

## 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. 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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

Grant Recipient Details	
<b>Your name</b>	Leonid Averyanov
<b>Project title</b>	Assessment of <i>Xanthocypris vietnamensis</i> nature protected status in Tuyen Quang province
<b>RSG reference</b>	12585-2
<b>Reporting period</b>	2013
<b>Amount of grant</b>	£6,000
<b>Your email address</b>	<a href="mailto:av_leonid@mail.ru">av_leonid@mail.ru</a> ; <a href="mailto:av_leonid@yahoo.com">av_leonid@yahoo.com</a>
<b>Date of this report</b>	20th October 2013

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
Fieldwork for preliminary estimation of population square and its approximate numerical strength			X	It was estimated approximate square and size of main known subpopulation of <i>Xanthocypris vietnamensis</i> (Na Hang Distr., Sinh Long Municipality, around Khuoi Phin village, subpopulation №1, map 1 & 2, see report supplement) that covers about 0.5 km <sup>2</sup> and includes about 50 mature trees. It is not possible to give exact figures as tree regularly grows on tops of highly eroded rocky limestone often with inaccessible cliffs.
Fieldwork in and around primarily discovered locality for searches of another subpopulations			X	<p>It was newly discovered one additional subpopulation of <i>Xanthocypris vietnamensis</i> in Tuyen Quang Province (Na Hang Distr., Sinh Long Municipality, around Khuoi Phin village, population №2, map 1 &amp; 2, see report supplement). It covers about 0.2 km<sup>2</sup> and includes about 15 mature trees.</p> <p>It was detected one large intact population of <i>Xanthocypris vietnamensis</i> on the border of Tuyen Quang and Ha Giang Provinces.</p> <p>It was newly discovered and directly studied four remnant populations in close vicinities in Cao Bang Province:</p> <p>Population 3 (map 1 &amp; 3, see report supplement). Nguyen Binh Distr., Ca Thanh Municipality, Ta Pin village. It was observed six mature trees on square about 0.2 km<sup>2</sup>.</p> <p>Population 4 (map 1 &amp; 4, see report supplement). Nguyen Binh Distr., Yen Lac Municipality, Chi Doi village. It was observed one mature and three immature trees on square about 0.1 km<sup>2</sup>.</p> <p>Population 5 (map 1 &amp; 4, see report supplement). Thong Nong Distr., Yen Son Municipality, Ngan Vai village. It was observed one alive mature tree and many died on square about 0.4 km<sup>2</sup>.</p>

				Population 6 (map1 & 4, see report supplement). Thong Nong Distr., Yen Son Municipality, Nhieu Lung village. It was observed two mature and three immature trees on square about 0.5 km <sup>2</sup> .
Description of habitats, vegetation and other natural conditions of <i>Xanthocypris</i>			X	It was described habitats and vegetation structure in all six discovered populations of <i>Xanthocypris vietnamensis</i> with short data about natural conditions (short soil descriptions and climate extrapolations). It was also provided list of most typical plant species occurring in <i>Xanthocypris</i> habitats based on collected voucher herbarium specimens. 12 species were discovered here as a new species for science.
Estimation of number of trees, populations size, structure and expected area of distribution, as well as identification species status			X	It was estimated number of trees, populations size, structure and identified species status for each discovered population as follow (see also supplement): <b>Population 1:</b> about 50 mature trees / square about 0.5 km <sup>2</sup> / no young trees, no regeneration / endangered. <b>Population 2:</b> about 15 mature trees / square about 0.2 km <sup>2</sup> / no young trees, no regeneration / endangered. <b>Population 3:</b> it was observed six mature trees / square about 0.2 km <sup>2</sup> / no young trees, no regeneration / critically endangered. <b>Population 4:</b> it was observed one mature and three immature trees / square about 0.1 km <sup>2</sup> / no regeneration / endangered. <b>Population 5:</b> it was found one alive mature tree among many died and logged samples / on former square about 0.4 km <sup>2</sup> / no young trees, no regeneration / critically endangered. <b>Population 6:</b> it was observed two mature and three immature depressed trees / square about 0.5 km <sup>2</sup> / no regeneration / critically endangered. Largest intact population was observed

				<p>on the border of Tuyen Quang and Ha Giang Province. It was preliminarily assessed.</p> <p>More information - see report supplement.</p>
Investigation of species phenology and cone/seed production, identification of optimal time for seed collecting			X	<p>Seeds of <i>Xanthocypris vietnamensis</i> were collected for study of their fertility and testing of seed propagation.</p> <p>It was at first successively studied seed phenology, seed production and seed fertility with following main results:</p> <p>Species seed fertility is observed in studied populations depending on weather in August –October. Optimal time for seed collecting in year 2013 in studied area were first 2 weeks of September. Portion of seeds with developed endosperm in different studied samples varied from 0 to about 10%, from 90 to 100% seeds were empty.</p>
Elaboration of appropriate strategy for species protection in cooperation with local village authorities, representatives of Forest Protection Department and international Nurture Protection organisations (in perspective - seed collecting, seed/cuttings propagation for possible reforestation)		X		<p>Full conservation and protection of remaining samples of <i>Xanthocypris vietnamensis</i> in all discovered localities is extremely important for further propagation and salvation of the species genetic richness. Well understanding of this problem by FPD and other Vietnamese authorities of different levels meets a conflict with local peoples who consider forest in their native area as their property. Timber of the tree is outstandingly valuable for home and other village or farm constructions (see illustrations in supplement) and was used by locals during ages up to now hence it resource become miserable. Chinese dealers, which offer high price for the timber represent additional serious problem for salvation of mature trees. Cultivation and plantation of <i>Xanthocypris</i> in such circumstances are most important way for species protection and conservation. Organisation of the tree propagation by seeds and cuttings with moderate financial dotation to local families for</p>

				plant plantation in its native area looks alone effective way for species conservation in long term future. Such plan is actually elaborated by project team.
Preparation of appropriate report and illustrated assessment for publication in popular and scientific magazines			X	Schematic illustrated report of completed research is presented in supplement. Manuscript of illustrated assessment with main results of investigation is now in processing for preparation for publication.

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

Unforeseen difficulty 1: unusually rainy weather (during 2013, approved for exploration) in the area expected for investigation. Solution: shifting main time of field works to September – October, first coming more or less rainless time.

Unforeseen difficulty 2: actual absence of car roads in remote rocky area expected for field exploration and remnant populations discoveries. Solution: hiring of motorbikes for local transportation (including expedition equipment) on mountain trails .

Unforeseen difficulty 3: rocky landscape consists of numerous column- or mesa-like, remnant, highly eroded karst limestone formations with many vertical cliffs (true bad-land landscape) with actually no flat places gives no possible application of methodology of using of standard model plot description for characterization of vegetation structure. Solution: Extrapolation of personal visual observation for vegetation description and approximate calculations.

Unforeseen difficulty 4: increasing of the number of project participants due to necessity of inclusion into field team of staff members of Forest Protection Department (agency responsible in Vietnam for nature protection) and Institute of Ecology and Biological Resources as (Vietnamese Academy of Science and Technology) official supervisors of team activity. Solution: decreasing of number of days of actual field work.

Unforeseen difficulty 5: strong world scientific practice of documentation any field botanical investigation by collecting of voucher herbarium specimens housed in main world herbaria for verification of conducting scientific work. Solution: including of unforeseen budget item for collecting of herbarium materials for verification of completed investigation. Housing of these materials in world Herbaria with notices on herbarium labels acknowledgement to RSGF.

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

1. Assessment of discovered earlier main *Xanthocypris vietnamensis* population and illustrated description of vegetation and natural conditions in its habitat.

2. Discovery of 5 new populations of *Xanthocypris vietnamensis*, their preliminary assessment and verification of the plant distribution in central part of northern Vietnam for identification of areas for future possible reforestation.

3. Fruitful discussions and talks with local FPD representatives and some families of local people in native area of *Xanthocypris vietnamensis* about its possible (and reasonable necessity) plantation based on propagated seed and cutting material managed by Center for Plant Conservation (CPC).

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

Fruitful discussions and talks with a number of families of local people in native area of *Xanthocypris vietnamensis* about its possible plantation based on propagated seed and cutting material managed by CPC. Formation of sure understanding among local communities of necessity of the tree propagation, cultivation, plantation and reforestation in conditions of hard decreasing of natural timber resources as alone way for the future. Local community may be directly involved into this process having moderate financial support from any sources.

**5. Are there any plans to continue this work?**

Yes, further plans include following main items of activity:

1. Searches of new localities and populations (subpopulations) of *Xanthocypris vietnamensis* in Vietnam and mapping of the precise species distribution.
2. Additional investigation of known and newly discovered populations for better understanding of their nature conditions and seed propagation biology, particularly for understanding of full absence of natural regeneration.
3. Searches of additional financial support for organisation of tree propagation by seeds and cuttings and its plantation in native area based on local communities and experience available in CPC.

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

Free distribution among users of illustrated report of this project by internet (with RSGF permission and acknowledgement).

Presentation of main results completed grant research in special illustrated paper published in scientific press, presumably in *Taiwania* magazine (with RSGF permission and acknowledgement).

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

January – August 2013 - preparation for grant work, talks, discussions, processing official permissions for field work, purchase of maps and other documents, coordination dates, collecting of necessary data and information.

September – October 2013 – field work period.

For more details – see supplement, Tables 1, 2, 4

**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
seven persons x 150 GBR  <u>Budgeted expenses (in proposals):</u> Local transportation: Domestic trip costs for field works, four field sessions, each 25 days, northwest Vietnam, three participants	1000  1000	1050	+ 50	Local transportation by motorbike hiring on steep rocky trails during rainy weather in remote mountain areas was more expensive as was expected (it was about 1 GBR for 2 km). Totally each person cover during field work about 300 km. It was necessary for successful field exploration of the area. It was necessary to include into field searches additional participants from Institute of Ecology and Biological resources (Vietnam Academy of Science and Technology) and from local administration of Vietnam Forest Protection Department (FPD) as official supervisors of the team activity.
20 days x 70  Vehicle lease, vehicle Gas and Maintenance: 1 vehicle lease, fuel and driver costs for 40 days for trips in remote mountain areas	1000  1000 (2000)	1400	+ 400	4 wheel vehicle lease for routes on extremely bad rocky mountain roads on rocky limestone was a bit more expensive as was expected before. We could not partially pay this expense from other sources.
seven persons x 15 days x 8 GBR/day  Logging: three participants for 100 days by GBR 5/day	1500  1500	840	- 660	Less numbers of total days/persons of exploration gives accordingly twice economy.
one person x 5 days x 25 GBR/day  <u>Did not been budgeted</u>	0	125	+ 125	Logging for 5 days in Hanoi for principal investigator necessary for preparation of the project activity and preliminary processing of field work material and results.
seven persons x 20 days x 12 GBR  Food: three participants for 100 days by GBR	1800  1800	1680	- 120	Less numbers of total days/persons of exploration gives accordingly some economy in meal supplies

6/day				
four local guides/porters x 10 days x 8 GBR Assistants/Consultants: guides, porters, local assistants	700 700	320	- 380	Less numbers of total field work days of exploration gives accordingly some economy in local peoples salaries
Drying and processing of additional voucher herbarium specimens for distribution into world Herbaria  <u>Did not been budgeted</u>	0	600	+ 600	It was collected about 700 herbarium voucher specimens verified our field searches. They will be delivered and housed in K (UK), LE (Russia), MO (U.S.A.) and P (France) Herbaria with special acknowledgement for RSGF as extremely valuable scientific materials of completed investigation.
<b>Total</b>		<b>6015</b>	-15	covered from other sources

All costs were calculated in GBR (1GBR for period on investigation was about = 33 677 VND)

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

As we are planning further items of activity:

1. Searches of new localities and populations (subpopulations) of *Xanthocypris vietnamensis* in Vietnam and mapping of the precise species distribution.
2. Additional investigation of known and newly discovered populations for better understanding of their nature conditions and seed propagation biology, particularly for understanding of full absence of natural regeneration.
3. Searches of additional financial support for organisation of tree propagation by seeds and cuttings and its plantation in native area based on local communities and experience available in CPC.

### 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?

- RSGF logo will be used in unpublished report for this grant delivered by internet with permission of RSGF
- Acknowledgements for RSGF will be surely presented in unpublished report for this grant and in all publications (scientific and popular) ever issued from this research.
- Acknowledgements for RSGF will be presented in all herbarium labels for herbarium samples delivered for housing in main world Herbaria in Vietnam, UK, U.S.A., France and Russia.