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	Diana Solovyeva
Project title	Conservation of Scaly-Sided Merganser on Breeding Grounds Worldwide
RSG reference	1084-P
Reporting period	5 September 2014 – 20 February 2016
Amount of grant	£15,000
Your email address	Diana_solovyova@mail.ru
Date of this report	20 February 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
Distant monitoring of AN occupation and organising of nest site protection in Primorye, Russia			Yes	Forty-six digital cameras with remote control were purchased, engineered and mounted in all artificial nests on study site (Kievka basin) in Primorye, RU, where depredation of clutches and females has been reported. No clutch or female was predated in 2015 and 200 ducklings hatched in ANs in 2015.
Creation of effective artificial nest programme in Changbai, China		Yes		With 10 nest boxes made from Chevy Volt Battery boxes by General Motors the team led by Peiqi Liu, WWF China, was able to reach a goal to hatch first ever 11 ducklings in artificial nests in China. Goal of 30 nest boxes was not reached.
Development of proper scheme of AN maintenance in Lesser Xingan, China			Yes	Bishui Nature Reserve manager Li Chengquan and his deputy were attended to the Scaly-sided Merganser Workshop in Vladivostok, RU in September 2015 and they got training on ANs construction, erection and maintenance. A new set of 10 ANs of proper construction will be mounted in Bishui NR in March 2016.
Informing of conservation authorities and inter-governmental organisations on contamination levels		Yes		Total of 53 blood, feather, and egg samples were collected in Primorye, RU. All samples were delivered to Biodiversity Research Institute, USA, where Hg analyses were completed for 35 samples. Scans for other nine metals were done from a part of samples (33) and the rest of samples will be processed in March-April 2016. Delay is related to the lab is overloaded. No egg samples from China were available for analyses, although several eggs were collected there. Chinese colleagues explained that samples were lost in freezer. It might be true.
Study of age-related contaminant storage and conclusions of pollution effect on survival and productivity			Yes	See line above. Scientific paper of feather, blood and egg contamination with heavy metals is prepared for publication and will be submitted as soon as the rest of samples analysed in the lab. General conclusion of the paper: heavy

				metals do not seems to affect survival or productivity as the levels reported were less that exposure thresholds and less than in other sea ducks. This could be explained by freshwater habitats, which are less polluted than marine habitats, and by long presence on clean rivers of Russia (vs China).
Understanding of influence of winter diet on egg production: stable isotope analyses of eggs (test if first eggs in clutch are made from resources stored at winter grounds and if they have higher HM levels, than last eggs in clutch)	Yes			Methodology problem occurred when analysing δ2H from eggs in Cornell University lab. The method of samples pre-treatment seems not be developed yet. Samples were sent to Boston University for analyses for δ13C and δ15N. However during the project we learned the metal pollution is not a problem for the species productivity. Unhatched eggs (potentially polluted) didn't differ in Hg levels to eggs abandoned (potentially clean)
Opening of Visitor centre at SSM Field Station and SSM TF workshop			Yes	Official opening took place during SSME Action Planning workshop in late September 2015 when the most of SSME Task Force members gathered together in Visitor Centre. Now Centre is equipped with TV set, computer and some furniture. Educational materials and design are required for public attraction to the Centre.

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

Despite high level of mutual understanding that was achieved with Chinese partners during this project, it seems that some issues, like study of pollution, were impossible to agree. However since we were able to demonstrate low levels of heavy metals in samples from Russia, it might be possible to receive samples from China in following years (there is nothing to be afraid of).

Deuterium signature was proved as the best method to attribute scaly-sided merganser feathers to the river where these feathers been grown (Solovyeva et al., 2016). However egg pre-treatment for deuterium analyses seems to be poorly developed by now.

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

The first 11 ducklings hatched in China in 2015 after 8 years of unsuccessful nest box programme there. It was critical to change a mentality of Chinese colleagues and to show them that box and entrance dimensions are critical for artificial nest occupation.

We moved further ahead with development of nest protection from predation. Remote control of occupancy, wire spike nets, electric shock were obtained and tested.

Heavy metal analyses showed this sort of pollution seems doesn't affect productivity and survival of scaly-sided merganser.

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

All volunteers working over the project during fieldwork in Russia (including one student in biology and one young educated biologist) received experience in wildlife conservation and they received free transportation to study sites, free meals and living. The staff and volunteers of WWF China received training for nest boxes erection, also they got free transportation, meals and living. Two local villagers in Russia were employed as keepers of nest boxes and of Visitor Centre, thus two local families received benefit from the project. Local restaurant and car repairing station in Lazo, Primorye, Russia, received benefits from feeding us and repairing project cars. Both companies welcomed project poster on their walls. Two local families received benefits from providing housing for project stuff during the field works in Russia.

5. Are there any plans to continue this work?

Yes, scaly-sided merganser project will be continued in Russia for another 15-20 years. Both Chinese groups acting at two known breeding sites will continue their work with artificial nest boxes. Bishui NR plans to set up another 30 nest boxes of proper construction in spring 2016. WWF China, acting in Chagbaishan Mnts will supervise existing nest boxes in 2016 and hopefully in following years.

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

A total of 13 scientific papers and 10 presentations at international and national conferences have been published by project PI based on entire project results (2000-2015). Total of three popular papers were published in local newspapers in Russia and one in international popular journal. Achievements of Chinese group were published online. The SSME Task Force webpage is now working and reflecting major project activities. Publishing of scientific and popular papers and online information will be continued.

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

Works under this Completion Grant were lasting for 1.5 years allowed by Rufford Foundation. In total the Rufford Foundation supported our project for 8 years between 2003 and 2016. Total project length was 15 years by now (2000-2015) and anticipating length is 15-20 more years.

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 works for AN erecting, cleaning and checking in Bishui NR and Chagbaishan Mnts., China	945	1824	879	AN erection in Changbaishan was not planned under GBP 15,000 grant but was requested by Chinese side
Visit of Chinese colleagues to Russia to get training on AM program	390	1339	949	Participation of 3 people in SSME workshop with following training, instead of one Russian going to China for training of Chinese.
Egg and blood analyses (China)	1354	0	-1354	No samples provided by Chinese side
Field works for AN erecting, cleaning and checking in Russia	2700	5130	2430	Car rental was missed in GBP 15,000 budget by mistake. It was mentioned in GBP 25,000 budget
Purchasing and engineering of remote video control in ANs	4050	3468	-582	Found cheaper cameras
Purchasing and engineering of AN protection against predators	420	204	-216	Cheaper work of engineer
Egg and blood HM and SI analyses (Russia)	4284	1505	-2779	Discount for BRI and from lab person participating in the paper. Feathers deuterium analyses for free for participation in the paper.
Equipment for Visit Centre	720	1013	293	We used funds for window protecting rollets.
Salary for local people	540	540	0	
Bank charges	0	462	462	Bank charged GBP 19 per month, and each funds transfer to China and USA was GBP 23.
Total	**15403**	**15485**	**82**	

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

a) To increase species productivity in artificial nests. Continue functioning of existing "incubators" and continue development of third "incubator" on Zhuravlevka R, Russia (supported by Continuation Rufford Grant) to get 10-15 nest boxes occupied there. Find one more river to develop "incubator" in Russia. Continue nest box programme for two remaining breeding populations in China. Reach a goal of another 1000 ducklings hatched in ANs quicker than first 1000 was achieved (15 years).

b) To start breeding habitat restoration in China. Enlarge nest box programme to the rivers of Lesser Xingan where forest is absent from logging (test possibility of occupation for nest

boxes placed on pools along the rivers with no forest). Fish sampling in these rivers is required prior to AN set up.

c) To continue monitoring of numbers on key breeding rivers in Russia and China.
d) To aware no organic contaminations affect the species survival and productivity. Analyse samples already delivered to USA for POPs (persistent organic pollutants).
e) To continue public education. Built field station building for project stuff and laboratory next to Visit Centre in Kishinevka village. Develop of exhibition and employ seasonal Visit Centre stuff. Distribute educational materials as leaflets, magnets, posters.
f) To understand if females born in AN are using AN for nesting. It is possible now with Passive Integrated Transponder (PIT) tag to uniquely mark each duckling and find it later on nesting.

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, Rufford Foundation logo was used in all our presentations. It is placed on scaly-sided merganser Task Force webpage http://www.eaaflyway.net/our-activities/task-forces/scaly-sided-merganser/ and on the external wall of Visit Centre. Acknowledgements for Rufford Grant were published will be published in scientific papers coming out this project.