

## 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. 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**

Grant Recipient Details	
<b>Your name</b>	Juan Carlos Cusi Martinez
<b>Project title</b>	Conservation and Inventory of Amphibians at the Tabaconas-Namballe National Sanctuary, Cajamarca, Peru
<b>RSG reference</b>	12427-1
<b>Reporting period</b>	Annual
<b>Amount of grant</b>	£6000
<b>Your email address</b>	jcarloscusim@gmail.com
<b>Date of this report</b>	16-07-2014

**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
Assess amphibian diversity contributing to more consolidated knowledge about this endangered group in TNS			Fully achieved	Herpetological reports inside the Tabaconas Namballe National Sanctuary (hereafter TNS) recorded 13 amphibian and six reptilians; however our project raised its richness in six amphibian and one reptilian. This records include range distribution extensions and new amphibian species, as well as accumulation of ecological data (air temperatures, body temperatures, incidence of chytrid fungus and other relevant data)
Develop an education programme to raise local awareness about conservation of amphibians and natural ecosystems			Fully achieved	A workshop directed to TNS park rangers and professional staff was developed in Chichilapa Biological Station. In this workshop, we showed our results, findings, and we proposed a biological monitoring protocol long-term. A field guide with photographs of amphibian will be made and subsequently will be distributed between park rangers with supporting of The Field Museum, Chicago. Didactical material as t-shirts (25 units); stickers (five types, 200 units); signs (five types, 200 units); postcards (four types, 200 units); keychains (five types, 100 units) and posters (25 units) were disseminated to all participants of lectures, workshops and meetings. A presentation titled "Conservation and Inventory of Amphibians at the Tabaconas-Namballe National Sanctuary, Cajamarca, Peru" was performed at Tabaconas Municipality with participation of the Mayor and local stakeholders on June 13th. In a primary and secondary school, we presented one class about amphibian conservation in a more comprehensive language took place Tabaconas and Tamborapa villages (June, 14 -15th) with the dissemination of didactical material. One scientific article is

				<p>been submitted in the Checklist journal (Geographic Distribution of <i>Cercosaura vertebralis</i> O'Shaughnessy, 1879 (Reptilia: Squamata: Gymnophthalmidae) and the Status of <i>Cercosaura ampuedai</i> (Lancini, 1968)). Also, we are writing draft versions of two articles: one about the record of chytrid fungus in Peruvian northern and the other is a description of a new species of salamander <i>Bolitoglossa</i> sp at TNNS. One Master studio will employ the data of the salamander <i>Bolitoglossa</i> sp. with purpose of understanding the phylogenetic relationships of the genus <i>Bolitoglossa</i> in Peru.</p>
Design and implement a biological monitoring program addressed to forest rangers, TNNS staff and local communities			Fully achieved	<p>The fieldwork and collecting methods applied along this project have been embodied in a monitoring protocol, which was explained in a workshop directed to park rangers issued on June 10 and 11th 2014. Seventeen park rangers were trained in management of amphibians, collecting of biological data, application of sampling methods and analysis. A field rapid guide on amphibian identification (including photos, maps and a brief description) is being finished. Subsequently, the field rapid guide will be delivered to park staff in PDF format.</p>

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

A minor difficulty was the absence of communications with local authorities (as Mayor of Tabaconas Municipality) that influenced our educational objectives and prolonged the duration of the project, since they were not easy to find and coordinated the activities planned. Important events during the rainy season as are intensive rains that fell in Peruvian northern between February and May 2014, prohibited to us perform the last trip with educational goals. The Tabaconas village was isolated for longer than one month because of fallen bridges and roads. For this reason, we planned a fourth trip in June 2014, without risking the life of the team.

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

- 1) A workshop titled "Conservation and Inventory of Amphibians at the Tabaconas-Namballe National Sanctuary, Cajamarca, Peru" was developed at Chichilpa Biological Station involving 17 park rangers and four professional staff of this natural protected area. The topics discussed were: a) species richness, b) abundance, c) habitats preferences (montane forests

or paramos) d) potential threats about amphibian populations e) monitoring protocol and f) conservation of forests and wildlife fauna. Other lectures were given in a Primary School in Tabaconas village (San Miguel de Tabaconas National School N° 16534) and in a Secondary School in Tamborapa village (San Rosa de Tamborapa National School N° 16537). These lectures were in a comprehensive language, showing amphibian importance as key point in the conservation of the forest and important resources in the ecosystems. Professors and students (between 7-15 years old) were very participatory. Finally, a meeting with the Mayor of Tabaconas Municipality (Joel A. Campos), TNNS Chief's (Douglas Cotrina) and local people showed our principal results and futures goals, which were taken within environmental strategies by Municipality. Also, we highlight the importance of the conservation and ecological tourism in Tabaconas village, where local people can offer lodging, selling of artisanal souvenirs and guide services within TNNS below management of headship of the Sanctuary National.

- 2) One identification rapid guide on amphibian from Tabaconas Namballe National Sanctuary is being finished, which collect bibliographic information and recent data done in the fieldwork. This guide includes photos, maps and a brief description of the amphibian species. In the last section, we will show the monitoring protocol with basic comments on data collection. The design was sponsored by a graphic designer (Luis Jordán) in Lima city.
- 3) The didactical material prepared includes t-shirts, stickers, signs, postcards, keychains, posters and a banner. Their designs were partially sponsored by NGO Asociación Pro-Fauna Silvestre. These materials were disseminated to park rangers, students in primary and secondary schools, local people and regional authorities as a sample of our effort by reach amphibian conservation and environmental awareness. Additionally, we elaborate a blogspot (<http://herpetofaunasntn.blogspot.com/>) with a website designer that will permit us to receive comments and contributions on the conservation inside TNNS. This tool will publicise our progresses, especially scientific articles.
- 4) One scientific article about range distribution extension of *Cercosaura vertebralis* was submitted to Checklist journal and two articles are being prepared. The second article is a description of a new species of salamander *Bolitoglossa* sp. with the inclusion of a phylogenetic analysis. One Master thesis developed at San Marcos National University (by author, Juan Cusi) is employing the data of the salamander *Bolitoglossa* sp., with goal of understand the phylogenetic relations of this poorly known genus in Peru. Finally, these scientific contributions will be uploaded in the TNNS BlogSpot and printed versions will be sent to of headship of the Sanctuary National.

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

Local communities of Tabaconas, Miraflores and Pueblo Libre benefited through the distribution of material didactical (principally Tabaconas by your easy access and positive reception to our research; however we coordinate with headship the dissemination of some samples of the material in the other villages). The presentation of a lecture in a primary and secondary school at Tabaconas and Tamborapa villages (June, 2014) was one benefit. Also, local communities were involved in

providing resources in the development of the fieldworks as local guides and animals (donkeys or horses) for material transportation inside Tabaconas Namballe National Sanctuary.

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

My plan is to continue with a detailed studio on amphibian populations at the TNNS, in particular to monitoring the dissemination of the chytrid fungus, pathogen that is dramatically threatening to amphibian species worldwide. Our preliminary results showed a low incidence of the fungus about amphibian populations inside TNNS. It is a first record of the chytrid fungus in the Peruvian extreme northern, which permits to take preventives actions, control and monitoring of the fungus. Additionally, the findings of potential new amphibian species (one salamander and one caecilian) increase our interest to detect of the species real richness. The training of the park rangers and workshop in the Tabaconas Municipality helped to awareness in the conservation of wildlife flora and fauna. Undoubtedly, the diffusion of the information on local herpetofauna, promote the generation of researches in this area. So, this project has had considerable attention by Sanctuary's office and our information will be included in the next Master Plan (2015-2020) and next biological studies.

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

Our results will be disseminated through three resources of information. In a popular level, it implicates the dispersion of didactical material (t-shirts, stickers, signs, keychains and brochures) in the Tabaconas community including children, local people and authorities. In a scientific level, I will publish three articles in journals about our findings. One is a range extension of a Gymnophthalmid lizard *Cercosaura vertebralis* (in collaboration with Dr. Tiffany Doan and it soon will be publicised in Check List journal), the second one is a description of a new species of salamander *Bolitoglossa* sp. in a montane forest inside TNNS (in collaboration with Dr. Rudolf von May) and last one is the first record of chytrid fungus on amphibian population in TNNS (in collaboration with Dr. Vance Vredenburg). In a technical level, I will print a monitoring guide and photographical field guide to deliver to park rangers. Also, we recently elaborated a BlogSpot (<http://herpetofaunasntn.blogspot.com/>) which will permit to update constantly information about our project (news, reports, articles, photos and progress of the research).

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

The RSG funds were used in three fieldwork trips to Tabaconas Namballe National Sanctuary, which were directed to Chichilapa Biological Station, Lagunas Arrebiatadas, El Sauce and Pueblo Libre. The funds were used in February 2013, August 2013 and January 2014. The last trip done on June 2014 was self-financed. Unfortunately, it was not possible follow the preliminary timescale, since events out of our control (extreme rains, road closures and fallen bridges) postponed the fieldwork. Constant communication with TNNS Chief's helped to establish trip dates, without risking the life of the team.

**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.**

1, 00 GBP = 4, 66 PEN

Item	Budgeted Amount	Actual Amount	Difference	Comments
Collecting Permit by the Ministerio del Ambiente – SERNANP	119,00	316,51	-197,51	By Peruvian official resolution on 2012, collecting permits were increased in 300%.
Field Equipment-Materials (Head lamps, batteries, cloacal thermometers, anti-snake bite kit, rain cover for equipment, plastic cans, plastic barriers, buckets)	1588,00	1739,03	-151,03	The equipment bought will be used in next projects (IR Thermometer, GPS and HOBO Thermometer). HOBO Thermometer permit to record environmental temperatures data constantly for a period of time.
Work materials (Nets, cotton bag, gloves, several Ziploc bags, ethanol 96%, paper towels, bags, notebooks)	520,00	518,10	1,90	Some basic materials were donated by Herpetology Department at MUSM.
Transportation for fieldwork	1243,00	1458,16	-215,16	Reflects additional fieldwork.
Food for fieldwork	1100,00	1106,74	-6,74	We covered the food of the park rangers who supported us in the fieldworks and camps. Also, we offered feed to local guides who guided us within TNNS.
Local Guides, animals rent and stipends	280,00	332,85	-52,85	Local guides were accessible to camp in the forest; however the stipends were slightly increased by day.
Documentation, Preservation and Storage of Specimens (Camera, Anaesthetic, 2 ml tubes, 250 tubes and swabs for chytrid collection, forceps, scissors, pens, jars)	190,00	225,92	-35,92	The analyses of swabs samples were performed at Department of Biology, San Francisco State University (USA); and they had a cost \$ 4 dollars by swabs.
Presentations of reports, posters, monitoring guides	960,00	1012,12	-52,12	Costs were partially sponsored by NGO Asociación Pro-Fauna Silvestre
<b>Total</b>	<b>6000,00</b>	<b>6709,43</b>	<b>-709,43</b>	

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

A relevant next step in the project is to implement a monitoring programme of chytrid fungus and develop complementary fieldwork in areas unassessed in this study (as a Rio Blanco and Huancabamba). To date, it is known only 30% of the TNNS territory and posterior expeditions in unexplored areas will help to discover numerous new species and collect information on its lifestyle. Also, developing progressive workshops in the communities of the TNNS will help to increase the awareness on the conservation of the forests, fauna and flora; and contribute to local people collaborate actively with park rangers. The dissemination of the results at schools, institutes and universities will stimulate to students to involve in the conservation, taking amphibian as conservation target.

**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?**

The RSGF logo was used in the elaboration of all didactical materials produced in this project. The materials included posters, stickers, t-shirts, signs, keychains, brochures and field guides. In the training course for park rangers and workshop in the Tabaconas community presented a banner with RSGF logo and other sponsors (MUSM, TNNS and Pro-Fauna Silvestre). The scientific articles submitted to journals expose special acknowledgements to RSG for your meaningful support in this project.

**11. Any other comments?**

Juan Cusi is sincerely thankful to the Rufford Small Grants Foundation for give me a grant and support this project that searched for highlighting importance from TNNS.