

TReeS News No.80

July 2018

The **TReeS** newsletter provides an update 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 TReeS small grant (*becas*) 2018 awards - a record number were awarded this year - and feedback from previous grant recipients as well as the TReeS reforestation project.

There is also news from Madre de Dios on the latest data with respect to deforestation, the visit of the Pope and an obituary for Max Gunther, founder of the Explorer's Inn.

TReeS small grants (*Becas*) program

The small grants programme is an important contribution to the career development of young Peruvian scientists who will, potentially, be researching, working in and promoting Amazonia for decades to come. TReeS funding assists them in gaining all important field work skills that allow them to complete their University studies and may also enable them, subsequently, to join other field research projects and conservation organisations. Over **60 grants** have been awarded over the last 10 years. On page 3 we report on the outcome of a survey of past recipients.

In 2018 a **record number of nineteen** applications were received and a record number - for the second year in a row - of **nine grants were awarded** though, in the end, only seven applicants were able to take up the offer.

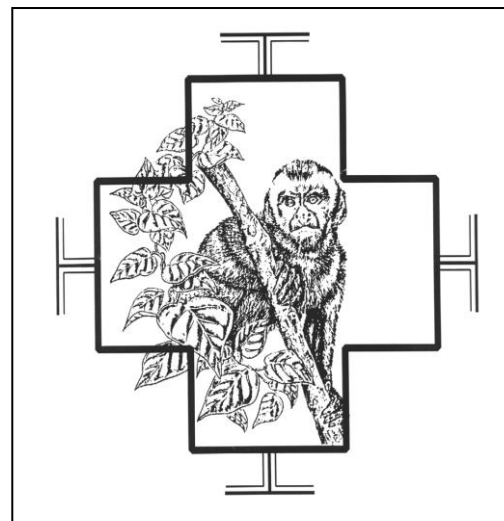
Appeal: £25+ donations towards the **2019 grants programme**.

TReeS members support is hugely important in maintaining this programme. In addition, the grants TReeS can offer as well as funding for other projects has been affected by the fall in the rate of exchange since the Brexit vote.

TReeS small grants (*becas*) 2018 awards

***Carla VIRREIRA** (UNMSM): '*Morfología de fitónimos usados en los bienes materiales producidos por la mujer Ese'ija*' – will study the lexicography of plants used by Ese'ija women to describe the different plants and parts of plants used in the production of baskets, fans, jewellery, etc. She will base her study in the Ese'ija communities of Palma Real and Infierno.

***Carlos ALMORA** (UNALM): '*Patrones de cambio en la diversidad anurofaunística asociada a sistemas naturales y productivos*' – will investigate the amphibian species associated with both natural and managed lowland rainforest ecosystems, and suggest reasons for the variations encountered.



TReeS small grants 2018 awards continued

***Edwin JURADO** (UNAMAD): '*Determinación de recursos frutales claves (RFC) en bosques de bajo Madre de Dios*' – will study the variety and density of significant fruit tree species in the lowland forest of Madre de Dios.

***Tarik TAVERA** (PUCP): '*La expansión de las ciudades de P.Maldonado, Mazuko, Huepetuhe y Delta-1 debido a la influencia de la minería ilegal en Madre de Dios desde 1970 a la actualidad mediante técnicas de teledetección y fotogramétricas*' – will use satellite images and aerial photos to study the growth of some of the larger urban areas in Madre de Dios as a result of gold-mining, since 1970.

***Adrian AVELLANEDA** (UNMSM): '*Biología de Arctiinae (Lepidoptera: Erebidiae) en los alrededores del Refugio Amazonas (ARA)*' – will investigate the biology of the butterfly family Arctiinae (Lepidoptera: Erebidiae) in the forest surrounding Refugio Amazonas, adjoining the lakes Condenados.

***Kevin RIVERA & Maria CARMONA** (UNAB): '*La eficiente minería formal y la bioremediación del Vetiver (Chrysopogon zizanioides, L.) en suelos de La Pampa, en Madre de Dios*' – will investigate the properties of *Chrysopogon zizanioides*, commonly known as vetiver – a perennial bunchgrass of the Poaceae family, which shares many morphological characteristics with other fragrant grasses, such as lemongrass and citronella – in improving soils in areas affected by gold-mining such as La Pampa.

***Lincol HUAMANTUPA** (UNSAAC): '*Estudio de aves para el aprovechamiento turístico en la cuenca del rio Shilve, zona de amortiguamiento, Reserva Comunal Amarakaeri (RCA)*' – will study the tourism potential of birds in the river Shilve drainage basin, which lies in the buffer zone of the RCA.

UNAMAD: University of Madre de Dios, P.Maldonado.

UNMSM: University of San Marcos, Lima.

UNALM: University of La Molina, Lima.

PUCP: University La Católica, Lima.

UNAB: University of Barranca, Barranca.

UNSAAC: University of San Antonio de Abad, Cusco.

TReeS small grants recipient feedback

***Daniela Olivera** (UNSAAC) (2017): '*Determinación de línea base de avifauna en el centro poblado de Sarayacu, Distrito de Iñambari*' – undertook a baseline study of bird species at locations along the river Iñambari, close to Mazuko, in October.

She identified 53 species from 16 orders, 28 families and 48 genera, suggesting that there may be as many as 80 species in the area. 12 of the species are CITES listed but only one - *Amazona farinose* – is listed as vulnerable. None of the species are endemic to Peru, nor legally protected. *Passeriformes* were by far the largest group recorded (42%), followed by *Psittaciformes*, *Piciformes* and *Apodiformes* (all 8%). The three largest families recorded were *Thamnophilidae* and *Throupidae* (both *Passiformes*) and *Trochilidae* (*Apodiformes*). Most species were recorded in secondary forest and along river banks, while fewest were recorded in banana plantations and deforested sites.

The area surveyed lies close to the Transoceanic highway so there may be scope for bird-watching to provide a degree of protection to part of the forest and a small income for the community in future.



Tangara xanthogastra © D.Olivera

***Alejandro Portillo** (UNSAAC) (2017) – '*Variación en la estructura de las comunidades de murciélagos por efecto de la minería informal en la TNR*' – studied the impact of gold-mining on bat populations compared to an area with no mining activity within the Tambopata National Reserve (TNR). 31 species of bat were identified, of which 6 were only located in the mining areas while 12 were only found in the TNR. In the mining area 106 individuals were collected representing 20 species, while in the TNR 185 individuals were collected from 28 species. The dominant species in both areas were *Artibeus lituratus*, *Carollia perspicillata* & *Carollia brevicauda* (42% in the mining area / 30% in the TNR). There were also more rare species in the TNR where the greater abundance probably reflects the wider variety of food sources. However, there is some evidence to suggest that secondary growth vegetation in the abandoned mining areas attracts some specific generalist species.

***Sergio Goizeder** (UNSAAC) (2017) – '*Diversidad de clase Chiroptera en la zona de influencia del MLC*' – the aim of the study was to determine the diversity of species of the Order *Chiroptera* in the forest surrounding the Manu Learning centre. Bats are an important species due to their abundance, distribution and ecological functions. The study compared their presence in two types of vegetation (SLR: selectively logged forest, and CCR: completely cleared forest). Six fog networks were placed in both types of vegetation. By the end of the field phase, 69 individuals belonging to 19 species were recorded (16 species in the SLR and 7 in the CCR), of which *Carollia brevicauda* and *Carollia perspicillata* (both 30.43%) were the most abundant. The main conclusion was that SLR can still host a wide range of bat species.

***Maritza Cardenas** (UNMSM)(2014) – '*Diversidad de chiches Coreidae (Insect: Hemiptera) de la Reserva Nacional Tambopata (TNR)*' - the study looked at the *Coreidae* family of sap-sucking insects which is responsible for transmitting various diseases to both wild and cultivated plants. In Peru, 17 species from 10 genera are registered. Maritza identified 20 species from 12 genera caught in traps at Refugio Amazonas and Taricaya Ecological Reserve. All were new species for the TNR. The largest group were *Anisoscelini* with 7 species. The results suggest that there are many more species to be identified within the TNR and Peru.



Leptoscelis centralis © M.Cardenas



Lophostoma silvicolium @ A.Portillo

TReeS small grants survey

The TReeS small grants programme has been operating in its current format for 10 years. At the start of the year attempts were made to contact all pre-2017 recipients and they were asked to comment on the importance of the grant to their studies and careers. Seventeen, just under a third, responded. Nearly 90% stated that the grant was very important in the completion of their thesis; nearly 90% also advised that it had been important in the completion of their University studies.

Just over 50% stated that they relied on the grant and their own finances alone to fund their fieldwork. Nearly two thirds responded that their current work is directly related to their studies.

Just over 40% still visit Madre de Dios on a regular basis with their work and another 30% visit every so often, while over 70% have maintained specific links with Madre de Dios. Everyone responded that they had been back to Madre de Dios at least once since their grant related trip, and over 80% replied that they still have a strong interest in environmental issues in the region.

Many are or have, undertaken further studies abroad in countries such as Brazil, Argentina, Germany and Ireland. Some are working for Peruvian conservation linked organisations such as SERFOR (National Forest & Wildlife service) and SERNANP (National Protected Areas service), and one is now responsible for biological monitoring in the Tambopata National Reserve and the Bahuaja-Sonene National Park.

Overall, the results of the survey suggest that not only was it beneficial supporting and financing the students in terms of the contents and results of their fieldwork but the small grants have also helped many of them to establish their careers. Several of them now work in Amazonia, including in Madre de Dios.

We would like to thank all TReeS supporters over the years that have made this possible.

World Cup

Football mad Peru qualified for the World Cup for the first time in 36 years. However, Peru were then drawn in the highest ranked group and didn't proceed to the knockout stage. They narrowly lost to France, the eventual winners; were unlucky to lose to Denmark; but beat Australia in their final match – this included a goal by their captain Paolo Guerrero who had only been allowed to play at the request of the captains of the three other teams, after a dubious drugs ban was temporarily suspended.

The Peru team may not have set the World Cup alight, however, the supporters certainly did with many very positive reviews about their enthusiasm and behaviour. Over 40,000 were thought to have travelled from Peru with some selling their homes and businesses to be able to attend what they considered to be a once in a lifetime opportunity.

Pope visits Puerto Maldonado

The Pope made a short visit to Peru as part of a Latin American tour at the start of 2018. As well as Lima and Trujillo he also went to Puerto Maldonado having expressed an interest in meeting and hearing from Amazonian peoples.

Puerto Maldonado was chosen ahead of Iquitos and Pucallpa as host city but representatives of Amazonian peoples from across Peru and also Brazil and Bolivia, attended. He was welcomed by the Bishop of Madre de Dios, a Spanish Dominican.

Pope Francis heard about and listened to a range of issues concerning indigenous peoples across the Peruvian Amazon which is home to 0.25 million indigenous peoples split between 55 distinct ethnic groups. The Pope, not for the first time, criticised the economic and human degradation resulting from the destruction of the rainforest. He spoke out against uncontrolled extractivism and conservation initiatives which don't take in to account local people.

Representatives of native communities across Madre de Dios travelled to Puerto Maldonado, often taking many hours by boat to get there. FENAMAD played a major role as the local representative organisation. The cohesiveness and effectiveness of the organisation at present may well have contributed to the decision for the Pope to visit Madre de Dios. TReeS and our representative there – Alfredo Garcia – have played a small part over the last three decades in assisting FENAMAD to undertake a number of projects and achieve its current position.



The Pope meets Julio Cusirichi (FENAMAD President) © FENAMAD



Reforestation project

The TReeS/APRONIA reforestation project at the Bello Horizonte lodge, 25kms north of Puerto Maldonado, has been running for over 4 years. To date 3 hectares of ex-ranch land which was previously poor quality pasture, have progressively been planted with cacao (variety: CCN51), citrus (Tahitian & Sutil *limon* species), brazil-nut, *pashaco*, *copazú* saplings as well as banana. Unfortunately, the *camu-camu* seedlings planted did not produce the fruit projected so the project now focuses on these other species.

The land lies above an ancient meander of the river Madre de Dios and between the lodge and the access road. Many of the trees are now 3-4 metres tall and bear significant amounts of fruit which will be used at the lodge and also at the popular 'Gustitos de la cura' café and ice-cream parlour, in the Plaza de Armas of Puerto Maldonado.

TReeS has agreed some further funding to maintain the existing replanted area, and to add to its diversity and density. It is also possible that the area will be further enlarged.

APPEAL: offset the carbon from your holiday flight this Summer – another two saplings will be planted for every 31 donated.



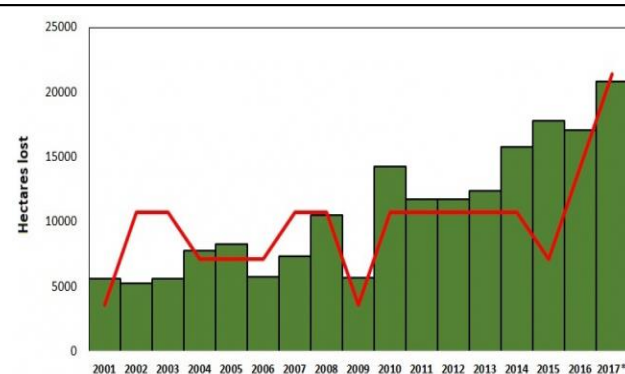
Nursery of limon species © A.Nunez



Cocoa pods ready for harvest © A.Nunez

Deforestation in Madre de Dios update

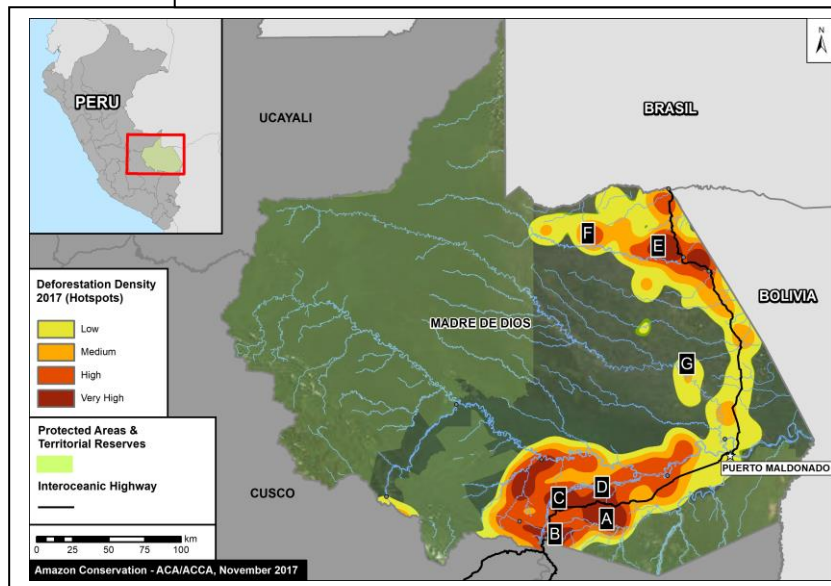
In TReeS News No.79 we reported a significant decrease in forest loss in the Tambopata National Reserve over the last 2 years as the authorities took some belated action to control illegal gold-mining. However, across Madre de Dios, principally in non-protected areas, the rate of deforestation has been steadily increasing – see graph below. In 2017 the loss exceeded 20,000 hectares for the first time, more than double the 2008 rate and nearly four times the 2001 rate. For the first time, Madre de Dios now ranks second – to Ucayali – in terms of regional total forest loss.



The map below produced by ACA/ACCA (based on PNBC/MINAM & UMD/GLAD data) indicates that recent deforestation is closely linked to the scandal ridden Transoceanic highway, especially in south-west Madre de Dios, in the gold-mining hotspots and north-east, around the small town of Iberia.

In La Pampa (A) it is estimated that another 560 hecs were lost in 2017 bringing the total since 2013 to 4,560 hecs; in the Upper Malinowski (B) more recent activity removed 726 hecs in 2017, 2,130 hecs since 2013; while in the Mazuko (C) & Guacamayo (D) areas 1,170 hecs were lost in 2017.

Around Iberia (E) approximately 900 hecs of forest in 2017 and 2,750 hecs since 2013 have been cut mainly resulting from the invasion of forest concessions to create new small-scale farmland plots.



Max Gunther (1925-2018) – an obituary

Max Gunther, owner of Peruvian Safaris - the company that built and ran Explorer's Inn, and managed the surrounding area of forest - died on the fourth of March. Explorer's Inn embodied Max's life work, passion and legacy. As such it represented for him a source of great pride and inspiration, as well as, inevitably perhaps, frustration.

Max Gunther Doering, the second of five children, was born in Trujillo on November 25, 1925 of German-Peruvian parents. Max spent his early childhood in Hacienda Casa Grande, a sugar cane estate in the Chicama valley, north of Trujillo on the northern coast of Peru, where his father worked managing the company's storehouse.

A veterinarian by training and at the time a consummate deer hunter, Max first heard about Peruvian Safaris from entrepreneur and hunter-turned-conservationist Pepe Rada, sometime around 1975. Pepe, together with some business associates, had started a hunting outfitting company to attract wealthy big-game hunters from abroad. Max bought a 50% share in the company, but soon afterwards the hunting of the three main big game species - jaguar, spectacled bear and Andean deer - was outlawed by the Peruvian government. Max and his partners decided to re-align the lodge towards nature tourism and began to look for a suitable site to build a lodge. Puerto Maldonado was chosen as the ideal destination in light of its strategic proximity to Cusco, the existence of a modern airport and the large areas of undisturbed forests. An area of 105 hectares was purchased from the State and the lodge inaugurated by president Morales Bermúdez in 1976. He was reportedly dropped off by helicopter at the Explorer's Inn football field.

Max, who was by then Director of the Peruvian branch of WWF, not only bought most of the shares in the Company but also began encouraging several highly prominent north American biologists to visit the Inn, including Terry Erwin (Smithsonian Institution), Al Gentry (Missouri Botanical Gardens), Ted Parker (Louisiana State University), David Pearson (Pennsylvania State University), and Paul Donahue, among many others, who led several expeditions to the site. The different experts inventoried the flora and fauna of the surrounding forest and discovered levels of species diversity for several taxonomic groups- notably birds and butterflies- that were then world record-breaking. Their work provided the preliminary technical support for the creation of a 5,500 hectare Reserved Zone by the government in 1977, as part of an agreement in which Peruvian Safaris was given custodianship. The evolving and growing relationship with numerous scientists, naturalists and conservationists was also a transformative experience for Max in the sense that it contributed to a deepening of his commitment to conservation and to his sense of the unique value and potential of the Explorer's Inn in this larger process.



*Kevin Morgan, Reno Taini, Max Gunther, Oliver Phillips
(Explorers Inn reunion, 2005) © K. Morgan*

The evolving and growing relationship with numerous scientists, naturalists and conservationists was also a transformative experience for Max in the sense that it contributed to a deepening of his commitment to conservation and to his sense of the unique value and potential of the Explorer's Inn in this larger process. From then on Explorer's Inn and the Tambopata Reserved Zone (TRZ) gained increasing international attention and recognition as a centre for scientific research, exploration and conservation. The TRZ became one of several early sites important to this day for comparative biodiversity and ecological research in the Amazon. The formative influence of Explorers' Inn was also considerably extended through the work of Didier Lacaze, who managed the Inn from 1982-1986. Didier's pioneering work with traditional medicine, AMETRA and the neighbouring community of Infierno was originally organised out of and supported by Explorer's Inn and Max Gunther.

Max, with some of the scientists listed above, created the innovative Resident Naturalists' (RN) programme, which gave an opportunity for biologists to gain field experience and conduct research in the TRZ while acting as voluntary guides for the visitors. The RN Program was particularly important in building the profile for the Inn as a leading rain-forest ecotourism destination and in the scientific community.

It was highly successful in attracting many young enthusiastic biologists into the area, introducing them to the wonders of tropical forests, shaping their future life and careers and, in some cases, prompting them to work in the area for years. Max faced numerous challenges and difficulties, particularly during the first 20 years with the logistics of running a tourist in such a remote location and poorly developed region.



*Max holding the picture of the
shihuahuaco tree trunk after
the 1985 fire that destroyed the
Explorer's Inn
© K. Morgan (2005)*

Max Gunther obituary continued

Madre de Dios lacked anything close to reliable road or telephone links to the outside until the mid-1990's. Operations were notoriously hard, particularly during the rainy season when bad weather caused frequent flight cancellations and when all road communications and critical supplies from the outside were cut off for weeks at a time. The war with Sendero Luminoso and a series of political and economic convulsions during the 1980's and 1990's contributed to many lean seasons and years. Moreover, the relationship with the neighbouring community of Infierno was at times problematic, in part because due to an oversight by government departments the Reserved Zone had been created partly overlapping with the community's titled lands. The labyrinthine nature of Peruvian bureaucracy also took its toll on Max. In 1985, after a devastating fire in the central building of the lodge, Max suffered a stroke from which, amazingly, he subsequently recovered fully.

Recovering, persevering, succeeding; these are things that Max did repeatedly and remarkably. I can see him now, sitting behind his desk: his short, slight but athletic build, his intelligent, shrewd, penetrating and slightly mischievous look, his dry sense of humour, attending to several different matters in quick succession in a focused, deliberate and very determined way of being that was so typical of him. His mind, his conversation and his life were completely focused on Explorer's Inn. He was a part dreamer and part pragmatic businessman, determined to the point of obstinacy: all qualities that were necessary to see Explorer's Inn become globally recognised.

His legacy is first and foremost the Explorer's Inn, but much more importantly, his critical role in pioneering and catalysing the transformation of Tambopata and Madre de Dios into one of the Amazon's and the world's centres for nature tourism and international conservation. While it was the logistics of managing and keeping the lodge afloat that consumed Max, I think it was the lodge's place and promise in the world beyond itself that sustained him. I think this was obvious to anyone who met with Max in his office, watching his expression and tone of voice visibly switch back and forth between enthusiasm and mild exasperation, depending on whether he was talking to his visitor about some event or hope related to research or conservation in Tambopata, or to an assistant about some question relating to the management of the Inn or the business.

After dedicating almost 40 years of his life to the Explorer's Inn, Max sold the lodge to a Peruvian entrepreneur in March 2014. He died exactly four years later, after a long and debilitating illness but peacefully and surrounded by some of his children. He is survived by six children from his first marriage and one child from his second.

Miguel Alexiades, June 2018

Peru News

At the end of 2017, President Kuczynski (PKK) surprised many by granting a full pardon to ex-President Fujimori on compassionate grounds. However, Fujimori faces further charges relating to his time in power and is not allowed to leave Peru. The decision prompted several cabinet ministers and members of PKK's own party to resign, leaving him with only 15 seats in Congress, and sparked street protests across Peru. The IACHR (Inter-American Commission of Human Rights) has asked Peru to reassess the decision. The release of Fujimori also split his family with his son Kenji supporting the decision but his daughter Keiko, whose Fuerza Peruana party controls the largest block in Congress - 61 of 130 seats - opposing it.

In March, President Kuczynski resigned when it emerged that a consultancy firm he owned had worked for Odebrecht, the Brazilian transnational which is mired in scandals across Latin America, when he was a government minister during the Toledo presidency (2000-2006). Odebrecht has confirmed that it paid Toledo \$20+m to obtain the contract to construct the Transoceanic highway across Madre de Dios. The latest data indicates that the road only accounts for around 2% of trade (\$2.7m) between Peru and Brazil because it remains cheaper to ship goods by sea from Lima to Santos than to move it overland.

PKK was replaced by Vice-President Vizcarra, the Ambassador to Canada, who has tried to stabilise the political and economic situation despite the Fuerza Peruana majority in Congress. Economic growth fell from 3.9% in 2016 to 2.5% in 2017, principally due to the damage caused by the El Niño floods.

In April, ex-President O. Humala and his wife, who had been imprisoned for nine months for receiving \$3m from Odebrecht, were released pending trial.

On a more encouraging note, the Peruvian Congress approved a new Climate Change law – the fourth country in Latin America to adopt such a law. Hopefully, it can be applied to reduce deforestation rates.

Another current topic of debate relates to the forthcoming release of several Sendero Luminoso leaders who are nearing the end of their 25 years' prison terms. Many are unhappy the idea that they will simply be released back in to society.

In mid-April, Peru hosted the biannual hemispheric summit bringing together leaders from across the Americas. President Trump, despite sending 500 US military personnel to Peru, decided not to attend at the last minute, whilst the invitation to President Maduro of Venezuela was withdrawn. The major focus of the summit was on corruption in the region.

In May, Boris Johnson made a brief visit to Peru to discuss post-Brexit trading relations.

We are grateful to the Peru Support Group (PSG):
www.perusupportgroup.org

and David Hill: @DavidHillTweets & www.hilldavid.com

TReeS Library: since June 2015, hard copies of documents/reports relating to Tambopata & Madre de Dios are no longer placed in the TReeS library. We will still list details of all new articles, documents and reports received / sighted in the newsletter (see below). Many of them can be traced via the internet while some directly linked to TReeS will be placed on the TReeS website. Recently received/sighted documents and reports -

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

- '*Capacidad de recuperación natural de la vegetación en cronosecuencias de áreas degradadas por minería aurífera aluvial en Madre de Dios*', B.Muñoz (Beca 2017 – thesis & report);
- '*Diversidad de chinches Coreidae (Insecta: Hemiptera) de la Reserva Nacional Tambopata, Madre de Dios*', M.Cárdenas (Beca 2014 - thesis & article);
- '*Determinación de línea base de la ornitofauna en Palmeras, distrito de Iñambari, Madre de Dios*', D.Olivera (Beca 2017 – thesis & article);
- '*Diversidad del orden Chiroptera en la zona de influencia del Manu Learning Centre*', S.Goizeder (Beca 2017 report & article);

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

- '*Good News Deforestation Stories (Peruvian Amazon)*', MAAP 64;
- '*Deforestation Hotspots of 2017 in the Peruvian Amazon*', MAAP 65;
- '*2017 Deforestation hotspots in the Peruvian Amazon*', MAAP 68;
- '*Alarming Deforestation Patterns in the Central Peruvian Amazon*', MAAP 69;
- '*"Hurricane Winds" in the Peruvian Amazon, a 13 year analysis*', MAAP 70;
- '*Gold Mining Threatens Amarakaeri Communal Reserve, Again*', MAAP 71;
- '*New Gold Mining Deforestation Zone in Peruvian Amazon: the Upper Malinowski*', MAAP 72;
- '*Landslides in the Peruvian Amazon*', MAAP 74;
- '*Pope to visit Madre de Dios, region with Deforestation Crisis (Peru)*', MAAP 75;
- '*Proposed Road would cross Primary Forest along Peru-Brazil Border*', MAAP 76;
- '*Deforestation Hotspots in the Peruvian Amazon, 2017*', MAAP 78;
- '*Seeing through the Clouds: Monitoring Deforestation with Radar*', MAAP 79;
- '*Amazon Beauty, in High-Resolution*', MAAP 80;
- '*Carbon loss from deforestation in the Peruvian Amazon*', MAAP 81,
- '*Climate Change Defense: Amazon Protected Areas and Indigenous Lands*', MAAP 83;
- '*Illegal logging in the Peruvian Amazon, and how satellites can help address it*', MAAP 85;
- '*Using drones to monitor deforestation and illegal logging*', MAAP 86;

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

- '*Conservation performance of different conservation governance regimes in the Peruvian Amazon*', Judith Schleicher et al, Scientific Reports [7: 11318], 2017;
- '*21st Century drought-related fires counteract the decline of Amazon deforestation carbon emissions*', L.Aragao et al, Nature Communications (2018) 9:536;
- '*Leaf-level photosynthetic capacity in lowland Amazonian and high-elevation Andean tropical moist forests of Peru*', N.Bahar et al, New Phytologist (2017) 214: 1002–1018;
- '*Maximising Synergy among Tropical Plant Systematists, Ecologists, and Evolutionary Biologists*', T.Baker et al, Trends in Ecology & Evolution article 2211 (2017);
- '*Biogeographic distributions of neotropical trees reflect their directly measured drought tolerances*', A.Esquivel-Muelbert et al, Scientific Reports - 7: 8334 (2017);
- '*Species Distribution Modelling: Contrasting presence-only models with plot abundance data*', V.Gomes et al, Scientific Reports - 8:1003 (2018);
- '*Amazon Basin forest pyrogenic carbon stocks: First estimate of deep storage*', N.Koele, Geoderma 306 (2017);
- '*The variation of productivity and its allocation along a tropical elevation gradient: a whole carbon budget perspective*', Y.Malhi et al, New Phytologist 214 (2017);
- '*Does soil pyrogenic carbon determine plant functional traits in Amazon Basin forests?*', K.Massi et al, Plant Ecology: DOI 10.1007 (2017);
- '*Persistent effects of pre-Columbian plant domestication on Amazonian forest composition*', C.Levis et al, Science 355 (2017);
- '*Recent changes in Amazon forest biomass and dynamics*', O.Phillips, RAINFOR (2017);
- '*Field methods for sampling tree height for tropical forest biomass estimation*', M.Sullivan et al, Methods in Ecology & Evolution - DOI: 10.1111 (2018);
- '*Rainforest & the carbon cycle: recent research in the Amazon*', O.Phillips & A.Esquivel-Muelbert, Geography Review (April 2018);

Other publications sighted -

- '*Diez años de minera en el Perú: 2008-2017*', J.de Echave, CooperAcción (2018);
- '*Field guide to Amazonian bats*', A.López-Baucells et al, INPA, 2016;

TReeS Newsletter by email

Due to higher postal charges, TReeS is now distributing most Newsletters by email. On this basis, if you have received this Newsletter by post and don't think we have your email address in our database, please email us at: treesuk1@gmail.com

Receiving the newsletter by post can still be requested.

General Data Protection Regulations (GDPR)

The distribution of the latest TReeS News was delayed by the need to comply with the new GDPR regulations. We have endeavoured only to send this newsletter to those who consented to receive it. If you feel that you have received this newsletter in error and no longer wish to receive TReeS News, please

... send an email to: treesuk1@gmail.com

OR

... write to us at the address below.

TReeS Archive

We have had to remove the TReeS archive – mainly pre-digital age internal and external documents (approx.20 box files) from the 1980s, 1990s and early 2000s – from where it has been stored for the last decade. We are reluctant to completely dispose of the archive.

If anyone is aware of a suitable location to store the archive, with or without public access, please could you send an email to us accordingly.



TReeS Greetings cards

Arcoiris: Rainbow vision (left)

(©Pablo Amaringo) &

Day of light (© Elvis Luna)

The 'Usko-Ayar' school of painting, in Pucallpa, is devoted to the rescue and preservation of the knowledge and the traditions of the indigenous people of the Peruvian Amazon. The paintings aim to document the flora, fauna, and culture of the Amazon, and to promote and preserve the traditional knowledge of medicinal plants of this region. Many talented indigenous artists have studied at the school.

Price: £5.00 for any 6, including envelopes and P&P.

TReeS Membership

The basic TReeS membership rate is still just £15 / annum.

Membership is due on the **1st of January** each year.

We would be most grateful if members could amend their standing orders, if necessary.

All cheques are payable to – 'TReeS'.

TReeS Membership:
£15 per annum.

TReeS contact details –
P.O.Box 33153,
London NW3 4DR

TReeS USA –

P.O.Box 842, Shasta Lake,
CA96019-0842, USA.

TReeS USA is run by Bud and Margaret Widdowson.

All members in Canada / the USA are requested to pay their annual membership via TReeS USA.

TReeS committee 2017-2018

Sally Edwards

John Forrest

Dr Helen Newing

Huma Pearce

Elizabeth Raine

Daniel Turner

Rebecca Warren

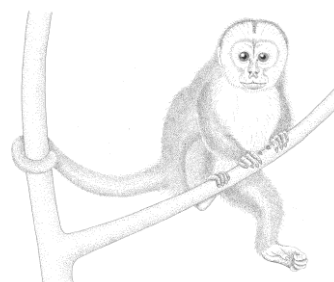
TReeS website

Details of **TReeS merchandise** can be found at the website:

www.tambopata.org.uk

If you would like to receive the TReeS Newsletter in future by email, please send a request to –

treesuk1@gmail.com



White-fronted Capuchin monkey © Laurel Hanna