

The Rufford Foundation Final Report

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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Arturo Munoz Saravia
Project title	Bolivian Amphibian Initiative
RSG reference	1047-C
Reporting period	April 2013 –May 2015
Amount of grant	£25,000
Your email address	Hyla_art@yahoo.com
Date of this report	30 June 2015

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
Amphibian surveys: (15 sites surveyed with data about diversity, relative abundances and natural history information)			yes	We carried amphibian surveys in more than 15 localities; we worked mainly with critically endangered species. This is the case of <i>Telmatobius gigas</i> known just from one locality since its description, now we report the species in more than 10 new localities and a distribution of more than 70 km in the Huayllamarca mountain chain. This is the same case of <i>Psychrophrynella Illimani</i> another critically endangered frog known just by the description of the species. We now provide information about real distribution that increase to several other localities and also a lot of new information about natural history and conservation status. We also monitored the critically endangered Titicaca water frog for this 2-year period in different localities to understand the real situation of this species and also about the natural history and biology of the species. In some of the cases we were able to produce different research thesis and others that are ongoing.
Amphibian surveys: (Chytrid samples for all species present at different places)			Yes	From the different places we worked, we collected swab samples to try to understand the situation of the populations regarding Chytridiomycosis and for some populations we already knew the pathogen was present we monitor this during this period, in some places and for some species we did not find Chytridium in the area, but in others unfortunately yes. There still some samples to be analysed that we need to work with and probably the next months we will get the information of the results.
Training: One amphibian conservation course carried out per year			Yes	In 2013 we organised with the support of other project the high Andean amphibian course were we got 23 participants from different countries of South America, where they learned about amphibian research and conservation in Andean ecosystems.

				<p>In 2014 we organised together with Amphibian Ark the amphibian husbandry course for different Bolivian participants of different organisations, where they acquired basic knowledge and skills about captive breeding planning and management about amphibians.</p> <p>We also tried to organise for a first time another extra course, in this case a little bit different where the participants had to invest economically to help cover the costs of the course, but in this case were not enough applications and we decided to postpone this third extra course.</p>
Training: Capacity building			Yes	<p>During the period of these 2 years we had several people trained in the work with amphibian conservation, we had national and international internship students, volunteer students assistants carrying out different work in research, education and captive breeding work, at the moment we have 18 members in our project working in the different areas, almost all of them students or young biologists that are learning new methods and acquiring skills for future conservation work. One bad side is that sometimes we train people with very useful skills but at the moment to keep them working for us or conservation it is difficult because the lack of economic resources that will help us to keep working with them. For this we are trying to get some other sources and ways to do this project sustainable but also to grow up in number of staff that will allow us to be more effective in our work.</p>
Conservation Education: Educational material for workshops and activities		Yes		<p>We were able to prepare different educational material such as calendars, posters, puzzle games, customs, etc. for children to be used in the workshops and also some other activities. We produced different things such as audio spots or publications that could be useful for general public and in our activities. Unfortunately in some cases we did not had a success to produce some of the ideas we had such as wall paintings in local communities, because we wanted to involve local communities in the work. In these localities the priorities were others and it is difficult to have a real support even we work with them for a long period. We also wanted to produce material for</p>

				children like some games, but unfortunately the last months our time was more focused to research due a massive death event in one area of one of our species and we had to allocate more effort to this subject to try to understand the situation and to organise the next steps with other researchers, organisations and government.
Conservation education: Educational workshops			Yes	We carried out different educational workshops in local communities trying to share the information about amphibians and he amphibian crisis. We mainly did that in schools where we coordinated with local schools and also with some authorities. As part of the internship program we give we carried out an educational research and activities during about 6 months. We also carried out workshops with adult people with other level of information. We also used a tool we are trying to improve that gave us better results is to do the activities outdoors where children or adults can have a direct contact with the habitat where amphibians are present and also have more dynamic activities, but we still need to improve this way to do education because it needs more planning and resources.
Conservation education: educational activities in the Natural History Museum in Cochabamba			Yes	Using the amphibian exhibition at the museum in Cochabamba we carried out different activities to share information about amphibians and its crisis. As part of an internship programme we carried out educational activities for children from urban schools that visited the museum and had different activities learning and playing about amphibians. We also participated in different activities that the museum was organising, where we received more than 2000 visitors for activity. This allowed us to reach a good number of people that can get at least some basic information about the amphibian situation. We did not have an answer from different schools that we invited for the activities in the museum, but we plan to start doing some connections that will allow us to be more effective to use the museum facilities for our activities.
Captive Breeding: A safety population of endangered Bolivian			Yes	We improved our captive breeding facility with more space and areas where we can work with endangered species of frogs of the genus

amphibians			<p><i>Telmatobius.</i></p> <p>We already got different offspring of different species and among those, Titicaca water frog a critically endangered Bolivian amphibian. Those at the moment are already adults and trying to breed. We are working with the captive breeding guide that can be used by other organizations in Bolivia and other countries. Now after some years of experience with different species we also are starting to coordinate with the government the first reintroduction trials and studies to see how it is going to work.</p> <p>At the moment with the massive deaths of Titicaca water frog in the Bolivian side of the lake reported the last months we are coordinating with the government to start working to stablish a safety population of the species in our facilities and to improve our facilities and work to be able to act at the moment with this species, we also are going to collaborate to stablish new captive breeding facilities in other organisations in Bolivia where we are going to share our experiences and provide as much support as possible.</p>
Captive breeding: studies of captive populations of Bolivian threatened amphibians		Yes	<p>We carried out different studies in our facilities to be able to understand the different species and also to learn new tools that we could use in the future. This is the case of some research projects with different marking techniques that can be used in <i>Telmatobius</i> frogs, the use of hormones for artificial breeding support of different <i>Telmatobius</i> species. Diet habits of <i>Telmatobius</i> frogs. Advertisement calls in the Genus <i>Telmatobius</i>. All these studies were already presented in the Bolivian ecological congress in 2014. We also are carrying out different studies about the breeding strategies and feeding behaviour of different species of <i>Telmatobius</i> in captivity. One of our limitations is the lack of resources and people that can carry out different potential studies, for that we are now coordinating with some national and international organisations that can be interested to carry out different studies together with us.</p>
Captive breeding: Improvement of the		yes	<p>For the amphibian exhibition in the Museo de Historia Natural Alcide d'Orbigny we installed a</p>

<p>exhibition of the amphibians in the museum and creation of interactive games about amphibians</p>			<p>new terrarium and information posters with local species of amphibians and some of them are threatened. This with the goal to have a better link with local visitors and the work we are carrying out in Bolivia but also with local species. At the same time we developed different material used in the exhibition and activities carried out in this area for general public and school children. One of our problems is that we do not have too much space in this area of the museum so we need to find the ways to provide different messages in this area but also without overloading the area of messages, we are trying now also to use other spaces outside of the main building of the museum to be able to reach more people with more information.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

In the research component sometimes we have problems with availability with reagents used for our fieldwork, with the consequence that we did not get the needed data, for this we are trying to get all these reagents well in advance but sometimes to import takes a lot of time because are materials we cannot buy it in Bolivia. We also are coordinating with volunteers and organisations that come sometimes to Bolivia that can bring this material.

We also had some issues to organise the data as we would like to do it. This because we are working with different people that sometimes do not take care of all the database maintenance, for this we decided to evaluate the database more regularly and to improve the monitoring of all the data, in this way will be available in our database.

In the capacity building we tried to organise a course as before but in this case without covering costs or almost no cost of the participants. In this case we did not have big numbers of applications as before and most of the applications were mainly from other countries. We are trying to fix this situation because we don't want people in the courses that come just for a certificate or because they do not to invest too much, so probably the next time we are going to do it in a different way so in this case we are going to invest in people that are going to really use the knowledge we want to be used in amphibian conservation.

In the captive breeding we had some issues with water management in our facilities that after some months working in this problem we were able to fix it and we also are coordinating with other organisations outside that are helping us with some advice that is helping us to improve our work. Another issue now is that we are starting to see that our capacity is on the limit with the number of offspring we have of the different species and for this we are trying to do the next step working with reintroduction of some of the species and also to increase the size of our facilities to be able to work more intensively with some of the species that are in urgent need, this is the case of Titicaca water frog.

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

In the research component we were able to find again two species that were almost unknown and we were able to provide a lot of new information about distribution, natural history and conservation status. Working also with the monitoring programme of Titicaca water frog we are obtaining a lot of data that is under work to be published.

In capacity building we organized different national and international courses and we are training people in our different activities and now we can see that several of them they already are carrying out their own research or conservation work, we also in some cases we are already coordinating and supporting in different ways these people, improving the network for the amphibian conservation in South America.

In captive breeding we were able to produce different offspring of threatened amphibians, fact that allow us to start planning with the government the next steps of reintroduction and also having now the chance to do something with the critical problem of Titicaca water frog were big numbers of frogs are dying. Now we are coordinating with national authorities to stablish a rescue centre and captive breeding program parallel with *in-situ* actions that will improve the situation of this species in the lake.

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

In all the areas we are working we are trying to involve local communities and in some of them we are having good results this is the case of Isla de la Luna in Titicaca lake where the local community now is supporting the work we are carrying out and at the moment we are planning a community based strategy to work in a sustainable use of the species and with coordination with the local and national government we are coordinating to stablish probably the first sanctuary of the Titicaca water frog in Titicaca lake, were the local community will have an important role for this joint initiative.

5. Are there any plans to continue this work?

Yes, we definitely want to continue this work because we saw that we can have a big impact in the knowledge of the Bolivian threatened amphibian species and also in the conservation. Also because the government requested us our support to work with the problem of Titicaca water frog and because we also see a need to keep working in the amphibian conservation in Bolivia because we feel that we are just at the first stages of amphibian conservation work in Bolivia and for this we are planning different strategies to be a better stablished programme working with amphibian conservation.

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

We are already sharing our results in different congress both national and international where we present our experiences, we also are preparing different publications in scientific papers, amphibian conservation magazines, general public and also in the courses we organise, using our data and results as examples. We also are sharing different documents and knowledge with the Bolivian government that the project is producing or working with. We also were able to share all our

experiences and results in the development of the Bolivian amphibian action plan organised by the Bolivian government and also in the Bolivian Amphibian need assessment organised by us and the Amphibian Ark.

We also are working in a document of the project where we want to share all the experiences of our work in Bolivia and where other people or institutions can get some experiences of our success and faults.

Some of the publications can be downloaded from our website <http://bolivianamphibianinitiative.org/results/>

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

The grant was used from April 2013 until May 2015, in this period we carried out different activities with the main support of Rufford Foundation and also with some other support of other sources, at the moment we still carrying out the project with the support of different sources too. The length of this stage of the project funded by Rufford Foundation was the same as planned, just that the last two months we had to add some other activities and due the problem Titicaca lake frog with its massive deaths in one area of the lake we had to add a little bit more than two months.

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.

Field equipment	Budgeted amount	Actual	Difference	Comments
General equipment (diving equipment, sound recording equipment, gps, data loggers, water quality test)	2500	1700	800	we used this difference to help to organise the amphibian need assessment and the training course
Camping equipment (e.g. Tents, stoves, backpacks, gps, sleeping bags)				
Fungible material (batteries, museum material for specimens)	200	450	-250	we used more material to collect and to store samples from our fieldwork
Travel				
Accident insurance	200	200	0	
Vehicle rental Toyota 4x4	2000	2000	0	
Transport for fieldwork (boat and fuel)	2800	2800	0	
Lodging and meals				
Supplies for fieldwork	1200	1200	0	
Personnel				
Subsistence payments	3500	3500	0	
Porters and field guides services	1000	1000	0	
Stipend for local fieldworkers	1000	1000	0	

Stipend for educational responsible	1000	1000	0	
Stipend for field biologist	2500	2500	0	
Education and training activities				
Printing and office (ink, photocopies, printing, phone calls)	600	400	200	we decided to use this difference for the fungible material
computer, printers	800	0	800	we used this difference to help to organise the amphibian need assessment and the training course
internet	300	300	0	
Community workshops	1200	1200	0	
Park guards and young biologists training workshops	1400	3200	-1800	We decided to expend more resources in the training courses because the opportunity to have international lecturers at that time, being able to involve participants from Bolivian organisations that could work in amphibian conservation
Material for workshops	700	700	0	
Amphibian activities in the museum	700	450	250	we were not able to use all the resources and we used this to support the Amphibian need assessment organized with Amphibian Ark
Chytrid studies				
Chytrid sampling material				
Chytrid sampling				
Chytrid Analysis				
Captive breeding				
Quarantine facility				
Captive breeding equipment (aquariums, filters, thermometers, reactive, etc.)	800	800	0	
Biosecurity				
Water and electricity expenses for captive breeding facility	200	200	0	
food and maintenance of captive populations	400	400	0	
Total	25000	25000		

1 pound = 11, 3650 Bolivianos

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

We think that now we need to focus our work in some of the species we are working with. But we realised is that we do not have enough information about most of the species to decide with which one can we work. So we think to focus in a couple of species that we know need urgent actions but also collaborate or support research of some species, the ones that need of information is critical. We also want to increase the relationship with government and international organisations that can support the amphibian conservation together with local communities that will guaranty in a better way the conservation actions we want to carry out.

We also want to support new projects from different young Bolivian biologists that want to work with amphibian conservation and more focused in different species. In this way we have more people working in amphibian conservation in an organized network of conservationists.

In some cases we realized that captive breeding is the last chance for some of our species. We already found that some species are not anymore present in the wild and we think that even is not the best or unique solution, captive breeding can help us to have more time to do something with some of the species that are in a critical situation.

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, we used Rufford Foundation logo in all our presentations in congress, courses, presentations and activities of the project. We also are using the logo in different educational material we are producing and we plan to use it in the following publications that the project wants to publish for national and international organizations. We also have the logo always in our website www.bolivianamphibianinitiative.org and our blog.

11. Any other comments?

There is a lot of work to do in Bolivia and specially with amphibians and we need to work with more people and this is the reason that now we are trying to involve more people in the project under different levels of involvement, with this we want to establish a team that is going to work in amphibian conservation in different areas of Bolivia and with different species with the support of the Bolivian amphibian Initiative.

Now after some year with the work with amphibians in Bolivia the project is having good contacts with national institutions and government and now we see that we are able to coordinate with them in better way and also with the support of international conservation institutions we think that now we can have good chances to make a difference in the conservation of endangered amphibians.

We also are improving our contact with general public with the media and other channels such the followings.

Website of the project:
www.bolivianamphibianinitiative.org

Blog:

English: www.bolivianamphibianinitiative.blogspot.com.

Spanish: <http://iniciativaanfibiosdebolivia.blogspot.com/>

French: <http://initiativeamphibiensdebolivia.blogspot.com/>

And also the blog of our internship student that came from Belgium

