

TReeS News No.83

November 2019

The **TReeS** newsletter provides an update to its members and for those interested in rainforest related issues in Amazonia, specifically in Madre de Dios, in south-east Peru, and the small-scale projects TReeS supports there.

This edition focuses on the projects supported by TReeS members: the reforestation project; Casa Miraflores, including a small associated reforestation project; the small grants programme, including feedback from past recipients; and recent indigenous activities which TReeS funded. There is also an update about the Fauna Forever project, which began as a TReeS initiative. Finally, we remember the ethno-botanist Dr Conrad Gorinsky, who was involved in the Tambopata area when its biological significance was first recognised.

Reforestation project update

The two hectares of the abandoned ranch replanted at the start of the year are doing well. The area lies between the initially reforested plot and a small stand of existing forest – seen in the background in the upper photo. Most of the 2,000 seedlings planted survived and didn't succumb to infestations, fungus, etc. They are now mostly over a metre tall and consequently, their locations have been digitally mapped for future reference and monitoring.

As the photos clearly show, the soil quality is poor and the seedlings cannot be planted in close proximity to each other. Furthermore, every couple of months a significant amount of ground vegetation cover appears which has to be cleared until the trees are a few metres tall.

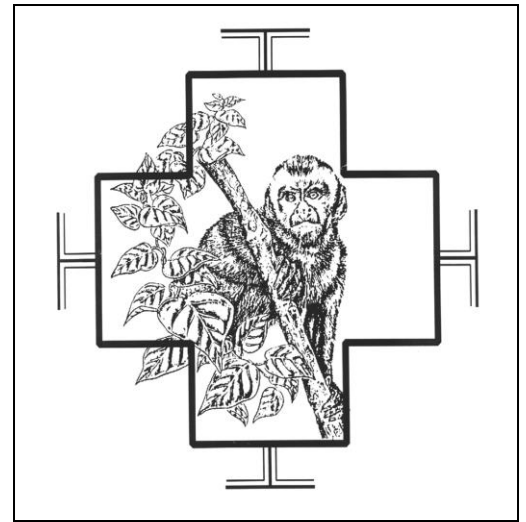
Thanks to the generosity of TReeS members and supporters, the places where the seedlings have failed in the initial two hectare plot and the two hectares planted earlier this year, will now be replanted. A further two hectares will be prepared and planted in the next couple of months with mango, avocado, *mamaye*, *sapote* and *casharana* amongst others. This will extend the area reforested to six hectares. There have already been significantly more wildlife sightings – mainly small mammals attracted by the fallen fruit - in the reforested area compared to the surrounding ex-ranch grassland.

***New reforestation project** – TReeS has agreed to fund a small-scale initiative by Casa Miraflores (See page 3) in the native community of El Pilar, just outside Puerto Maldonado. The students at Casa Miraflores exist on a very basic, repetitive diet provided mainly by government funds via FENAMAD. They only receive additional supplies from their communities occasionally, if at all.

The students are keen to grow some fruit and vegetables but the garden at Casa Miraflores is too small. As a result, El Pilar has donated two hectares of an *ex-chacra* to them to farm. They have cleared the *chacra* and TReeS has agreed to fund the planting of the fruit and timber trees that will occupy approximately one hectare of the land. TReeS will also cover the cost of gloves, wellington boots and a first aid kit.

Appeal: please see the attached flyer.

Due to the new GDPRs, TReeS can no longer solicit non-members for funds and, therefore, distribution of this appeal by TReeS members to friends, family and colleagues is essential for the future of the project.



Seedlings planted in January 2019 - note the sandy soil and ground cover after six months

© TReeS



Sr. Ramirez, from the Bello Horizonte lodge examines a seedling planted in January 2019

© TReeS

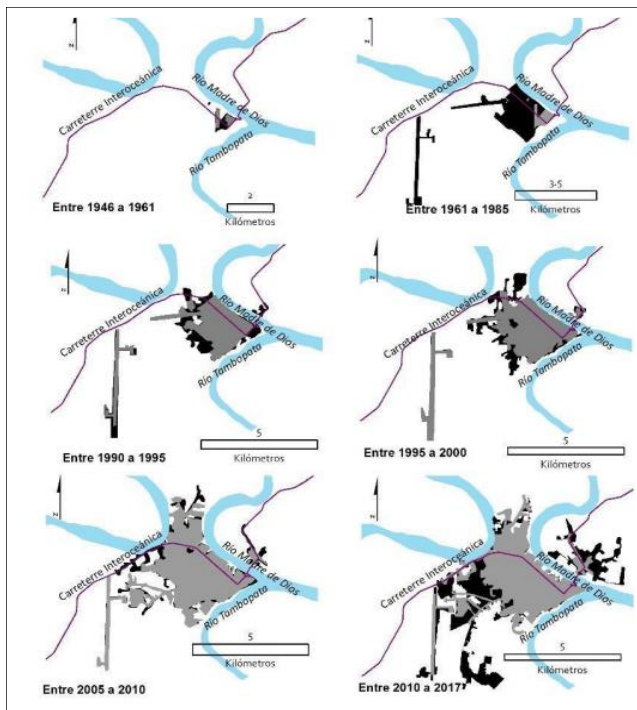
TReeS small grants recipient feedback

The following are brief descriptions of the findings of Peruvian students who received a small grant from TReeS to support their fieldwork in Madre de Dios to obtain the data for their final degree project.

***T.Tavera (PUCP) (2018)** - investigated the growth of urban areas in Madre de Dios over the last 50 years using census data, satellite images and aerial photos. He related changes in the aerial extent and population size of the main urban areas to the growth of illegal gold-mining in the department.

Pop. (selected years)	1972	2017
Puerto Maldonado	5,300	78,000
Mazuko	250	6,300
Huepetuhe	-	5,300
Delta 1	-	1,700
La Pampa	-	4,000

Reliable aerial data only exists for Puerto Maldonado and it shows a growth of the urban area from 35 hectares in 1972, to 1,700 hectares in 2017.



(Grey shading = existing buildings / Black shading = new buildings)

The study showed a clear correlation between rises in the price of gold and the growth of illegal mining. All four smaller settlements are at the centre of illegal mining while Puerto Maldonado, though some distance away, is the main commercial centre for all of them.



2

Paco (*Piaractus brachipomus*) © K.Portacarrero

***C.Almora (UNALM) (2018)** – investigated variations in the variety and abundance of frog species in the Kawsay Conservation concession, within the Tambopata National Reserve. Thirty transects, each 30m long, were established in primary and secondary forest as well as on cultivated land (banana plantation). The transects were visited each day between 0700-1400 and 1800-2300.

Of the 96 known frog species in Tambopata, 15% of the species found in Peru, 37 species were identified during the study from 8 families, represented by 758 individuals.

Land Type	No. of species	No. of individuals
Primary Forest	28	201
Secondary Forest	26	287
Cultivated land	11	270

The most abundant families were *Hylidae* with 164 individuals from 17 species and *Leptodactylidae* with 348 individuals from 7 species. The most common species according to land type, with 124 individuals, was *Leptodactylus bolivianus* on the cultivated land. Distinct groupings of particular species such as this were found in all three areas.

The study goes on to discuss some of the factors that might explain the variations in species and abundance between each land type.



***Leptodactylus bolivianus* © Carlos Almora**

***K.Portacarrero (2017)** – altered her original proposal and studied the suitability of a brazil-nut mash as a new fish food source for young *paco* (*Piaractus brachipomus*) (*Serrasalminidae*). Brazil-nuts are plentiful in Madre de Dios and could provide an important new food source for fish farms. The study took place at the Centro “Roger Beuzeville Zumaeta”, operated by the Instituto de Investigaciones de la Amazonía Peruana (IIAP).

Ninety fish, all weighing about 120grams, were fed a diet containing the mash three times a day, at varying intervals, for 7 days. The mash consisted of their normal foodstuff – a fishmeal, maize and soya flour mix (69.5%), crude or toasted brazil-nut mash (30%), and an inert indicator (chrome oxide)(0.5%).

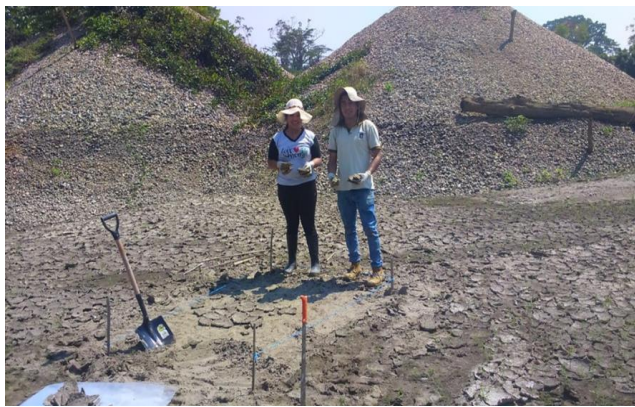
On the eighth day the fish were moved to a new tank and weighed. On average each fish gained 11grams, about 10% of their weight., with those fed on the toasted brazil-nut mash gaining slightly more weight. This compared very favourably with the sample group which had remained on their usual diet.

The faeces were also collected and analysed to study the efficiency of the diet. The results suggest that the diet provides the fish with a higher level of protein than their standard diet.

***Maria Carmona & Kevin Rivera (UNAB) (2018)** - the study looked at the possibilities of restoring soils contaminated with mercury using Vetiver (*Chrysopogon zizanioides, L.*) – a perennial bunchgrass of the family Poaceae, native to India.

Soil was collected from an area affected by illegal gold-mining, near San Jacinto, La Pampa, and was assessed for the degree of mercury contamination. Vetiver seedlings were then planted in pots containing three different soil mixes and grown for 120 days in identical climatic conditions. The seedlings were then cut and the biomass, root length and the mercury content of the soil were measured.

The greatest biomass and root lengths were found to occur in the seedlings planted in a mix of 80% soil, 18% compost and 2% calcium. The degree of mercury absorption (75%) was also recorded in this soil. The study goes on to suggest that Vetiver has tremendous potential in supporting the recovery of the soils and vegetation in the heavily degraded ex-gold-mining areas around La Pampa.



Collecting the contaminated soil at San Jacinto © M.Carmona

TReeS small grants programme 2019

The details of the grants awarded this year were given in the last newsletter but one further grant was awarded slightly later than the others as follows –

***A.Rivera (UNSAAC):** ‘*Composición de quirópteros en cultivos y cuerpos de agua en la estación biológica Kawsay en Madre de Dios*’ - will compare the abundance and diversity of bat species between primary forest and farmland. 165 species of bats have been recorded in Peru but they are relatively little studied. Antony will set up nets, 12m long and 2.5m high, every 50 metres along a series of transects. They will be deployed in both the lower and upper understories between 1730 and midnight on the sample days.

Recordings will also be made of the calls of all the bats temporarily captured, using a micro-phone that can detect up to 160Khz. At a later stage, Kaleidoscope and Avisoft software will be used to further confirm the species identification.

Appeal: £25+ donations towards the **2020 grants programme** so that a similar number of grants can be awarded. **TReeS members support is hugely important in maintaining this programme.**

Rescate Cultural

TReeS has supported COHARYIMA – the native organisation representing the Upper Madre de Dios - to participate in a trip to the upper Amarakaeri Communal Reserve with representatives from the Ministry of Culture.

The main objective of the trip was to geo-reference and officially photograph a sacred Harakmbut site – the ‘rostro’ (face) Harakmbut. The ‘rostro’ is an apparently natural rock formation on the banks of an upper tributary of the river Colorado that has the appearance of a human ‘face’. Its existence is well-known in Harakmbut folklore but it was only a few years ago that another trip relocated it in the forest.

COHARYIMA hope to have it declared as a ‘cultural monument of the nation’ and in so doing, decrease the likelihood that illegal and destructive extractive activities will take place in the surrounding forest.

It took two days from the indigenous community of Puerto Luz to reach the ‘rostro’. The trip upriver proved challenging given the lack of experience of the Ministry of Culture representatives in such conditions, with the canoes needing to be pushed upstream on several occasions and a new camp set up each night.

The Amarakaeri Communal Reserve is almost free of the US oil company Hunt Oil who for a decade were present in the area – exploration block 76 overlapped with the Reserve but indigenous groups had never been consulted. The area was logistically and geologically challenging to operate in and proved economically unviable to exploit. Hunt Oil have been following their ‘abandonment plan’ in accordance with their EIA over the last two years.



The ‘face’ in profile – on the left, facing the river © COHARYIMA



The team in front of the ‘face’ – in the centre, above the group and facing us © COHARYIMA

Casa Miraflores

The 'house' is in much better shape now after some further investment from the Swiss NGO, EcoSolidad, plus the extra furnishings and fittings supplied by TReeS. It is clearly being much better looked after.

EcoSolidariad also decided to continue to –
-employ Katya Mallea for another year as co-ordinator;
-undertake some further repairs, including installing a system for collecting rain water for various uses;
-continue to employ the p/t Maths teacher that TReeS funded last year.

The 'house' still lacks many basics, for example, there are only two toilets, one for men and one for women. However, the 'house' has become very popular and is fully occupied with 24 students and several others wanting to live there but having to rent rooms in town.

The 24 students come from seven different communities – Puerto Luz, Diamante, Shintuya, Palma Real, Infierno, Sta. Teresita and Yombato, inside Manu National Park. Some are taking University courses (Forestry, Ecotourism & Information systems) while the rest are at various Institutes studying Bilingual education, Tourism, Nursing, Agro-forestry and Information systems.

TReeS has funded another postgraduate psychologist, Karla Bontemps, in the essential role undertaken by Katya last year to work with the students and address some of the issues they face adapting to living and studying in Puerto Maldonado, far from their communities. She undertakes both large group, small group and individual discussions with the students. In the larger groups the issues covered include topics to aid their integration in to wider society such as cultural identity, controlling emotions, life plans, self-esteem, drugs awareness, etc while appropriate issues are discussed in group sessions with the girls such as sexual equality and women's rights, etc. (We are most grateful to a TReeS member for covering her funding).

In group discussions the following issues were raised –
-the need for computer access on a regular basis for their courses. TReeS funded the repair of one machine and will donate a second hand laptop later in the year;
-the need for a better printer than the old black print one that was donated by FENAMAD. On some courses they are expected to be able to p/copy, scan and print documents. TReeS requested quotations for a new printer.

-the Casa Miraflores library is very limited. TReeS has donated an english/spanish and a spanish dictionary.

-English teacher: almost all the students but especially those studying tourism need to have a degree of english. Most only acquired very basic english language skills at secondary school unlike their peers who went to school in Puerto Maldonado. TReeS has funded an english teacher for several weeks this term to try to boost the functioning english of most of the students.

-Computing teacher: almost all the students need basic computing skills: use of Word, Excel, etc. Almost none of them have acquired these skills at secondary school. TReeS has funded an ICT teacher for one month of intensive teaching, 2-3 classes per week per student.

-Diet: the students survive on a very basic and repetitive diet of rice and tinned tuna, often for days on end, and quite different to the diet in their communities. They have very limited funds to vary this diet. Consequently, they expressed an interest in growing some vegetables and fruit. TReeS has provided some small-scale funding to facilitate this - please see page 1.

COP25 support

TReeS has provided some small-scale funding to COHARYIMA to produce a short film about the potential impact of climate change on some of its communities such as Santa Rosa de Huacaria, on the Cusco/Manu road; Tayakome, in Manu National Park; and Isla de los valles, at the confluence of the rivers Manu & Alto Madre de Dios. The film will be shown at a special event during COP25 - the latest UN Climate Change Conference, to be held in Santiago de Chile, in December. FENAMAD has a programme to look at the impact of climate change on indigenous communities in Madre de Dios, co-ordinated by Claudia Galvez, ex-TReeS co-ordinator.

The UN Climate Change Convention aims to promote the Paris accord greenhouse gas reduction goals and carbon neutral initiatives. However, the backdrop is likely to be Donald Trump withdrawing the USA from the Paris accord: 'too many regulations' he claims!

STOP PRESS – Chile has withdrawn from holding COP25 which will now take place in Madrid, Spain.



Evening class in the main meeting area © TReeS



Group session in the main meeting area © TReeS



The renovated main meeting building © TReeS

Conrad Gorinsky (1936-2019)

It is with great sadness that we learnt of the passing of Conrad Gorinsky, in August. Conrad was an extraordinary individual whose wild imagination, boundless energy, contagious optimism and astounding foresight, creativity and 'out-of-the-box', broad, original ideas and actions stand out today at once as highly prescient and ahead of their time, yet also largely unknown and under-appreciated.

While the obituaries in [The Times](#) or [The Guardian](#) provide us with a patchwork of insights into his life, unique origins, and career, what I wish to highlight and acknowledge is Conrad's signal contribution to the history of the Explorer's Inn and the Tambopata Reserve and the people, projects and ideas that cascaded out from there in the mid-1980's.

I was introduced to Conrad in 1984 by Kevin Morgan who, having returned from a stint as a Resident Naturalist at the Explorer's Inn, had convinced Conrad to partner with the newly founded international venture Operation Raleigh and Max Gunther to offer his logistical support for the whole venture. The idea was to use Operation Raleigh volunteers from around the world to spearhead Conrad's idea - unique in its day - of establishing a network of interconnected ethnobiological databases in the global south that could be used to support sustainable development projects by drawing on the knowledge of what he called 'barefoot professors'. Explorer's Inn was to be the base from which to pilot the approach.

The reason I remember this meeting so well, thirty-five years later, has as much to do with Conrad and the particulars of his unique appearance and personality, as to the smaller and larger context in which the meeting and the events that followed unfolded. Conrad's striking appearance - tall and lanky, with an easy, mischievous grin and sparkle in his eye - was an appropriate stage for an equally striking personality. His congenial, warm, open and informal demeanour, his gently self-deprecating humour and sardonic wit, his relentless optimism and child-like wonder and enthusiasm, these things were all deeply contagious and inspiring to a young man as myself just out of University and raring to step into the world. His style and manner seemed wonderfully out of place in the plush settings of the newly created Earthlife Foundation offices in Belgrave Square, central London. The kind of corporate formality, order and self-importance exuded by the surroundings he found himself in were things which he despised and ridiculed, but felt he had to live with for reasons larger than him or the institution.

The larger context of Bioresources - the company he had helped to set up within the Earthlife Foundation - as well as Conrad's own ideas are worth describing briefly as a way of setting the grander stage in which his life and career unfolded in those years.

By the 1980's both conservation and economic development were in a state of deep crisis, globally. The period of post-war modernisation and the Green Revolution had generated an explosive growth in the production and consumption of food and consumer goods, but also led to huge social and environmental problems linked to mass displacement, hyper-urbanisation, and a wholesale degradation of the world's resources and life-support systems. These factors, coupled with an international financial and debt crisis and the consequent structural reforms associated with the rise of neoliberal economics led to, among other things, the emergence of a new paradigm - sustainable development - with its attempt to bring together what until then had been framed as irreconcilable projects - conservation and economic development - and forms of institutional organisation - charities and businesses.

Looking back today, I am struck by how very prescient Conrad was in his estimation that indigenous knowledge and the new digital technologies had a critically important role to play in developing new modalities of economic development that were environmentally and socially generative, and how the models championed by Bioresources and the Earthlife Foundation became part of the orthodoxy in the years that followed. Like others after him, he probably also miscalculated the political complications and disputes that would arise from enabling those connections amid the historical grievances, inequalities and contradictions of our increasingly networked yet highly fragmented world.

I will never forget the day he brought an Osborne 1 - the world's first commercial 'portable' computer (weighing over 10 kg and the size of a small suit-case) to Puerto Maldonado in 1985 and attempted to demonstrate what at the time seemed like science fiction: the transfer of data from a field computer (the first in Puerto Maldonado,



Conrad Gorinsky at the Explorer's Inn, in 1985

© Kevin Morgan

to my knowledge) to a central database, using a phone system that still relied on an antiquated, ineffective manually-operated switch-board. The memory of Conrad, gesticulating and enthusiastically expounding in his Portuguese-Spanish-English pidgin his prophecy of a world to be, to a rather baffled, unreceptive audience, is one that captures something important about the person, the place and the moment.

My time working with Conrad was very short - I worked as a volunteer and then consultant for him and for Bioresources between 1985 to 1987, at which point the Earthlife Foundation collapsed and the project was temporarily adopted by WWF-UK. But the work that we began with AMETRA (Aplicación de Medicina Tradicional), through the original impulse and support from Conrad and Bioresources, grew and blossomed into a well-established and profoundly influential series of projects and processes, each with its own domino-effect of profound transformations and developments: the AMETRA 2001 organisation; the construction of the Ñape centre in Infierno; the early consolidation of the regional indigenous federation, FENAMAD and TReeS; as well as my own career and those of other peers and colleagues, but also, more generally, the emergence of Explorers Inn and the Tambopata Reserved Zone as a hotspot of innovative science and conservation.

Conrad once remarked that he believed there to be two major theories about the world; the 'conspiracy theory' and the 'cock-up theory'. He believed that the fateful end met by many human endeavours and aspirations is not so much due to Machiavellian malice as to the more mundane workings of incompetence, mediocrity and stupidity. In retrospect, it is remarkable to see how many of the ideas championed by Conrad - controversial at the time - were gradually appropriated by some of the very people and institutions who first criticized them. His greatest accomplishments and disappointments - and there were many big ones that injured him deeply - do seem to bear witness in no small part to the genius and hubris of big, brave, new ideas. It is, however, some of the other sides of his humanity - his generosity, curiosity, intelligence and humour - that I miss most.

*Dr Miguel Alexiades, Senior Lecturer,
Dept. of Anthropology, University of Kent.*



Left to right: Paul Stewart, Sophie Allington, Miguel Alexiades, Conrad Gorinsky & Didier Lacaze

Peru News

Presidents and governments across South America are currently facing widespread protests by voters, with serious rioting in urban areas in Chile, Ecuador and Venezuela. However, in Peru it is President Vizcarra who has taken the steps to deal with widespread corruption in the Peruvian Congress and politics. Congress remains dominated by Fuerza Popular (Fujimori) and APRA (party of the late Alan Garcia) – the *fujipristas*. Many *fujipristas* have been accused of corruption, including their leader: Keiko Fujimori, who remains in prison on remand. President Vizcarra has found it very difficult to pursue his political agenda.

In late September, President Vizcarra took the unprecedented step but with popular backing (87%), of dissolving Congress when it failed to pass a vote of confidence in his reshuffled cabinet. He declared that there would be new elections, in January 2020, 15 months before they were due. A temporary Congress will be elected which will sit until the traditional electoral calendar resumes in the Spring of 2021. However, it remains to be confirmed if this will go ahead and whether the new rules that anyone with a conviction or awaiting trial (such as Keiko) can stand, will apply. Another new ruling prevents all current members of Congress from standing again but this may also not be applied until the Spring 2021 election.

In the USA, ex-President Toledo was, finally, apprehended and is now being held on remand awaiting extradition. On arrival he will join ex-Presidents Humala and Kuczynski awaiting trial. And, further details have emerged about ex-President Alan Garcia's involvement in similar practices – he committed suicide earlier in the year despite protesting his innocence.

The UK – Peru's largest European trading partner - has signed a new trade deal with Peru along with Ecuador and Colombia. It is similar to the deal that the EU recently signed with Peru.

A new review of the Interoceanic highway project – most of the corruption charges levelled at Peruvian ex-Presidents and politicians relate to bribes received from the Brazilian construction company Odebrecht, which constructed the highway – suggests that less than 2% of Peru/Brazil trade moves along it. The study suggests this is because it is at least twice as costly as shipping goods between Lima and Santos, around Cape Horn.

A recent study suggests that the rapid economic growth experienced by Peru in recent years, especially on the back of growth in the mining sector, has had limited impact on the formal employment sector. Nearly 70% of Peruvians (8.5 million) remain employed in the informal sector, the second highest rate in South America after Bolivia.

OSINFOR has been restored to the Council of Ministers (See TReeS News No.82) after the US government objected, claiming that the move breached the US/Peru free trade agreement.

We are grateful to the Peru Support Group (PSG): www.perusupportgroup.org for the sourcing of some details in TReeS News.

UN Development Programme – 10th annual Equator initiative

At the 74th UN General assembly held, in New York, on 15th September, the Amarakaeri Communal Reserve, in Madre de Dios, was one of the 22 winners: receiving \$10,000. They received the reward for protecting 402,335 hectares of rainforest and the alternative livelihoods of the indigenous peoples who live in the Reserve. This was a significant achievement given that there were 847 nominations from 127 nations.

<https://www.equatorinitiative.org/2019/07/31/ejecutor-de-contrato-de-adminstracion-de-la-reserva-comunal-amarakeri-eca-rca/>

Amazon on fire

Peru avoided the worst of the terrible fires that have been burning across much of the Brazilian and Bolivian Amazon in recent weeks. However, many of the fires there have led to widespread forest destruction in Acre (Brazil) and Pando (Bolivia), bordering Madre de Dios.

Madre de Dios remains highly vulnerable to future fires – there are only 35 ill-equipped, permanent fire-fighters spread across the department. However, it appears that they have successfully tackled 180 forest fires in Iberia, Iñambari and Alegría, in recent weeks.

This year, the platform Global Forest Watch Fires, using information from NASA, has reported over 20,000 fires, with Ucayali, in central Peru, the most seriously affected department.

The presidents of Colombia, Bolivia, Ecuador and Peru met on 6 September, in Leticia, in the Colombian Amazon, to sign an agreement pledging sustainable development and reforestation. However, the absence of the Brazilian president and his well-publicised views about ‘developing’ the Amazon reduces the impact of such an accord.

Latin America Protected Areas Conference

The 3rd Congress of Protected Areas of Latin America and the Caribbean (CAPLAC) was held in Lima at the start of October. Over 2,000 experts from 37 countries, including indigenous representatives attended. Using very different words to those used by the Brazilian president in recent months, President Vizcarra referred to forests as ‘our natural capital’ and promoted the protection of forests and endangered species. This somewhat contradicts his support for ‘extractive’ industries in his inaugural address as President.

COICA, the group representing indigenous organisations in the Amazon basin, requested governments to return such territories to them on the basis that research shows that they are the most effective conservationists of such environments. The IUCN supports this view as indigenous peoples occupy 22% of the world’s land where 80% of the biodiversity of the planet is located. However, native peoples receive only 2% of global funds for conservation.

Vizcarra went on to call for the titling of all indigenous lands to coincide with the bicentennial celebrations of independence in Peru, on 28 July 2021. However, the number of communities still requiring titling, the conflicts of interests and the time-scales involved means that this is unlikely to be achieved.

UN International Year of Indigenous Languages - 2019

The UN year of indigenous languages aims to revive over 2,000 at-risk indigenous languages, 14 of which are native to Peru, and several of which are spoken in Madre de Dios.

It aims to do so by -

- raising awareness of the consequences of the endangerment of Indigenous languages across the world, with an aim to set up a link between language, development, peace, and reconciliation;

- focusing attention on the risks confronting indigenous languages, especially those significant for development, reconciliation, good governance and peace building;

- improving quality of life, international cooperation and strengthened intercultural dialogue to reaffirm the continuity of indigenous languages and cultures;

The UN plans to achieve this by –

- supporting the creation of more materials and content, and a wider range of services, using language, information and communications technologies;

- creating access to education, information and knowledge in and about indigenous languages for indigenous children, young people and adults, and by improving the data collection and sharing of information;

- promoting the knowledge areas and values of indigenous peoples and cultures within broader sociocultural, economic and political domains, as well as traditional cultural practices.

Indigenous peoples living in voluntary isolation

In 2006 the Peruvian Congress passed Law 28736 to offer some protection to the few remaining semi-nomadic indigenous peoples living in voluntary isolation in the forest. These groups include the Mashco-Piro, a group of about 750 people that move between the territorial reserves in western Madre de Dios designated (1997-2002) for their exclusive use. The Ministry of Culture has, finally, announced that those contacting and entering illegally into these areas can be fined up to 4 million soles, about £1 million.

The Mashco-Piro have experienced numerous threats to their survival as armed drug traffickers, loggers and settlers have entered in to their lands. However, the greatest threat to them remains epidemics such as the common cold, which are not present in their societies and against which they have no immunity.

However, many still have big doubts as to how the Ministry will be notified in the first place and, subsequently, take action if these incursions persist despite the support of indigenous organisations such as FENAMAD and AIDSESEP.

STOP PRESS

The native community of Monte Salvado, (pop.50), located 150kms up the Las Piedras river from Puerto Maldonado, has been evacuated after a group of Mashco-Piro – estimated to be as many as 200 in number – entered the community. Most were evacuated by helicopter while a smaller group came downriver by boat.

It seems that the Mashco-Piro came to the area to collect turtle eggs from the river banks while river levels are lower, and at the same time chose to take what they could in the way of clothes and utensils from the community.

The expanding research and conservation work of Fauna Forever in Peru

It will soon be 25 years since I was invited by Claudia Galvez Durand, TReeS' representative in Peru in the 1990s, to visit some of the projects and initiatives supported by TReeS at the time. I was a volunteer Resident Naturalist (straight out of university) studying termites at what is now the Tambopata Ecolodge on the river Tambopata. I was keen to understand what was going on in terms of research, conservation, and community development in what would soon become my long-term home, the lowland tropical rainforests of Madre de Dios. Without those early field trips with TReeS in the mid-1990s to other sites in Tambopata, and the connections I made, my stay in Peru may well have been relatively brief. However, I was soon hooked on trying to deal with a raft of questions as a conservation biologist whose answers could shape how 'wild' rainforest was managed in this region long into the future.

Before too long, and again with the help of TReeS, I had raised the funds for a project focused on understanding the impacts of ecotourism development on vertebrate wildlife in Tambopata, namely medium- and large-sized mammals, birds, amphibians and reptiles, at six lodges. The fieldwork was undertaken over a 2-year period by a team of fellow biologists and groups of dedicated volunteers from all over the world. Suffice to say, no significant overall impacts of ecotourism activities on their own were observed, other than some very localised impacts affecting deer populations (Brocket deer are very shy animals). In fact, these few impacts are considerably dwarfed by the conservation benefits that ecotourism has generated over the years in Tambopata, from financing the administration and protection of the Tambopata National Reserve and Bahuaja-Sonene National Park via a visitor entry fee system, to being the economic driver in the creation of thousands of hectares of essentially private conservation areas in the buffer zone of these two protected areas.

The field methods and the data collected by the afore-mentioned wildlife project continue to live on in the shape of a long-term environmental monitoring initiative which sits at the heart of Fauna Forever. Fauna Forever is the Peruvian non-profit organisation that I co-founded in 2010 that leads and supports wildlife and ecosystem services research, animal rescue and rehabilitation activities, community- and entrepreneur-based conservation initiatives, environmental education programs, and forest rehabilitation work. We strongly promote locally-led ecotourism development in the region, especially those operations set up by native communities and local mestizo families, and are happy to see these initiatives grow as Madre de Dios continues to see its nature tourism sector expand. Today, the Tambopata area attracts 100,000 tourists annually and there are now more than 60 lodges, homestays, and research stations catering to all types of visitors from all over the world, including many Peruvians from Lima who used to be rare visitors in the past.

Fauna Forever continues to offer volunteers and student interns the opportunity to participate in its projects and in this way actively learn the techniques needed to study tropical wildlife ecology, safe animal handling techniques, medicinal plant use among forest-based communities, teach environment and community development themes to kids of primary and secondary school age, and even non-profit management skills for those people interested in assisting us in our offices in Cusco and Puerto Maldonado. To date, if you include the early days in the 1990s, we have taken on 1,280 volunteers and interns from 29 countries across 5 continents. The number of sites we work at has grown from six to more than sixty, including sites in the Departments of Cusco and Puno.

Our work continues to be supported by funds from donor organisations in various countries; we ask most volunteers and interns to cover their Peru-related project expenses associated with accommodation, food, and transport; and we also get finance from consultancies, as well as donations from generous tourists who we show around Peru's natural and cultural attractions. Our work and data have been published in more than 30 articles and book chapters over the years, with more planned as our fieldwork and project inventory expands.

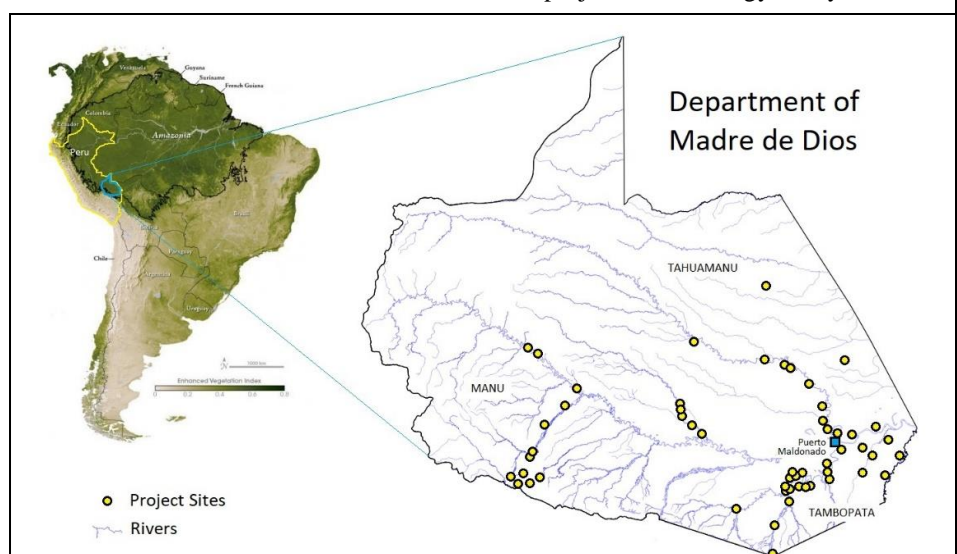
We are currently raising funds to expand our new bat ecology project. Led by a Canadian and Peruvian biologist, the project is focused on understanding species diversity, population abundance, home range size, and activity patterns of bats across multiple forest types and watersheds in the lowland rainforests of Madre de Dios. The project is technology heavy in that it uses cutting edge radio-telemetry,

automated data-loggers, and acoustic monitoring equipment, which as it sounds is quite costly. Should anyone be interested in donating to this project (or indeed others), please contact 'TReeS' for more information.

We are also accepting volunteers and interns onto the bat project, so if you are someone who is curious about the ecology of lowland Neotropical bats, then please feel free to apply via our website:

<http://faunaforever.org>

Dr. Chris Kirkby
(info@faunaforever.org)



The Tambopata Library: the following articles, documents and reports about Tambopata and Madre de Dios have been received/ sighted over the last few months. Many of them can be traced via the internet while some directly linked to TReeS will be placed on the TReeS website.

The following reports have been received from those who were awarded a **TReeS small grant** -

- ‘*Efectos de la agricultura sobre la diversidad taxonómica y funcional de anuros en la Reserva Nacional Tambopata, Madre de Dios*’, Carlos Almora (Beca 2018);
- ‘*Digestibilidad proteico-energetica de la torta de castana, Bertholletia excelsa (Lecythidaceae) en juveniles de ‘paco’, Piaractus brachyomus (Serrasalminidae) en condiciones controladas*’, K.Portocarrero (Beca 2017);
- ‘*La expansión de las ciudades de Puerto Maldonado, Mazuko, Huepetuhe y Delta I debido a la influencia de la minería ilegal en el departamento de Madre de Dios desde 1970 a la actualidad mediante técnicas de tele-detección y fotogramétricas*’, Tarik Tavera (Beca 2018);
- ‘*Eficiencia del Vetiver (Chrysopogon zizanioides, L.) con la adición de enmiendas en la bioremediación de suelos contaminados con mercurio (Hg) por la minería informal en la zona de San Jacinto, Madre de Dios*’, Maria Carmona & Kevin Sanchez (Beca 2018);

The following publications can be accessed through the ‘MAAP’ website: www.maap.org

- ‘*Detecting illegal logging in the Peruvian Amazon*’, MAAP 99, April 2019;
- ‘*Western Amazon – Deforestation Hotspots 2018 (a regional perspective)*’, MAAP 100, May 2019;
- ‘*Major reduction in illegal gold-mining from Peru's Operation Mercury*’, MAAP 104, August 2019;
- ‘*From satellite to drone to legal action in the Peruvian Amazon*’, MAAP 105, August 2019;
- ‘*Seeing the Amazon fires with satellite, part 1*’, MAAP 107, August 2019;
- ‘*Understanding the Amazon fires with satellites, part 2*’, MAAP 108, August 2019;

The following publications can be accessed through the ‘RAINFOR’ website: www.rainfor.org

- ‘*Compositional response of Amazon forests to climate change*’, A.Esquivel-Muelbert et al, *Global Change Biology*, 25:39–56, 2019;
- ‘*Individual-Based Modelling of Amazon Forests Suggests That Climate Controls Productivity While Traits Control Demography*’, S.Fauset et al, *Frontiers in Earth Science*, Vol.7, Article 83, 2109;
- ‘*Comparative phylogeography of five widespread tree species: Insights into the history of western Amazonia*’, E.Coronado, *Ecology and Evolution*, 00:1–13, 2019;
- ‘*Species Matter: Wood Density Influences Tropical Forest Biomass at Multiple Scales*’, Dr O.Phillips et al, *Surveys in Geophysics*, 2019;

The following publications linked to Fauna Forever were also sighted –

- ‘*Microgeographic variation in species composition of the Herpetofaunal communities of Tambopata, Peru*’, Doan, T.M. & W. Arizabal-Arriaga, *Biotropica* 34(1): 101–117, 2002;
- ‘*Habitat and population estimates of some threatened lowland forest bird species in Tambopata, south-east Peru*’, Lloyd, H., *Bird Conservation International*, 14: 261–277, 2004;
- ‘*The market triumph of ecotourism: An economic investigation of the private and social benefits of competing land uses in the Peruvian Amazon*’, Kirkby C.A. et al, *PLoS ONE* 5(9): e13015. doi:10.1371/journal.pone.0013015, 2010;
- ‘*Closing the ecotourism-conservation loop in the Peruvian Amazon*’, Kirkby C.A. et al, *Environmental Conservation*, 38(1): 6-17, 2011;
- ‘*Usefulness of species range polygons for predicting local primate occurrences in south-eastern Peru*’, *American Journal of Primatology*, 73(1), pp.53-61, 2011.
- ‘*Avian distribution and life-history strategies in Amazonian terra-firme and floodplain forests*’, *Tropical Conservation Science* 9(1): 465-502, 2016;

The following publications were also sighted by TReeS –

- ‘*What do you know about conservation and human rights?*’, Dr H.Newing & A.Perram, *Oryx*, 53(4), 2019;
- ‘*Evaluating wildlife vulnerability to mercury pollution from artisanal and small-scale gold-mining in Madre de Dios, Peru*’, K. E. Markham & F. Sange rmano, *Tropical Conservation Science*, Vol. 11:1–12, 2018;
- ‘*Sediment transport, artisanal gold-mining, and the evaluation of potential mercury contamination in Madre de Dios, Peru*’, Axel Berky, (unpublished), 2014;
- ‘*Informe sobre la situación de los pueblos en aislamiento y contacto inicial en la Amazonía peruana*’, PIACI - AIDSESEP, 2018;
- ‘*Evaluación y alcance de la industria extractiva y la infraestructura en relación con la deforestación: Amazonia*’, D.Humphreys Bebbington et al, *Derecho, Ambiente y Recursos Naturales (DAR)*, 2019;



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TReeS contact details –

**P.O.Box 33153,
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TReeS USA

TReeS USA covering the USA and Canada is run by Bud & Margaret Widdowson –
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TReeS committee 2018-19

John Forrest
Dr Helen Newing
Huma Pearce
Elizabeth Raine
Rebecca Warren

TReeS website

Details of TReeS merchandise can be found at the website:

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