

The Rufford Small Grants Foundation

Final Report

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

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. 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. 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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details

Your name	Jaime Andrés Cabrera
Project title	Natural licks ecology in the southern Colombian Amazon
RSG reference	04.02.09
Reporting period	September 2009 – September 2010
Amount of grant	£ 5975
Your email address	jac56@kent.ac.uk
Date of this report	6 October 2010

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
Location of licks			x	I have located 12 licks in the Caquetá middle basin and 13 in Amacayacu National Park. All of them used for camera trapping and direct observations.
Soil sampling and analysis			x	I have soil samples from the licking spots and surrounding areas for six different licks, enough to do some lick typology that takes into account the structural and physico-chemical characteristics of the licks, complementing the local view and the typology resulted from animal use.
Understanding indigenous communities' relationship with animals and licks			x	Indigenous culture is oral - during the last 2 years I have been living with them, documenting the way they use licks and their beliefs. This process has proved very rewarding because it has involved working with elders and the younger generations from different ethnic families. All of them agree in the sacred role of the licks and their importance for daily life as food providers. All this information is helping us to develop a sustainable use plan that takes into account the local views.
Understand how natural licks work			x	I have a good collection of field data (more than 3000 camera days) that reflects the variability according lick types, hunting pressure and animals abundances. This very same data will let me understand the use patterns by species along the different weather conditions that surely enough have an effect in animal visitation. I am also working to develop a protocol to estimate animal abundances, a baseline information needed for management.
Monitoring hunting activities inside and outside the licks		x		Self-recording of the hunting by the indigenous hunters has proved very inconsistent, but still the data reflects the overall pressure in each lick's type and will let us do some correlations with the amount of animal visitation and behaviours at the lick.
Setup long-term monitoring plan		x		One of the main results from the project is the use of cameras by the people from the

<p>carried out by the communities</p>				<p>communities to monitor animal abundances and manage their hunting in a sustainable way. Now that they know how to use the cameras we will have in December, what we called a “Tapir festival”: a celebration where the different communities that have been working in the project, and myself, will show our results and exchange experiences and ideas about things to come.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Maintain local people interest and commitment with the project has proved to be challenging, if I do not stay the whole time based in each community and without a continuous money flow (salaries) to the local photo-collectors. The plan has been to make the camera trapping a project of their own now that I am leaving for a year to write my thesis. The “Tapir festival” idea has proved very successful to make people be more interested in the long term monitoring and the photos that it produce. The Festival will be an opportunity to show “their” animals and work to other communities, indigenous reserves and institutions and share their traditional knowledge.

About the money issue, very important if we want the monitoring to continue in the long term, we are setting up a beekeeping project using local bee species, that will provide honey to the communities and hopefully some extra for sale.

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

With this project I intended to develop a comprehensive view of the licks as resources important for animals and humans alike, by means of understanding how natural licks work (ecology), and determine the effects of their use as hunting grounds by the indigenous people in order to develop community based sustainable use practices. To do that I addressed the following working hypothesis:

1. There are different recognisable types of licks in the Amazon, each one sustaining a different set of species.
2. There is an effect of hunting activities in the frequency of animal visitation at natural licks.
3. Licks are important features in the social behaviors of the species that visit them, especially for tapirs.

From which five main questions arise:

1. How is the relationship between local indigenous people and the natural licks?
2. It is possible to have a typology of the natural licks in the study area based on the animal use and their physical (habitat structure) and chemical characteristics?
3. How are the use patterns and the ecological processes that happen at licks? Meaning which species use them, how often, possible intra and interspecific interactions, and whether there are habitat characteristics that drive the lick use.

4. Is animal visit frequency changing according to the hunting activities at the licks?
5. There are frequent social interactions between individuals of the same species that visit the licks?

With more than 3000 camera/days recorded, now I have enough data to answer all these questions, make some generalizations and understand how licks work in the Amazon, taking into account the annual climatic cycle, geologic lick's origins and the different hunting pressures due to cultural and economical differences. These generalizations will have a strong basis due to the comparisons between Araracuara and Amacayacu; places with different geology and indigenous cultures but the same amazonian mammal community.

The relationship between indigenous people and their environment change according to their indigenous family backgrounds, some of them are more hunters than others that prefer fishing, farming and now the tourism. Nonetheless all of them show the same principles of social interaction with nature that rules the way they use the licks, although the westernized point of view is having its effects in species richness along their traditional territories.

The final results and conclusions have to wait until next year when I will be full time analyzing the data and writing my thesis dissertation. I will also finish the photo-identification process, which will allow us to setup a monitoring plan for the mammal species that use the licks.

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

Since the beginning of the project the elders and young leaders of the community have taken an active part in it. The elders' stories and insights in the local culture have been the basis to understand the current use of the licks. At the beginning of the project there were obvious conflicts between elders and the younger generations, with the elders feeling younger people were "careless concerning nature". Thanks to the project's daily work in the communities, the elders' interest in rekindling old ways, and the willingness of the younger generation to understand the old ways if it enables them to secure special government grants to indigenous people, we compiled traditional knowledge in the form of drawings and transcriptions of tales that now are used in the local primary school. Another tool will be a set of flipbooks that will show the actual animal behaviours at the licks. The books will be given to the community members as a way to share the results from the project.

We are also working in what we called "Community-based camera trapping". A plan for the communities to use the camera traps to do their own monitoring programme, helping them to make a sustainable use of their resources. The presentation of this plan will be done in December 2010 in the "Tapir festival" that will be also a great way to share the results with the local indigenous people and encourage them to continue in the conservation and management process we started. I have joined efforts with Fundación Nativa and the Park staff to organise the "Tapir festival": a celebration to take place in the nearby communities of Mocagua and San Martin de Amacayacu next December. This will be the opportunity for the Tikuna, Muinane, Matapi, Nonuya and Andoque co-researchers that have been working with the project, to share the knowledge gained during the last 2 years and show the photos from the cameras to a wider audience. This will be also an opportunity to share their traditional knowledge and build the basis for a long-term self-monitoring plan using the cameras.

5. Are there any plans to continue this work?

Yes, we will continue to monitor the licks following the community camera trapping protocol in a joint effort with the Park staff. The results will permit the communities to self assess the effect of their subsistence hunting.

We are also beginning to use this very same approach in other areas as Sierra Nevada de Santa Marta and San Agustin with other indigenous people.

There is also necessary to continue the study of licks' ecological use patterns to clearly understand the role of these places in the animal dispersion and the possible source-sink dynamics for *T. terrestris* in the study area. In order to do that it will be necessary to do some radio collaring and genetic studies that will help to understand the behaviours I recorded at the licks and the important role of licks in the social life of most of the herbivorous species in the Amazon region therefore their relevance for sustainable use and conservation.

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

My PhD thesis, several scientific articles (both in journals and in popular scientific publications) will be produced. With the community we are also planning to produce more material to be used in the local schools, both in the local indigenous languages and in Spanish, such as the flipbooks that will show animal behaviours at the lick.

We will also have the "Tapir festival" where different ethnic families will share their traditional knowledge and the results from the cameras in their own reserves as a starting point for the local communities' proposed management plans.

7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

We used the RSG from September 2009 to September 2010 as planned.

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
Local services (indigenous assistants) field	2400	2400		From RSG
Subsistence	3000	3000		From other sources
Transport	2100	1700	400	From RSG and other sources. We manage to reduce the river transportation expenses due to the last 4 months dry spell that let us make a lot of our trips by land. The £ 400 difference was used to print the flipbooks and other necessary

				material for the upcoming Tapir festival.
Materials	2575	2575		From RSG
Miscellaneous	800	800		From other sources
TOTAL	10875	10475	400	1 sterling pound=2847.04 Colombian Pesos

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

- Continue documenting of traditional knowledge in a joint effort with the younger indigenous generations.
- Continue monitoring hunting and assessing wildlife populations.
- Follow some individuals with radio collar to better understand the behaviours recorded at the licks.
- To devise a plan that make the communities to be interested in monitoring, this should include yearly tapir festivals to share results in a regional/national level and offer economic activities that helps the maintenance of the monitoring. We are already working with some communities to setup beekeeping small projects that provides some money back to the communities and help to lower the hunting impact.

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

Yes, in:

- Seminars at University of Kent.
- Internal staff talks at TROPENBOS Colombia, Fundación NATIVA and National Natural Parks Office.
- Presentation of the project at the local indigenous communities in the study area.
- Flipbooks that will be given to the communities in December at the Tapir festival.
- Upcoming presentation in Conference on Conservation Science in Cambridge.

11. Any other comments?

I am sending few photos in another message and will send to you all the documents resulting from this project (thesis, paper, etc.) as soon as I do all the data analysis and have them ready.