

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	Hongliang Li
Project title	Integrative conservation of endangered Forest musk deer (<i>Moschus berezovskii</i>) in Hualongshan National Nature Reserve, Southwest Shaanxi Province of China
RSG reference	12678-1
Reporting period	January 2013 to January 2014
Amount of grant	£6,000
Your email address	lhl_deer2011@163.com
Date of this report	8 th February 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
To determine the current forest musk deer population			Yes	The average density of forest musk deer in HNNR was $2.82 \pm 0.39 / \text{km}^2$, and the current wild forest musk deer in HNNR was 777 (777.4458 ± 107.52). The wild musk deer mainly distributed in the core areas of HNNR such as Laoyachang, Tuzhaizhi and Baxianshan, and occasionally occurred in Niutoudian, Zengjia and Shibeihe.
To determine the ecological characteristics of the preferred habitats of forest musk deer			Yes	The total area of HNNR is 28,103 ha, and the habitat of musk deer is 27,569 ha. Forest musk deer didn't migrate seasonally, and its territory is relatively stable. Preferred habitats were in steep slopes of the conifer-broadleaf mixed forest at medium altitude, and with southwest and south slope aspects;
To conduct socio-economical surveying			Yes	The living styles in the core area and surrounding areas of HNNR is relatively traditional, in which the farming is the main living means and the herb collection and the wild vegetable collection is very popular, which can impose influence on forest musk deer. The ecotourism is sparse in the local areas owing to the relatively remote location and poor transportation facilities. The poaching has existed actually, the most poachers, however, were from outside of the reserve and even from other counties and province.
Environmental education				Seven members talked with more than 300 local adults and pupils and conveyed the environmental consciousness and the concept of the wild conservation to the locals. Five presentations were hold to the local peoples, officials and the undergraduates of MUC.

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

The safety problem was not foreseen by the team. During the surveying in the field, the members were bitten by the wild wasp (*Polistes* spp.) and encounter with the poisonous snake (*Trimeresurus stejnegeri*). Later, when the population and habitat surveying was conducted, the local guides will lead the team and they monitored the safety of field environment for the team.

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

3.1 Forest musk deer Population

The average density of Forest musk deer in HNNR is $2.82 \pm 0.39/\text{km}^2$, and the total population is 777.4458 ± 107.52 .

3.2 Distribution of Forest musk deer

The wild musk deer mainly distributed in the core areas of HNNR such as Laoyachang, Tuzhaizhi and Baxianshan, and occasionally occurred in the buffering areas such as Niutoudian, Zengjia and Shibeihe. The habitat of wild Forest musk deer was 27569 ha. In the distributive areas of Forest musk deer, there are five towns including Niutoudian, Zengjia, Baijia, Shangzhu and Baxian, in which there are 3,000 local people.

3.3 Habitat utilization

In HNNR, the wild Forest musk deer was sedentary and didn't migrate seasonally. That is to say it's territory is relatively stable. In HNNR, the wild forest musk deer preferred the broad-leaved forests at the altitude from 1600 to 2500 m, in which the slope degree is bigger than 40° and with lower densities of shrub, bamboo, fallen logs and stumps respectively. Moreover, the habitats selected by musk deer were often far from the human distance, and with moderate shelter condition, canopy coverage, densities of the shrub and tree. Generally, the habitat utilisation of forest musk deer in HNNR was influenced by the brush coverage, stump density, tree density, ground character, sheltering condition, human disturbance and bamboo density.

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

There were four locals working with us as the pay guides, through which they and their families and neighbours have known the aim of this project and the methods and technologies of wildlife surveying. The environmental education and the raising of nature consciousness were conducted for more than 300 local adults and pupils. There were more than 100 local households had been involved in the socio-ecological surveying, and through the talking and interviewing with the locals, the value of wildlife and wildlife conservation were conveyed.

5. Are there any plans to continue this work?

Under the fund from RSG, we have been studying the endangered forest musk deer in Shaanxi Province, which has been the core range area of forest musk deer. During the surveying, we found that the poaching existed actually in the area, and the capturing of wild musk deer has been abounded in this area and the forest musk deer captured from the field were transported to the musk deer farms, where these wild-captured forest musk deer will be kept for the transaction and the musk extraction. In this area, especially in neighbouring Fengxian County, there have been many household-run musk deer farms, however, no survey has been conducted to determine the detrimental influence of the capturing and musk deer farming on the wild forest musk deer population.

We hope RSG can fund us to study above-mentioned issue.

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

We have made four public presentations to the local officials, local communities and undergraduates in Minzu University of China, and such activities will be continued in the future. Moreover, the data collected in this project has been analysed and the relative results has been organised into one manuscript which has been submitted to Chinese Journal of Applied Ecology.

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

This project was conducted from January 2013 to January 2014, and the actual length was longer than the length planned in the proposal. The detail showed in the following:

- From January 2013, the team members met together and took two seminars on how to conduct this RSG projects. The members contacted the local institutions for collaboration and support.
- In March 2013, the team went to Xi'an and Ankang of Shaanxi Province. We went to consult the officials of the local managing institutions. We bought maps, necessary data and the outdoors equipment. Later, the team went to Zhenping County and the HNNR. We interviewed and consulted the local officials, and we visited the local workers such as reserve rangers.
- In March 2013, the spring habitat surveying was conducted. By the methods determined in advance, the 42 ecological variables such as food diversity were determined and the quantified data was recorded in the habitat sheet prepared in advance. In this stage we surveyed 60 sampling belts utilised by wild forest musk deer and 70 control non-used belts.
- From June to August 2013, the summer habitat surveying was conducted, in which the 51 used plots and 69 non-used plots were surveyed. Moreover, the socio-economical surveying and environmental education were conducted.
- In October 2013, the autumn habitat surveying was conducted, in which the 26 used plots and 40 non-used plots were surveyed. Moreover, team members went to the local communities and the local elementary schools to conduct the environmental education.
- During December 2013 and January 2014, the winter habitat surveying was conducted and the 23 used plots and 43 non-used plots were monitored, and three collective talking with the communities were conducted.

During the whole research (From Jan. 2013 to Jan. 2014), four locals had been joining the project.

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
Fee for local guides	£2,000	£2,000	0	£10/day.guide*50 days*4 guides
Environmental education and socio-economical surveying	£1,500	£1,000	£500	Presents for social surveying; Data for the environmental education;
Living cost of the team in the studying area and the equipment	£2,500	£2,500	0	One members' daily cost was £10, there were 2 to 8 members in different period; Four outdoor equipment were bought, which included raincoat, sleeping bag and camp.
Travel in the reserve	£500	£500	0	Rent the tractors in HNNR.
Travel from Beijing to the reserve	£1,000	£1,500	£500	One member's return travel between Beijing and HNNR were cost £ 150.
Map buying	£500	£500	0	The topographic map of the area was bought.
TOTAL	£8,000	£8,000	0	
<p>Note 1: The current rate of exchange: £ 1.0 can exchange 9.40 RMB of China (Rate on Feb. 8, 2014); Note 2: The budget and actual expenditure of the project were £ 8000, in which £ 6000 was from RSG, and £ 2000 was funded by the "985 researching Project" of Minzu University of China.</p>				

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

- The wildlife conservation in the remote areas of developing countries can be improved through the collaboration among the conservationists, the local officials and the local peoples.
- In Shaanxi area, the capturing forest musk deer from the field for the farming should be stopped and forbidden. Now, the local government and musk deer farmers declared that the capturing won't bring any harm to the wild population, and they believed that the musk deer farming can conserve the wild musk deer, as when more musk deer were farmed and more musk will be produced from the farming, then the stress of hunting on the wild forest musk deer should be lessening. So the additional projects should be conducted on this issue, then the local officials and farmers can be persuaded by the collected data.

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, the RSGF logo was always used in our presentations and talking, and we provide the information on the project to RSG as possible as we can.

11. Any other comments?

I and the whole team have been appreciated for the RSG's funding and support and we hope our future works can be funded continually by RSG.