

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	Mingyu Liu
Project title	Ecological research of free-ranging dogs and competition with snow leopards in Sanjiangyuan
RSG reference	22267-2
Reporting period	August 2017 – August 2018
Amount of grant	£4, 991
Your email address	liumingyu0930@163.com
Date of this report	7 Sep. 2018

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
1) Density of free-ranging dogs at 4 monasteries will be measured and reported.				We estimated density population dynamics of free-ranging Tibetan mastiffs around seven monasteries. We can find that in lower dog density areas, the birth rate, survival rate and growth rate are higher.
2) Overlap of distribution pattern between free-ranging dogs and snow leopards will be assessed and reported in a publication.				We estimated the snow leopard habitat is 116,570 km ² in the SJY area. Mastiff habitat is around 53,000 km ² . The overlap is nearly 20,000 km ² , which took 16.9% of snow leopards habitat.
3) Overlap of daily and annual activity patterns from camera traps will be analysed and reported in publication.				Results analysed from Zhaxilawu monastery. We can see that they have different shape of activity patterns, but the overlap ratio is not low, which is 0.53. Morning around 9:00 and evening around 19:00 are the time of highest overlap. I also found another interesting phenomenon, mastiffs have the same activity patterns with blue sheep, the major prey of snow leopard. So, next step, I also want to find if mastiffs could shift the activity pattern of blue sheep and have indirect influence on snow leopard behaviour.
4) Overlap of diets will be described (more than 50 scat samples for each species) and reported in publication.				We analysed 386 snow leopard and 157 mastiffs scat samples. And we cannot neglect the human-snow leopard conflict since there is around 1/6 of composition is livestock. Livestock is the major food of mastiffs. And there is an interesting result that there is fox hair in one scat sample. Although wildlife only takes up 25% of dogs' diet, but the population quantity of mastiffs is much higher

				than other carnivores, which means only a small percentage of mastiffs could have large influence on snow leopards.
5) We will write and try to publish a peer-reviewed paper about the diet and activity pattern of free-ranging dogs and snow leopards.				The paper is already finished and send to a journal. But the editor needs us to modify some parts. Will send again soon.
6) 200 free-ranging dogs will be sterilized and adopted around Xiarihu and Duoma monastery.				With the approval of local government, we started the sterilisation and immunisation. However, due to the local religion, they still cannot fully accept it. As a result, we only sterilised 12 dogs.
7) A report on sterilization-adoption will be published for future reference.				We made a brochure about sterilisation, adoption, and echinococcosis. We handed out around this brochure and explained the detailed to 31 families in 4 villages of Zaduo County.
8) 1000 brochures on Tibetan free-ranging dogs will be disseminated				
9) The change of people's attitude towards free-ranging dog problem will be monitored through quick interviews before and after watching the documentary				The documentary was played in Longbao, Yushu.
10) 2 Buddhist festivals will be attended to publicizing knowledge on free-ranging dogs and possible solutions.				Actually we attended three festivals, one in Jiegu, one in Zaduo, and one in Banmarentuo.

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

With the approval and help of local government, we wanted to start the sterilisation and immunisation programme in April 2018. Local government said they would support us with human and material resources. They would convince local people

to bring their own mastiffs, and catch local free-ranging mastiffs to our operation vehicle.

However, when we arrived local villages, with all the other things already prepared (veterinarians, surgical items, medicines), we found there were no-one. And the government told us local people still think it's not accepted the concept due to their religion. We trapped mastiffs by ourselves. After 1 day, local people told us their feelings and worries, and we stopped the programme. As a result, we only sterilised 12 dogs.

Instead, we changed to immunisation only. We hand out medicines to cure and prevent echinococcosis, the epidemic disease for local people, dogs, and herds. They really support this programme. They helped us feeding the medicines to free-ranging mastiffs and their own mastiffs.

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

We have established long term cooperation with local government on echinococcosis prevention and dog management.

We have started community-based monitoring programme (camera traps) for snow leopard conservation.

We have further understanding on the ecological role played by mastiffs in the local environment, especially their competition and interaction with other carnivores. The papers will be published soon.

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

Echinococcosis is the most prevailing infectious disease for local people, almost 10% local people, 15% livestock, 25% mastiffs have this disease. Dogs are the definitive host that can transmit echinococcosis to human and livestock. Their involvement in the immunisation programme will decrease the potential of getting this disease.

For the community-based monitoring, it's our citizen science programme. Through the monitoring, they acquired some ecological and zoological knowledge around their own houses. We also gathered all the good photos and videos from camera traps and shared with local government and China Central Television. More and more people know that snow leopard is a rare species they contact us and want to take ecotourism which would increase the income of local people.

5. Are there any plans to continue this work?

Yes. The immunisation and adoption programme will have long-term relationship with local government.

The community-based science monitoring will last at least for another 3-5 years. We want to have better understanding on the snow leopard population dynamics and behaviour.

For the research, we want to have further understanding on the relationship between mastiffs and other medium-sized carnivores like Tibetan fox, red fox, and Pallas's cat. Through our monitoring, we found mastiffs, as opportunists, would take all the carrion they met. This would take the resource and niche of those animals.

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

To share with other researchers, we would like to attend more conferences and publish papers of our works.

To share with local people and government in Tibet, we are making a short movie of the things we have done, especially the parts they participated. We want them have achievability, and know what great jobs they have done.

To share with the public, we have written and will keep on writing all the interesting stories and experiences of our field works, our research outcomes on media platform.

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 RSG was used from August 2017 to August 2018, just as anticipated.

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
Report production and results dissemination	100	100	0	
Travel and local transportation	1200	1424	224	Flight price has increased this year
Food for team members and local guides	1020	980	40	
Accommodation	780	760	20	
Camping equipment	0	20	20	We bought some gas tank
Photographic equipment	200	180	20	Sale
Scientific equipment	1212	1218	6	
Insurance	384	250	134	We got a discount for group buying

Field guide books	30	13	17	
Communications	65	46	19	
Totals	4991	4991		

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

Keep good relationships with local people and government.

After our echinococcosis prevention, local people offered us lots of support, since they know the project we are doing is also good for them.

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

Yes, we have added RF logo in every poster and presentation we made during all the conferences or summits. And we told other researchers and conservationists to apply RF, including when we went to Japan to attend East Asia biodiversity conference, and world wildlife day in UN headquarters, New York.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Mingyu Liu - Team leader, field researcher, project manager.

Qiuni Dantu - Driver, translator, and field assistant.

Tang Yu - Field researcher, veterinarian.

Yangjinlamao - Translator, questionnaire investigator.

Chen Cheng - Lab researcher, field researcher, technical support.

Shan Zi - Field assistant, lab researcher.

Yaxing Liu - Field assistant, technical support.

12. Any other comments?

We do want to apply for the 3rd grant and continue our research.



In the field to hand out brochures on dog management.

