaving a legacy to Rainforest Concern makes a profound difference to our work. In some cases, a legacy has even enabled us to establish new conservation projects.

Without your support, Rainforest Concern would not be able to carry out the work that we do. Leaving a legacy to us means that you will continue to play a part in our work far into the future; helping protect the world's rainforests and the incredible biodiversity they contain, together with the indigenous people who depend on them for survival.



Murray Cooper

Project partner organisations

- ADEPT (Romania)
- Amazon Watch (Brazil)
- ANIA Peru (Peru)
- CBZ (Chile)
- DECOIN (Ecuador)
- ECOAN (Peru)
- FORECOS Foundation (Chile)
- Fundación Entropika (Colombia)
- Fundatia Conservation Carpathia (Romania)
- Gaia Amazonas (Colombia)
- Gurukula Botanical Sanctuary (India)
- Parques Para Chile (Chile)
- Rainforest Information Centre (Australia)
- Royal Botanic Garden Edinburgh (UK & Chile)
- Selvana (Belize)
- Universidad Austral de Valdivia (Chile)
- Yakusinchí (Ecuador)

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With thanks to the team at John Brown Media for their help optimising some of the photos in this Rainforest Review, in addition to their ongoing support for the Neblina Reserve.

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PLEASE TICK ONE BOX ONLY

- Member:** Sponsoring 1 acre each year £5 per month £60 annually
- Friend:** Sponsoring 2 acres each year £10 per month £120 annually
- Guardian:** Sponsoring 6 acres each year £25 per month £300 annually
- Benefactor:** Sponsoring 12 acres each year £50 per month £600 annually

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giftaid it You can make your donation worth even more! For every pound you give us, we get an extra 25 pence from the Inland Revenue. All you need to do is tick the box

I would like all donations I have made since 6 April 2015 and all donations in the future to be Gift Aid until I notify you otherwise

To qualify for Gift Aid, what you pay in income tax or capital gains tax must be at least equal the amount we will claim in the tax year and you need to give us your home address.

If you wish to sponsor an acre as a gift for someone, please telephone us on 01225 481151 or visit www.rainforestconcern.org/ and click 'Donate'.

Tel: 01225 481151
Website: www.rainforestconcern.org
Email: info@rainforestconcern.org

If you're not a member of Rainforest Concern already, join us by completing the form below!

Please fill in the form and send to: Rainforest Concern, 66 Great Pulteney Street, Bath, BA2 4DL

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After one year's membership, Rainforest Concern Benefactors are entitled to two days free accommodation, meals and guided tours at one of our lodges in Ecuador. Guardians are entitled to this after two years' membership.

All of our supporters receive an attractive certificate recording the level of their membership, our magazine Rainforest Review and regular updates. Guardians and Benefactors will receive a Rainforest Concern T-Shirt (XL/L/M/S/XS Lady fit or Unisex Child size 3-4, 5-6, 7-8, 9-11) **Please circle appropriate size if you would like a T-Shirt.** Certificates and thank you letters will be sent to you in the post.
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