

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	Arturo Muñoz Saravia
Project title	Bolivian Amphibian Initiative
RSG reference	9096-B
Reporting period	November 2010-November 2011
Amount of grant	£12000
Your email address	Hyla_art@yahoo.com
Date of this report	December 15 th 2011

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			Yes	<p>We carried out amphibian surveys in 13 sites of Bolivia, mainly focused in the High Andean areas. We also monitored four sites in different occasions With <i>Telmatobius culeus</i>, <i>T. hintoni</i>, <i>T. simonsi</i> and <i>T. marmoratus</i> gr.</p> <p>In this component we obtained data that is going to be very useful to prioritise the species and the sites where we are going to work in the future, we also obtained samples of Chytrid from different localities that soon are going to be analysed and will provide an updated picture of the situation in Bolivia.</p> <p>Environmental data is being collected such us temperature, different water quality parameters, relative humidity, UV radiations, luminosity among others that will be useful for captive breeding components with species from this localities.</p> <p>At the same time we developed a method to work with the critically endangered Titicaca Water frog <i>Telmatobius culeus</i> that now is going to be used in the future by us and also by the Peruvian team that also is working with this completely aquatic frog. Now we are obtaining population data about this species.</p>
Capacity building			Yes	<p>During the work of the project we were able to work with different people from local communities, touristic guides, park-rangers, young biologists and students. We also are working with our internship programme were students from national and international universities work in different components of the project so they are trained and also support the work we are carrying out.</p> <p>We supported in the husbandry and conservation of amphibians organised by Durrell Wildlife Conservation Trust,</p>

				<p>Amphibian Ark, ALPZA and Teraiken carried out in Argentina carried out for more than 25 participants.</p> <p>We organised the high Andean amphibian conservation course mainly focused for Bolivian biologists, veterinarians and students, where we had 23 students from Bolivia, Peru and Brazil. From this group some students and young biologist now are working with the Bolivian amphibian Initiative with their thesis and individual research where they we are supporting them with the experience and contacts.</p>
Raising awareness			yes	<p>In most of the sites where we carried out our work we organised education workshops for the schools from local communities and also for adult people in the general meetings from the town.</p> <p>An informal way was also with kids joining us to the fieldwork to see our work and learn more about amphibians.</p> <p>In the museum we made some improvements in our exhibition and also with our permanent exhibition information about amphibian situation reach to more than 300 students and visitors that each month we have in the museum.</p> <p>We also used different media to share information about amphibians and the project, like newspapers, books, calendars, articles in magazines, radio and TV programmes and also with scientific congress and talks and workshops in different occasions.</p> <p>We are developing now different educational material that will be used in these educational activities outside and inside the museum for kids from schools.</p>
Captive breeding			yes	<p>We already have two facilities with endangered species of frogs of the genus <i>Telmatobius</i>. One small room with local species and a container with low temperatures and with better bio-security levels.</p> <p>We are obtaining very important information about the management of</p>

				<p>the different species and testing different options to keep the frogs in good conditions.</p> <p>At the moment we are obtaining offspring from <i>Telmatobius hintoni</i>, our model species, with several times laying eggs and with adult offspring until now. We also have other species like <i>T. culeus</i> and <i>T. marmoratus</i> that already are showing some signs that they want to breed.</p> <p>We are testing some treatments for Chytrid in captivity and also some tools or methods that we can use in studies in the wild. Once the method is tested in captivity we are going to use it in the wild.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Now that we were looking for new localities where we could find new populations of endangered species, sometimes the access was very difficult even we used 4x4 car due the conditions of the roads and sometimes because the rainy season, now we are trying to work before the rainy season and after in those places that we can have these problems.

To work with the Chytrid samples we had problems to receive the material sent from USA, because customs took the material and we had to pay a lot of more money to take out even was a material that was not to keep in Bolivia, this problem postponed the work for several months, now we are watching other ways to be more efficient in the case we need equipment from outside of Bolivia.

In the education component we realised that sometimes the message that we wanted to transmit was not understood by the kids from schools especially from the countryside, for this reason we changed our methods to do our education workshops and activities in the way that they can get more information.

The captive breeding component had some problems with the facility and the level that we wanted to reach, like bio-security, nutrition, water quality and others. Some of them we fixed thanks to the equipment we obtained with the support of different institutions and also there are some others that we still need to work and to fix, unfortunately there is no enough resources for the moment but we are in the search of more support so we can work at the level that we want to do it and also the recommended by institutions that are helping us.

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

Research

We worked in 13 sites of Bolivia and four of them we monitored in different times of the year. With this work we found new localities where endangered species are present and in some cases very healthy populations and where they are very abundant. So we decided to focus in some of them for

our monitoring part going back to those places to see the dynamics of the population and also how the habitat change in the different seasons.

Water quality data was obtained with new equipment that allows us to have more accurate values and will allow us to manage our populations in captivity in a better way. Also we are collecting data from all these sites such as temperature, Relative humidity, light, UV radiation and others. All this data soon will be uploaded in our website for conservationists and researchers that are interested in this kind of data.

We supported a research thesis from one student from Holland that contacted us and now we obtained very valuable information about the critically endangered Titicaca water frog, this thesis is now available in our website so people can access to this information, with this work we also defined our method that we are using until now and now we are standardising the details to keep working with this completely aquatic species.

Thanks to the contact with an American Laboratory now we are going to analyse the samples we collected and also the ones we are collecting or going to collect, all these samples will allow us to see the real picture of the situation of Chytrid fungus in Bolivia and will be very useful for the next steps of the project.

Capacity building

During our fieldwork and captive breeding activities we were able to work with young biologists, students, park-rangers and people from local communities, we took these opportunities to train these people in amphibian research methods, conservation, education and captive breeding. From these people some of them now are working in some way with amphibians and also are supporting the activities of the project.

Through the training workshops we were able to train young biologist, one veterinarian and students. We organized the high Andean amphibian conservation course where 23 people mainly from Bolivia, Peru and Brazil were present. Subjects about research methods, conservation experiences and projects, educational programmes and project management, was shared with the students. From this group now there are some of them that are working with Bolivian amphibian Initiative (BAI) in the different components. There is also some others that are developing their own project that later will work with the support of the BAI. As part of this course we made a call for a small grant for all the students were the best project will get a small grant that will allow to carry out this idea and also will stimulate to start working in amphibian conservation.

Recently we are working with Internships with national universities were students of biology, environmental career are working with us to learn about conservation work and with the opportunity to develop their own small project during this time. We also are working with one university that is sending their students for some months so they can learn about our work and to put in practice the knowledge they have, in this way both sides benefit from this joint initiative. We also are opening our volunteer programme where people interested to work with us will allow us to work in more things and also to train our team and people from local communities and students.

Education component

Educational workshops were carried out in the different localities were we worked; we made a pre-workshop evaluation and a post-workshop evaluation to learn more about the knowledge and perception of people about amphibians. This allowed us to focus in the subjects we thought were

necessary to reinforce or to change to obtain a better result with the change of attitudes, also allowed us to evaluate our work and to improve the methods we were using.

In some cases we also used informal methods like conversations with the people or kids were meanwhile we were walking or working we showed them several aspects about the frogs and the situation about the frogs they had in the surroundings, this allowed us to have a better reception and more interest of the people from the country side.

With our permanent exhibition of amphibians in the natural History Museum Alcide d'Orbigny we arrive about 300 visitors and school children that learn from the information about amphibians we have in the exhibition and also the frogs from the captive breeding component.

Media is one important way to reach people and we used newspapers where we published some notes about amphibians in Bolivia, also in radio and TV programmes where we had a big number of people we reached. Another way is the articles in magazines of general diffusion such as the magazine distributed in plains of one company where passengers can read articles about Bolivia.

We also published a book of Bolivian amphibians in Spanish where with very basic language we show aspects about amphibians and these books are used in the schools we give the workshops and in some cases we gift the schools. Several books are distributed in different organisations that are working with conservation and education. Our plan is to distribute in different levels and sites of Bolivia.

We also published for 2011 a calendar with pictures of the project that were distributed in different areas mainly in Cochabamba. For next year we prepared a calendar focused for Titicaca Water Frog showing that this frog is just in the lake because most people from the surroundings of the lake think is a common species. Now we are distributing across all the area of the lake and some other parts of Bolivia so people will start to know this unique species. We are also preparing together with the government a big poster that will be in one town around the lake talking about the situation of this species.

We also participated with one initiative of one Telephone Company with the printing of charging credit cards with the picture of Titicaca frog and now are being distributed across all the country.

Captive breeding

We have to facilities with endangered species of frogs of the genus *Telmatobius* some of them are already breeding and with successfully results, this is the case of *Telmatobius hintoni*, with several offspring. The other species *T. culeus*, *T. marmoratus* gr. Are starting to show breeding behaviour and we think that next year we are going to have more results.

In this component we are learning a lot about this group of frogs and we saw that almost nothing is know about this and we are developing a guide that will help other conservationist that are interested to work in captive breeding of this group of frogs.

We also are taking advantage to do some research with the different species and with the facilities to improve our work in captivity and also in the wild like tools that can be used in the wild. This is the case of marking techniques, natural history data and reproductive strategies of the different species.

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

Local communities are an important partner for us, since the beginning of the project we contacted national NGOs, institutions and local communities and since then we are working very closely with them, this is the case of three sites, two in Titicaca that are involved in the work in the fieldwork, data collection and also with the development of strategies to work in conservation with them like is the case of ecotourism in Sicuani with one student that is going to do his thesis in ecotourism and Sawiña another community that is starting to work with ecotourism and with the main attraction of the frog and in all these initiatives we are trying to support them as much as possible. Another example is one member of the community Nelzon Paye it was working with the project for about one year in the Museum in the captive breeding component learning how to keep the frogs and also other tools about the work in research, education and captive breeding, now Nelzon is going to the university to study medicine and we are exploring the options to keep working together or in other case to work with somebody else.

Another example is the group of local touristic guides in Guacharos, in the cloud forest that we are working closely with them and now we are developing a photographic guide of the amphibians of the area and we are planning to organise a training workshop for the entire group and also other guides from other areas.

5. Are there any plans to continue this work?

The need to work in conservation of amphibian in Bolivia is very high, to obtain the data to take the best options and decisions are needed and we think that with the work we are developing we have the change to provide these tools. For this reason we definitely are going to continue this work because much more is need to be done. We found that with the data we have until now there are more questions about several species and also that people in Bolivia are starting to talk about frogs we see that we need to keep with this project to increase the awareness about the situation of amphibians and also we need to learn more about captive management of these frogs and also we need to share all this knowledge we are acquiring.

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

We are already sharing the results of our work through different congress, meetings with biologists, ecologists and conservation institutions with several presentations. We also are preparing scientific papers where we are going to describe our main findings about the species we are studying. We already published in our website the research about Titicaca water frog as a result of the joint work with a thesis student from Holland that worked with us.

We also are sharing our results at different levels also for general public using different tools, such as the book we published, articles in newspapers, magazines, Radio and TV shows.

We also are sharing our knowledge and results with other institutions, this is the case of Denver Zoo that is working in the Peruvian side of Titicaca lake, we are teaching them how we work in the field and also with our experiences in education, research and captive breeding, now we are coordinating a joint effort to work with this species in both sides of the lake.

Another way we are using is our website www.bolivianamphibianinitiative.org that is showing the work we are carrying out and also we are developing some resources that can be used by the visitors of the website.

Our blog www.bolivianamphibianinitiative.blogspot.com in three languages (English, Spanish and French) we show the work we are doing periodically and is a very useful tool to share our work and ideas and it showed that a lot of people is contacting us thanks to this way.

Recently we also created our facebook site <http://www.facebook.com/pages/Bolivian-amphibian-Initiative/119214331487496> like another way to share the information and to join people interested in the project and Bolivian amphibians.

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

Proposed timescale

From November 2010 to November 2011

Developed project

From November 2010 to November 2011

The RSG was used from November 2010 to November 2011 and it is in the period anticipated in the project. In some cases we changed the order of the activities for the convenience but all of them were accomplished.

The analysis of the Chytrid samples is going to be very soon, we were not able to do it before because we had some problems with customs and because the laboratory had to send us the material, but this component is going to be running also in the next year.

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
General equipment (Digital camera, , data loggers, computer, sound recording equipment, diving equipment, head lamps, etc)	450	450	0	used more but covered by other sources
Camping equipment (eg. Tents, stoves, backpacks, gps, sleeping bags)	300	300	0	used more but covered by other sources
Fungible material (batteries, museum material for specimens)	200	200	0	
Accident insurance	50	50	0	
Transport for fieldwork (oil, boat, car rental)	1500	1500	0	used more for specific research but covered by other sources
Supplies for fieldwork	1400	1400	0	
Porters and fieldguides services	200	200	0	
Subsistence payments	4000	4000	0	
Printing and office (ink, photocopies, printing, phone calls)	50	50	0	

Community workshops	350	300	50	The rest of the money was used for another component
Park guards and young biologists training workshops	350	650	-300	we expended more that was used from other items and other sources, because we wanted to receive more students
Material for workshops	550	350	200	The rest of the money was used for another component
Amphibian activities in the museum	500	450	50	The rest of the money was used for another component
Captive breeding equipment	100	100	0	
Chytrid analysis costs	2000	2000	0	this amount is being used for the analysis in US
captive breeding maintenance	0	0	0	
TOTAL	12000	12000	0	1£=1.54 USD=10.7 Bs

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

After the experiences during this year we saw that there are several priorities for conservation in Bolivia, we need to focus in some of them. To start with population studies in one of them and we plan to do that in different ways. The change of attitudes in people about amphibians is very important and we think if we want to do conservation we really need to work closely with local communities and involve them as much as possible.

Captive breeding is an urgent need for this work, because we saw that some species don't have the time to wait in-situ actions so to learn more about the species in captivity and try to breed them is very urgent.

For all these activities we saw that we need to work together with different people and institutions, this is the reason that now we are starting to coordinate some activities with some national and international institutions to obtain better results. Also we are trying to organise with Amphibian Ark the next year a workshop for the Bolivian amphibian conservation plan and also we want to take advantage to have a meeting with the people that is working with *Telmatobius* in South America, this will depend of the funds that we can find.

A new step that we want to develop is the support as Bolivian Amphibian Initiative to young biologists in amphibian work and research that they want to develop, so we are trying to find the way to do that and we already are coordinating with some of them.

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, we used the RSGF logo for all the materials we used and produced such as: book of Bolivian amphibians, Calendar of Bolivian frogs 2011, Calendar of Titicaca frog 2012, Presentations of

husbandry and conservation of amphibian's course in Argentina July 2011, ecological congress in Sucre Bolivia with two presentations and one poster, several presentations about the project in Peru, United Kingdom, Sweden and Belgium in different occasions during 2011.

We also made publicity about RSGF in the High Andean Conservation Course, husbandry and conservation of amphibian's course in Argentina, the articles in the newspapers, articles in magazines, Radio and TV shows and also in the exhibition of the museum.

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://iniciativaanfibiodebolivia.blogspot.com/>

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

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

<http://monstage2011.blogspot.com/>

News about amphibians and the project

http://www.opinion.com.bo/opinion/revista_asi/2011/0724/suplementos.php?id=1218

<http://www.paginasiete.bo/2011-03-14/Gente/NoticiaPrincipal/228Adelantosgente001LUN14.aspx>

http://www.eldiario.net/noticias/2011/2011_03/nt110302/6_01clt.php

<http://www.fmbolivia.tv/2011/03/cuatro-millones-de-tarjetas-muestran-a-ocho-animales-en-peligro-de-extincion/>

<http://www.fmbolivia.com.bo/noticia36950-cientificos-hallan-tres-especies-de-anfibios-que-se-creia-extintas.html>

<http://www.paginasiete.bo/2011-04-29/Gente/NoticiaPrincipal/20-21Gen00229.aspx>

We also published notes about our recently results in the Amphibian Ark Newsletter and soon in others like froglog

http://www.amphibianark.org/Newsletters/pdf_newsletters/Amphibian%20Ark%20News%2012.pdf

Amphibian Ark website,
http://www.amphibianark.org/Newsletters/pdf_newsletters/Amphibian%20Ark%20News%2012.pdf

And also the project is already in the list of projects running in the captive breeding programs listed in the amphibian ark website

<http://aark.portal.isis.org/Amphibian%20Partnerships/Lists/Amphiban%20partnershis/DispForm.aspx?ID=5>

<http://aark.portal.isis.org/Amphibian%20Partnerships/Lists/Amphiban%20partnershis/DispForm.aspx?ID=6&Source=http%3A%2F%2Faark%2Eportal%2Eisis%2Eorg%2F%2FAmphibian%2520Partnerships%2FLists%2F%2FAmphiban%2520partnershis%2FBolivia%2Easpx>

Previous publications:

<http://www.arkive.org/lake-titicaca-frog/telmatobius-culeus/image-G61229.html>

Natuurpunt Gent Belgium (conservation institution)

<http://www.natuurpuntgent.be/snep/Snep%20jg8nr1/websnep-jg8nr1.pdf>

Los Tiempos Bolivia (amphibian exhibition and captive breeding program)

http://www.lostiempos.com/click/invitados/invitados/20100521/inauguracion-del-programa-de-cria-en-cautiverio_71631_132527.html

La Prensa Bolivia (amphibian crisis in Bolivia)

<http://www.laprensa.com.bo/somos/06-06-10/edicion.php>

Bbc Jersey UK

http://www.bbc.co.uk/jersey/content/articles/2009/02/12/andean_frog_feature.shtml

Los Tiempos Newspaper (postcard collection of Bolivian amphibians)

http://www.lostiempos.com/noticias/14-09-08/14_09_08_vyf1.php

Los Tiempos and Opinion Newspaper (calendar Bolivian amphibians)

http://www.lostiempos.com/noticias/26-11-08/26_11_08_trag1.php

<http://www.opinion.com.bo/Portal.html?CodNot=46587&CodSec=19>