

**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	Dao Thi Hoa Hong
Project title	The status of red-listed tree species and recommended conservation measures in Ta Xua Nature Reserve in north-western Vietnam
RSG reference	16107-1
Reporting period	October 2014 to June 2015
Amount of grant	£ 4999
Your email address	daothihoahong82@gmail.com
Date of this report	30th 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
To analyse the differences in the diversity and abundance of red-listed tree species in three different forest conservation zones at the same elevation in Ta Xua Nature Reserve, north-western Vietnam			x	The results indicated that the abundance of red-listed tree species declined from the strictly protected core zone through the buffer zone to the restoration zone in our study area.
To determine ecological and human disturbance factors affect the appearance of red-listed tree species			x	The canonical correspondence analysis suggested relationships among some red-listed tree species and the presence of footpaths, canopy closure and basal area, suggesting reduced abundance caused by human activities.
To suggest the measures for conservation			x	The study indicated that conservation effectiveness is related to the level of statutory protection afforded to a particular area, with full protection ensuring more robust conservation outcomes.

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

The topography of Ta Xua Nature Reserve is high and steep. It took a lot of time for transfer.

The rainy season was longer unusually. Under the rainy weather, the process of forest investigation took more time in the field. However, we tried to complete the work on the planning time.

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

1. A scientific manuscript about the abundance of red-listed tree species in differing levels of protection in the Ta Xua Nature Reserve had been published in the open access journal of Tropical Conservation Science Vol. 8 (2): 479-490, 2015. Available online: http://tropicalconservationscience.mongabay.com/content/v8/tcs_v8i2_479-490_Hong_Dao.pdf
2. The abundance of all tree species and red-listed tree species declined from the core zone through the buffer zone to the restoration zone in the study area. We found the highest abundance of red-listed trees in the core zone, which emphasises the importance of strictly exclusive statutory protection measures. The low number of red-listed tree species in the buffer and restoration zones indicates that these species are sensitive to selective logging and shifting cultivation. From a conservation point of view, low selective logging intensity seems to represent a better protection measure for threatened species than shifting cultivation. For some red-listed tree species, canonical correspondence analysis suggested relationships among the presence of footpaths, canopy closure and basal area, suggesting reduced abundance caused by human activities and even low intensity forest use can reduce the abundance of red-listed tree species.
3. Training local people to use the map and forest inventory equipment, to establish sample plots, and to make detailed plan for field work activities.

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

Three H'Mong people participated in this project. They are trained to use topography map and forest inventory equipment, to establish sample plots, to measure tree diameter. They had a good opportunity to improve and share their knowledge about forest tree composition, ecological factors, the role of threatened tree species in conservation, and the effect of ecological factors and human interference on the abundance of threatened tree species. Therefore, I think they will become positive factors for forest tree management and conservation in the Ta Xua Nature Reserve.

Three local people also got benefit from being paid while participating in this project.

5. Are there any plans to continue this work?

I would like to continue this project for some red-listed tree species being very rare and listed in high endangered levels in the IUCN red list such as Fujian Cypress (*Fokienia hodginsii*) with the some more suitable methods like adaptive cluster sampling and line distance sampling methods that are believed to be more efficient in the case of rare events, and are recommended for a better understanding of tree species distribution and abundance in such areas.

The study of a single nature reserve with such zonation can be constrained by pseudo-replication. Therefore, I would like to conduct some further studies of other protected areas with similar statutory zoning characteristics in order to draw more general conclusions.

I will apply for 2nd RSG to continue this project.

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

The results of this project had been published in an international open access journal, available in Tropical Conservation Science from 29th June 2015. Other scientists, conservationist, botanists, students and other audiences can free download it from http://tropicalconservationscience.mongabay.com/content/v8/tcs_v8i2_479-490_Hong_Dao.pdf

The results will be submitted as useful scientific documents for other scientist, lecturers and students in Vietnam Forestry University.

They will be published as a part of my PhD dissertation and will be submitted to Forest Science and Forest Ecology Faculty, George – August Universität, Göttingen, Germany, and to Silviculture Faculty, Vietnam Forestry University.

The PhD thesis will be further submitted to Vietnam National Library.

I presented the results of this project with the Ta Xua Nature Reserve’s committee, rangers and local people at the study site; and in the PhD colloquium of Tropical Silviculture and Forest Ecology Department, Forest Science and Forest Ecology Faculty, George – August Universität, Göttingen, Germany.

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 October 2014 to June 2015. My Ph.D project started in 2013 and will be finished in 2017

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
Air and train tickets from Germany to Vietnam and return	838	838	0	

Field travel	287	287	0	
GPS	4	244	0	
Geology Compass	29	29	0	
Digital Camera	207	207	0	
Soil sampling probe	43	43	0	
Surveyor's Tape (50m)	9	9	0	
Map	63	63	0	
Personal protecting clothing and sleeping bags	172	172.	0	
First aid kit	43	43	0	
Battery cost for GPS	3	3	0	
Field supplies for partners	2652	2652	0	
Stationery and writing scientific articles	172	172	0	
English proofreading for publication of manuscript	238	238	0	use from 5% of contingencies
Total	4999	4999		

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

More activities and attention need to be paid for some red-listed tree species being very rare and listed in high endangered levels in the Ta Xua nature reserve.

The study of a single nature reserve with such zonation can be constrained by pseudo-replication. I think further studies of other protected areas with similar statutory zoning characteristics would be very welcome in order to draw more general conclusions.

Since a high overall number of tree species and a high proportion of red-listed tree species, a higher protection status in form of a national park should be considered in the Ta Xua nature reserve.

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?

I used the logo of RSG in my presentations when I presented the results of this study at the study site with the rangers and local people in the Ta Xua nature reserve in north-western Vietnam; and in the Faculty of Forest Science and Forest Ecology with international PhD students and master students in tropical and international forestry programme (TIP), Georg – August Universität, Göttingen, Germany. I also acknowledged RSGF in my publication.

11. Any other comments

I submit my published manuscript to RSG here and will submit my PhD dissertation after I defend. I am grateful to RSG for financial support to carry out this research project.