

## The Rufford Foundation Final Report

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Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
<b>Your name</b>	Diego Franco Paredes Burneo
<b>Project title</b>	Delivering taxonomic resources needed for conserving the relict Andean forests in northwestern Peru: the Melastomataceae family in Piura
<b>RSG reference</b>	15565-1
<b>Reporting period</b>	17 <sup>th</sup> September, 2015 – 3 <sup>rd</sup> March, 2017
<b>Amount of grant</b>	£4036
<b>Your email address</b>	diegop.francob@gmail.com, diego.paredes1@unmsm.edu.pe
<b>Date of this report</b>	3 <sup>rd</sup> March, 2017

**1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Identifying the conservation status of relict Andean forests in Piura.				Most of the relict forests were accessible both via roads and in social aspects. Only one site was not possible to explore due to social conflicts, but local guides could comment about this forest's status. Establishing good relationships with villagers was decisive.
Updating the Melastomataceae checklist and describing species for Piura.				Collection was the most successful work with a relatively high number of useful samples. In collaboration with colleagues and intense herbarium revision, the identification and update have also been properly achieved. Deep exploration and observation in the field as well as a good training at herbarium are essential steps.
Describing the distribution patterns of the Melastomataceae members in Piura.				Clear and interesting patterns have been drawn with both our collections and herbarium specimens. Identification process as a previous step is decisive. We are looking forward to develop deeper analysis involving niche modelling.
Involving the local people in the activities developed in the project.				People were friendly and interested in participating; this was a crucial to work efficiently with them. They also knew the Melastomataceae members well, so that made even easier to highlight how important for ecosystems these plants are. Unfortunately, one village had conflicts with foreign people and it was not possible to work with them. The talks are remaining due to fire in many places in Piura (last months of 2016), personal activities of the main author, and difficult weather conditions since January 2017.

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

Identification of Melastomataceae species is hard due to biological processes such as hybridisation and similarity between species. Collaborative work with colleagues who understand more about those problems in the group was key for a better understanding and identification of the group.

The lack of reliance on foreigners did not let us work with one community. Luckily, comments from other local guides about the status of the forest let us know that it had a similar pattern.

Harsh environmental conditions are making it difficult to go back to Piura and share properly the outcomes of our research, the last part of the project. Firstly, wildfires in the last months of 2016 in many forests in Piura and surrounding places have destroyed an important area, unfortunately. Moreover, current heavy rain is blocking many roads in Piura highlands. We are waiting for a decreasing in rain intensity to proceed with the talks including both of these events in the discussion.

**3. Briefly describe the three most important outcomes of your project.**

- Evaluating the conservation status of relict forests:  
All the forests evaluated have a medium to high degree of degradation. We also found two vestiges of forests and a forest patch that were not previously reported in science. We recognised vestiges as areas with no forest but with flagship species whose distribution is this ecosystem as indication that forests were severely destroyed.



*Top of the forest in Canchaque. Notice the cloud cover.*

Forests with a high degradation were Aypate and Canchaque, both with a little area remaining and with constant human activity that threaten them with complete destruction. Luckily Aypate comprises an important Inca archaeological complex that partially protects it. Forests with a medium degradation were Cuyas (partially protected by some villagers initiative), Espíndola (firstly reported in science) and Mijal (with one of the larger areas and the highest diversity, see the table below).

- Updating the Melastomataceae checklist for Piura and describing the distribution of their members:

Here are reported six genera of melastomes, *Centradeniastrum* first listed for a forest in Piura. Seventeen species were found with four firstly reported for Peru (article in preparation). *Axinaea* aff. *grandifolia*, *A.* aff. *macrophylla*, *A. wurdackii*, *Centradeniastrum roseum*, *Miconia brevis* and *M. firma* are distributed only in relict forests of northwestern Peru and the last one only reported for Piura. Nine species are reported in Mijal, the one with the largest area in Piura and, comprehensible, with the highest richness. Besides, four of those nine species are only found in this forest, a reason to prioritise its conservation.

Additionally, representation of melastomes collection in herbaria has been greatly increased in about 100% to the previous number. Botanical samples are important to have a fine comprehension of taxonomy, biodiversity processes and species loss.

*List of Melastomataceae members and occurrence in the forests and vestiges (\*) in Piura*

<b>Genus/Species</b>	<b>Pingola*</b>	<b>Cuyas</b>	<b>Aypate</b>	<b>Frontera AY-HU*</b>	<b>Espíndola</b>	<b>Mijal</b>	<b>Canchaque</b>
<b><i>Axinaea</i></b>							
<i>Axinaea</i> aff. <i>grandifolia</i>					X		
<i>Axinaea</i> aff. <i>macrophylla</i>					X		
<i>Axinaea oblongifolia</i>			X	X		X	
<i>Axinaea wurdackii</i>						X	X
<b><i>Brachyotum</i></b>							
<i>Brachyotum andreanum</i>				X			
<i>Brachyotum quinquenerve</i> var. <i>pusillum</i>					X	X	
<b><i>Centradeniastrum</i></b>							
<i>Centradeniastrum roseum</i>						X	
<b><i>Miconia</i></b>							
<i>Miconia brevis</i>						X	

Genus/Species	Pingola*	Cuyas	Aypate	Frontera AY-HU*	Espíndola	Mijal	Canchaque
<i>Miconia cf. biappendiculata</i>						X	
<i>Miconia denticulata</i>		X	X		X	X	
<i>Miconia firma</i>		X	X		X		
<i>Miconia grayana</i>		X					
<i>Miconia lasiocalyx</i>							X
<i>Miconia loxensis</i>						X	
<i>Miconia lutescens</i>	X	X	X		X		
<b>Monochaetum</b>							
<i>Monochaetum lineatum</i>							X
<b>Tibouchina</b>							
<i>Tibouchina laxa</i>	X	X				X	X

- Sharing and spreading information:

Local people could identify melastomes under a scientific way and realise the importance of studying plants that do not have a use. They understood that all the members in a forest are important. Now, we have the challenge to spread this to more people.

Agriculture is the most important activity for all of the villages next to forests and also the main reason for cutting and logging. A factor to highlight is that they started to be conscious about protecting forests but a fundamental question raised: how do we do to live? We think that solving this question is the next level of this work.

**4. Briefly describe the involvement of local communities and how they have benefited from the project (if relevant).**

While doing the fieldwork, we worked together and directly with local people. Their contribution consisted in helping us to look for all kind of vegetal formations in the area, collecting melastomes, and sharing information about the use they give to the forests and the main antropic activities. In the process, we shared with them about the importance of all forests components and highlighting the benefits they can get from these ecosystems in a sustainable way. Moreover, we all enjoyed with general curiosities they had, as medicinal plants, our job, our interest in biology and conservation. As they have little to null contact with scientists, we think that now they appreciate a bit more about research and its importance.

**5. Are there any plans to continue this work?**

Definitely, yes. A great percentage of original relict forests extension has been severely destroyed and we are really involved and keen with the idea that scientific

contribution should be higher and go directly to local communities. As a next step, awareness and planning alternative ways to use forests in a sustainable way (co-working with them) are our main goals.



Relict forest in Mijal and a villager. Notice how devastating is human-provoked fire.

### 6. How do you plan to share the results of your work with others?

We have already been sharing some results with villagers during the fieldwork, mainly from our previous herbarium revision and new things that we were learning visiting the area. The next step to share with local people is giving short talks with the information compiled in posters, especially with farmers and people involved in small conservation areas.

**BOSQUES DE VERTIENTES OCCIDENTALES DE PIURA MELASTOMATACEAE**  
Diego Paredes y Asunción Cano  
Laboratorio de Florística, Museo de Historia Natural UNMSM, Av. Arenales 3256, Jesús María, Lima.

**¿Es importante conservar los bosques? ¿Por qué?**  
Captan y reservan AGUA.  
Reservan CARBONO, regulan el efecto invernadero.  
Tienen innumerables RECURSOS NATURALES.  
Conservan los SUELOS, aportan nutrientes.  
Albergan plantas y animales en vías de EXTINCIÓN.

**¿Son todos los bosques iguales? ¿Qué de especial tienen estos bosques?**  
Presencia en el OESTE de Perú: Cajamarca, Piura, Lambayeque, La Libertad.  
Son uno de los ecosistemas con mayor biodiversidad del planeta: PUNTO CALIENTE.  
Se estima que queda el 30% de su TERRITORIO ORIGINAL, por causa del hombre.

**¿Las plantas del bosque son importantes? ¿Por qué?**  
Favorecen el buen FUNCIONAMIENTO del ecosistema: polinizadores, controladores de plagas, etc.  
Melastomataceae presenta 16 especies, 9 ENDEMICAS de Piura y en vías de EXTINCIÓN.

**¿CÓMO IDENTIFICAR LAS MELASTOMATACEAE? DE LOS BOSQUES DE VERTIENTES OCCIDENTALES DE PIURA**  
Diego Paredes y Asunción Cano  
Laboratorio de Florística, Museo de Historia Natural UNMSM, Av. Arenales 3256, Jesús María, Lima.

<b>MELASTOMATACEAE</b> Este grupo de plantas se caracteriza por tener flores que se abren por las tardes y en sus hojas.	<b>Acinosa oblongifolia</b> Arbusto 1-1.5 m. Flores blancas. Epigrama	<b>Brachyotum andrzejewskii</b> Arbusto 1-2 m. Flores blancas. Epigrama
<b>Acinosa sp.</b> Arbusto 1-2 m. Flores blancas. Epigrama	<b>Miconia brevis</b> Arbusto 2-3 m. Flores blancas. Epigrama	<b>Miconia biapiculata</b> Arbusto 2-3 m. Flores blancas. Epigrama
<b>Brachyotum guineense var. gracillimum</b> Arbusto 2 m. Flores blancas. Epigrama	<b>Miconia firma</b> Arbusto 2-3 m. Flores blancas. Epigrama	<b>Miconia lasiocarpa</b> Arbusto 2-3 m. Flores blancas. Epigrama
<b>Centradenium roseum</b> Arbusto 2-3 m. Flores blancas. Epigrama	<b>Miconia laxa</b> Arbusto 2-3 m. Flores blancas. Epigrama	<b>Monochaetum lineatum</b> Arbusto 2-3 m. Flores blancas. Epigrama
<b>Miconia denticulata</b> Arbusto 2-3 m. Flores blancas. Epigrama	<b>Miconia laxa</b> Arbusto 2-3 m. Flores blancas. Epigrama	<b>Miconia lutescens</b> Arbusto 2-3 m. Flores blancas. Epigrama

Posters to share results with local people about relict forests (left) and Melastomataceae members (right).

Currently a scientific article with the new reports of the family members, not only for relict forests, but also for other ecosystems in Piura, is being written. Besides, at least a couple more of articles about relict forests conservation status and a short monograph on Melastomataceae are also planned. We are also keen to share this information in some symposia highlighting the importance of research in highly threatened areas and involving local people.

**7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?**

Fieldwork and herbarium revision have been done according as planned: from October 2015 to August 2016. Unfortunately, talks with more information are already delayed due to the environmental conditions explained above.

**8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Transport costs: bus tickets	240	240	0	Considering the tickets to be got soon.
Transport costs: local transportation	1197	1593.1	+396.1	Fuel costs increased. Considering the same price for the forthcoming trip.
Travel expenses and accommodation	1057	901.7	-155.3	Food was cheaper in small villages.
Local assistance hire	419	419	0	Fair payment.
Printing of guides	179	0	-179	According to the conditions in villages, posters have a better spread. Guides could be lost when given. Therefore, we increased the number of posters.
Printing of posters	102	293.4	+191.4	We printed more posters (two types of posters were made).
Processing and transportation of samples	6	11.1	+5.1	A higher amount of collection.
Fieldwork material: collecting plants	25	27.6	+2.6	A higher amount of collection.
Fieldwork material: Digital camera	598	368.2	-229.8	Purchased in discount.
Fieldwork material: Handheld GPS device	198	179	-19	Purchased in discount.

Fieldwork material: Handheld magnifying- glass	15	13.5	-1.5	Purchased in discount.
<b>Total</b>	4036	4046.6		

**9. Looking ahead, what do you feel are the important next steps?**

As explained above, awareness and planning alternative ways to use forests in a sustainable. The first part of awareness made with the current project taught us how crucial is looking for patent and affordable plans (once again with the vital contribution of local people).

**10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?**

Yes, the two kind of posters we made have The Rufford Foundation logo not only as a duty but also as an acknowledgment (you can see it on posters, section 6, above).

**11. Any other comments?**

It is challenging to conduct a project involving not only a robust scientific methodology, but also involving community. Local people may be sceptical at first, so being honest and clear enough with them (like showing your work or how passionate you might be) is a key step. Conservation plans mean nothing if local people are not the main actors.