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	Andriy Novikov
Project title	Monkshoods in Chornogora Mts. (Ukrainian Carpathians): what, why and how we should protect?
RSG reference	16667-1
Reporting period	01.06.2015-21.04.2016
Amount of grant	1700 £
Your email address	novikoffav@gmail.com
Date of this report	24.04.2016

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 prepare the cadastre and GPS-based maps of distribution of all *Aconitum* taxa in Chornogora Mts.			+	For all 12 species GIS maps were prepared using QGis software. For all of taxa (including sub-specific taxa) the database about currently confirmed and known only from literature localities has been built. The data about distribution of these taxa were also used for evaluation of their endemic status.
To investigate abundance, and evaluate size and current condition of populations in Chornogora Mts.		+		During the field expeditions the new and well known localities of aconites were carefully investigated. In addition to declared parameters, I also evaluated the vitality and age structure of populations. This allows re-evaluating the condition of populations, identifying threats and clarifying IUCN categories for all taxa. As a result, the status of *A. × nanum* was changed from DD to VU, and status of *A. firmum* subsp. *fussianum* – from NT to VU. However, my additional investigations in herbarium also showed that there could be found one other taxon (*A. moldavicum* nothosubsp. *simonkaianum*) which still remains with status DD. As well, during my expeditions I did not confirm occurrence here of *A. variegatum* and *A. lycoctonum* which were cited for this region on the base of old herbarium collections; therefore these taxa also remain with DD and probably can be found during the next expeditions.
To prepare vegetation descriptions by Braun-Blanquet			+	For all of studied locations the vegetation descriptions were made. As a result, complete list of vegetation associations in which aconites can take a part was prepared. In particular, field expeditions allow me to find new for Ukrainian Carpathians and rare association *Aconitetum firmi*. The results were published in Modern Phytomorphology journal (vol. 9. suppl., pp. 35-73) and represented during the RISE seminar in Lviv city (20-21 April 2016).
To analyse environment conditions (air temperature, air humidity,			+	For all of *Aconitum* taxa (not only endangered) were analysed environmental conditions using the Environment multimeter FLUS ET-965, Soil pH and temperature meter Ezodo MP-103S, Soil moisture meter RIXEN M-700S. Additionally to declared

illumination, soil moisture, soil temperature, soil pH) for the localities of endangered species in Chornogora Mts.				parameters, I also analysed wind speed and superficial soil moisture. Additionally, on the base of obtained results, I identified and classified soil types for all of studied localities. The results were published in Modern Phytomorphology journal (vol. 9. suppl., pp. 35-73) and represented during the RISE seminar in Lviv city (20-21 April 2016).
To re-evaluate all *Aconitum* taxa by IUCN criteria (for in whole Ukrainian Carpathians) taking into consideration new obtained results			+	Taking into account previous data and results of the new expeditions, the IUCN categories for all of studied taxa were re-evaluated Hence, were identified that in Ukrainian Carpathians in general 2 *Aconitum* taxa have EN category, 8 – VU category, 7 – LC category, and 4 – DD category. As it was mentioned before, one of taxa (*A. moldavicum* nothosubsp. *simonkaianum*) was suggested as possible for Chornogora Mts. and is known only from one confirmed location in other region of Ukrainian Carpathians (Chorniy Dil Mts.). This taxon still requires studies in context of whole Ukrainian Carpathians. My expeditions also did not confirm presence of *A. variegatum* subsp. *variegatum*, *A. variegatum* subsp. *podobnikianum,* and *A. lycoctonum* subsp. *lycoctonum* in Chornohora Mts. in particular, and in Ukrainian Carpathians in general. As a result, these three last taxa also obtained status of DD.
To devise and publish instructions for optimal conservation of endangered *Aconitum* species on the base of analysis of threats and their causes		+		The instructions were developed and shared via mail among natural reserves located in Chornogora Mts. However they were no published. Instead of recommendations, the identified threats were listed in my paper in Modern Phytomorphology journal (vol. 9. suppl., pp. 35-73) and can be used for developing of protection exactly in local conditions taking into consideration concrete population, its location, protective facilities and possibilities, and other valuable moments.
To prepare and publish colour booklet and flyers, which will acquaint wide public with monkshoods distributed in Chornogora Mts., as well as with the threats, and ways of their protection			+	Instead of declared booklet on 20 pages I prepared and published colourful book on 104 pages. Instead of declared flyers I prepared and published six types colourful of postal cards representing the most endangered aconites of Chornohora and containing short information about them.
To distribute devised instructions,			+	All of published materials are sharing for free in Lviv National University, State Natural History Museum,

brochures and flyers among scientific, government and students communities, as well as – to the nature conservation organizations				Lviv Centre of Touristic Information, Carpathian Biosphere Reserve, Carpathian National Nature Park, Institute of Ecology of Carpathians, Institute of Botany, Kyiv National University etc. These materials also distributed during short-term educational events (e.g. in Smilla College and Ukrainian Catholic University), and, in particular, during the RISE seminar.
To organise open international seminar on the problems of taxonomy, distribution and protection of the genus Aconitum on the base of State Natural History Museum NAS of Ukraine in Lviv			+	On the base of our Museum I organized the first Ranunculacean International Seminar (RISE) which held on 20-21 April 2016. During the work of this seminar the problems of investigation and protection of genus *Aconitum* were discussed. During the work of seminar three keynote and four regular talks, as well as one poster were represented. In work of seminar researchers from Ukraine, Austria, Poland and France took a part (https://phytomorphology.org/rise/program/). The materials of seminar were published as special volume of Modern Phytomorphology journal and freely accessible in internet (https://phytomorphology.org/archive/volume-9-supplement/). The hard copies of these materials were also printed and freely distributed during the work of seminar.

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

Because of huge economical crisis in Ukraine, the devaluation of our currency (UAH) was very significant and operations with other currencies were restricted for some period. I did not allow overspending of money by buying equipment in advance, just after I received the granted money. However, it was not possible to prevent devaluation of our currency in other aspects of my project (e.g. publishing of book, postal cards and meeting proceedings). As a result total costs of current project exceeded the expected level; instead of expected 37553 UAH (=1700 £) I used about 47088 UAH (~2055 £). Some money (about 65 £) were saved from expeditions and used for further grant purposes. It was also particularly possible to save money by reducing the number of printed proceeding of seminar from 100 to 50 examples. All other difference (~355 £) I paid from my own money.

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

1. Re-evaluation of all *Aconitum* taxa in accordance with IUCN criteria and preparation of maps of their distribution in Chornohora Mts. As well as, discovering of environmental conditions for these plants, including vegetation, which allow to better understand the links between aconites and surround, and, as a result, to better protect threatened taxa.
2. Publication of popular science book and postcard which are sharing for free and which were very warmly accepted by public. I hope that these materials will improve knowledge level

about aconites not only among the non-scientific community, but also will be a good example for other scientists who are trying to share valuable information with others.

3. Establishing and organization of Ranunculacean International Seminar (RISE) which are planning to organise next year again. I hope that this seminar will held together the most active researchers, who study the Ranunculaceae representatives, especially their distribution and protection.

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

Not relevant.

5. Are there any plans to continue this work?

I hope that this project will be the first step on the way to discover the taxonomic diversity, distribution and protection of Ranunculaceae representatives in Ukrainian Carpathians. Especially interesting aspect, as for me, is investigations on endemic and threatened taxa. I also hope, that this project will be a good background for establishing of international community of scientists studying the Ranunculaceae in general.

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

The results of my project were published in the book which is shared for free in hard version and also freely available in internet (https://phytomorphology.org/books/). This book was published in Ukrainian language and mostly is targeted on Ukrainian scientific and non-scientific readers. However, I also published the paper "Some notes on the genus *Aconitum* in Chornohora Mts." with more precise and detailed scientific results which is sharing for free too (http://phytomorphology.org/PDF/MP9S/09s035073.pdf). Moreover, I prepared and published 6 thousands of postal cards which are also sharing for free.

The printed materials are being shared in different ways – through the universities and institutions, as well as in exhibitions of our State Natural History Museum. They are also shared during the short-term performances and educational events. In some cases, I sent these materials by regular post on request of my colleagues from other cities and institutions. The electronic versions are freely available in internet.

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 grant was used during the period from 1 June 2015 to 21 April 2016. In the schedule declared in my project I suggested that it will be used during one full year (from 1 June 2015 to 31 May 2016) because I did not know when it will be possible to organize international seminar. However, the seminar was realized early and therefore this project was finished in one month early too.

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
Field expeditions in Chornogora Mts	320.00	254.86	+65.04	The exchange rate was 22.09. It was possible to save some money because of organisation of longer field trips instead of several shorter. Then this saved money was used for publishing of books and postal cards.
Soil moisture meter RIXEN M-700S (1 pc.)	175.00	193.37	-18.37	The exchange rate was 22.09. The price was higher because of devaluation of Ukrainian currency.
Soil pH and temperature meter Ezodo MP-103S (1 pc.)	115.00	135.75	-20.75	The exchange rate was 22.09. The price was higher because of devaluation of Ukrainian currency.
Environment multimeter FLUS ET-965 (1 pc.)	155.00	196.87	-41.87	The exchange rate was 22.09. The price was higher because of devaluation of Ukrainian currency.
Publication of booklets (500 pcs.)	455.00	676.92	-221.92	The exchange rate was 22.09. The price was higher because of devaluation of Ukrainian currency. Partly the price was higher also because of increasing of the number of pages from 20 declared to 104 printed. However, I found cheaper publisher and difference in price was not significant.
Publication of flyers (6000 pcs.)	140.00	171.00	-31.00	The exchange rate was 22.09. The price was higher because of devaluation of Ukrainian currency. Partly the price was higher also because of increasing of the number of published materials from 500 declared to 6000 pcs. However, I found cheaper publisher and difference in price was not significant.
Organization of seminar (20 participants)	110.00	288.81	-178.81	The exchange rate was 22.09. The price was higher because of devaluation of Ukrainian currency. It was possible to save money because of reducing number of participants (10 instead of 20) and use of participants' bags printed in previous year. However, extra costs

				also were obtained because of organization of friendly evening.
Publication of seminar proceedings (50 pcs.)	230.00	137.86	+92.14	The exchange rate was 22.09. The price was higher because of devaluation of Ukrainian currency. However, it was possible to save money and use them for other project purposes because of cheaper publisher and reducing number of published materials (50 instead of 100 declared).
Total	1700.00	**2055.44**	+355.44	

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

I believe, that next important step is to extend the area of my investigations on all Ukrainian Carpathians, as well as to extend the object of my investigations on other representatives of Ranunculaceae family (starting from Delphinieae tribe).

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?

Yes, the logo was used on all published materials (e.g. book, postal cards, seminar proceedings, seminar poster).

RSGF received publicity during my project presentation at the State Natural History Museum of NAS of Ukraine; as a result I shared my project materials among our young scientists and some of them (i.e. Hanna Kuzio & Vitaliy Shelvinskiy, Kateryna Danyliuk, Roman Cherepanyn, Solomia Susulovska) also applied for Rufford Small Grant. I also shared information about RSGF among my colleagues during my stay in Kyiv in January 2016, in Cracow – in February 2016, in Paris – in March 2016, and in Bratislava – in April 2016.

11. Any other comments?

I would like to thank you again for given possibility to realise my project.