

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

Thank you for your help.

**Josh Cole, Grants Director**

Grant Recipient Details	
<b>Your name</b>	Tatjana Shibaeva
<b>Project title</b>	Conservation of the Ladoga seal ( <i>Phoca hispida ladogensis</i> ) population, Russia
<b>RSG reference</b>	58.04.08
<b>Reporting period</b>	August 2008-August 2009
<b>Amount of grant</b>	£12,000
<b>Your email address</b>	deva@onego.ru
<b>Date of this report</b>	15 September 2009

**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
<p>To consolidate and extend the successful work done in the first and second projects.</p>			V	<p>A conservation strategy for the Ladoga ringed seal has been formulated and the first management plan for the protection of the Ladoga seal breeding areas is suggested. The strategy paper includes the main goals for the future population size and four different tasks: to prevent mortality caused by man; conservation of the breeding areas; monitoring and research; and public awareness.</p> <p>The papers were presented at the Third Stakeholder Workshop on Implementation of the HELCOM Baltic Sea Action Plan (BSAP) for the Republic of Karelia of the Russian Federation (Petrozavodsk, 26 May 2009) and will be used as an input to elaboration of the National Action Programme for implementation of the BSAP in the Russian Federation.</p>
<p>To continue coordinating the activities contributing to the establishment of the Ladoga Skerries National Park and conservation of the Ladoga seal population.</p>			V	<p>The workshop "Population Status, Problems and Means of Conservation of Ladoga Seal Population" was organised and held (March 24-25, 2009, St. Petersburg) where 43 conservationists and researchers from Karelia, St. Petersburg, the Netherlands and Finland, representatives of Valaamo Monastery and authorities discussed the status of the Ladoga seal population, strategy for its conservation, threats imposed by global warming, problems and first results of seal rehabilitation and problems of the establishment of long-term monitoring of the population. The book of proceedings of the workshop has been published. Elaborated action plan for the conservation of the Ladoga seal population was presented to the working group on the establishment of Nature Park Ladoga Skerries (to the Ministry of Agriculture, Fishery and Ecology of Republic of Karelia). On November 9th 2009, there will be announced the results of the</p>

				tender on the elaboration of ecological/economic basis of the national park and by November 25th the papers should be submitted to the Ministry of Natural Resources and Ecology of Russia (see the story of the fight for the National park establishment in the 2 <sup>nd</sup> RSG project report).
To estimate health status of the population by accurate diagnosing presumable seal pox disease and carrying out parasitological study for the estimation of imposed threat to the species existence in view of seal endemism.		V		Data obtained on helminthofauna of the Ladoga seal indicate that there is no pathogenic effect of parasites on number and probability of survival of seals. Only two species of parasites ( <i>Corynosoma strumosum</i> and <i>C. semerme</i> ) were identified and infection intensity was not high (on average 400 sp.). Postmortem examinations and bacteriological tests of drowned animal revealed presence of pathogen microorganisms <i>Klebsiella pneumonia</i> and <i>Streptococcus faecalis</i> in lungs and heart tissues that indicate that the animal suffered from sub-acute pneumonia (Sokolova et al., 2009). Chemico-toxicological studies revealed highly toxic chemical compounds in subcutaneous fat and glands (hexachlorocyclohexane ( $\alpha$ , $\beta$ , $\gamma$ - isomers), dichlorodiphenyltrichloroethane and its metabolites, aldrin (Sokolova et al., 2009). The number of animals that have visible skin injuries varied from 12 to 20% of animals in herds in 2007-2009. However, among seals entangled in fishing tackle there were no animals with such symptoms, therefore there was no possibility yet to carry out investigations and diagnose the disease.
To initiate the establishment of long-term monitoring of Ladoga seal population within the whole lake by research institutions and other interested organizations.		V		An agreement on the establishment of long-term monitoring of Ladoga seal population within the whole lake was reached by all interested institutions from Karelia and St. Petersburg. Methods and techniques were discussed and coordinated. First data have been collected and processed. However, further practical implementation will require very intensive fund raising.

<p>To continue the activities aimed on raising local awareness and support for conservation of the seals by means of appropriate promotional campaigns and educational programmes.</p>			<p>V</p>	<p>Several years ago not even all local people knew that Ladoga lake is inhabited by such relatively large and unique mammal as Ladoga ringed seal. After several Ladoga Seal Festivals were carried out, interviews were given for local TV in Petrozavodsk, Sortavala and Pitkyaranta regions telling about needs for conservation of Ladoga ringed seals and biodiversity on the whole the number of people that aware of this problem has definitely increased.</p> <p>The information brochures “Ladoga ringed seal” and the brochure on the rehabilitation of seals entangled in fishing tackle were distributed among local population.</p>
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**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

For postmortem examinations, bacteriological tests, parasitological and chemico-toxicological studies we used seals entangled in fishing tackle. Among them there were no animals with visible skin injuries which make up to 20% of herds, therefore it was not possible to diagnose the disease and identify the pathogen that causes skin injury. In order to catch sick animals for investigation a special permission from the Ministry of Natural Resources of Russian Federation is required, which we plan to apply for.

Continual man-made disturbance chases away seals from haul-out shorelines. This has been the case on Lembos and Bajonnyi islands where since 2002 local people started using these islands and then the monastery begun construction of new hermitage (see report on the 2<sup>nd</sup> RSG project). Thus, conclusions on the general trend toward decrease of seal number may be partially induced by observations of seal spatial redistribution.

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

1. A conservation strategy for the Ladoga ringed seal has been formulated and the first management plan for the protection of the breeding areas is suggested. The strategy paper includes the main goals for the future population size and four different tasks: to prevent mortality caused by man; conservation of the breeding areas; monitoring and research; and public awareness. Elaborated management plan of the conservation of the Ladoga seal population was presented to the working group on the establishment of National Park Ladoga Skerries (to the Ministry of Agriculture, Fishery and Ecology of Republic of Karelia), a potential large protected area under the control of the Russian federal authorities with the objective of biodiversity conservation. We hope that Ladoga Skerries National Park will become the body which bears the responsibility for the monitoring and conservation of the Ladoga seal population. The papers were presented at the Third Stakeholder Workshop on Implementation of the HELCOM Baltic Sea Action Plan (BSAP) for the Republic of Karelia of the

Russian Federation (Petrozavodsk, 26 May 2009) and will be used as an input to elaboration of the National Action Programme for implementation of the BSAP in the Russian Federation.

2. The establishment of long-term monitoring of Ladoga seal population within the whole lake by research institutions of the Russian Academy of Science in Karelia and St. Petersburg has been initiated with the special attention to haul-out sites of seals on Valaam Archipelago and breeding areas in the south-east part of Lake Ladoga. Health status of the population is estimated. Data obtained on helminthofauna of the Ladoga seal indicate that parasites do not impose threat to the species existence. Up to 20% of the seal population presumably suffers from seal pox disease but this requires more accurate diagnosing.

3. The activities aimed on raising local awareness and support for conservation of the seals contributed to local pride and reinforced the wider environmental message. Attempts have been made to minimize the conflict between commercial fishery and seals. Local people and especially fishermen are provided with the instruction where to apply in case they find injured by fishing tackle or weak seals (recently there was established the centre for seal rehabilitation in St. Petersburg Zoo).

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

In non-economic terms the protection of Ladoga seal contributed to local pride and reinforced the wider environmental message. Several years ago, not even all local people knew that Ladoga Lake is inhabited by such relatively large and unique mammals as Ladoga ringed seal. After several Ladoga Seal Festivals were carried out, numerous interviews were given for local TV in Petrozavodsk, Sortavala and Pitkyaranta regions telling about needs for conservation of Ladoga ringed seals and biodiversity on the whole the number of people that aware of this problem has definitely increased. Local TV companies were provided with the video film about Ladoga Seal. In the Guidebook "Karelia" Sortavala region is symbolized by Ladoga ringed seal. This testifies to the positive and proud attitude of local people to Ladoga seal.

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

We hope that Ladoga Skerries National Park will become the body which bears the responsibility for the monitoring and conservation of the Ladoga seal population. We will be renewing the strategy paper every three years.

We would like to establish contacts with institutes abroad involved in the management of seal populations, e.g. FGRI (Finland), MOM (Greece), NOAA (USA), Riksmuseet (Sweden) and Polarisntitut (Norway).

It is necessary to evaluate the effect of global warming on the Ladoga seal population. It may mainly cause lack of snow piles suitable for lairs and increase the pup mortality during the lactation period (as in was the case with Saimaa seal - the pup mortality during the lactation period increased from 10% to 30%). During winters in 2007, 2008 and 2009 the conditions for seal reproduction were poor as ice appeared on the lake in late January and only the shore zone was frozen. The blanket of snow was not thick enough to cover lairs and melted early. As a result, pups were poorly protected from predators (wolves and foxes). Due to shorter freezing period lactation period was also shortened. However, even during very mild winters when the lake is free from ice the northern skerries part of

the lake provides suitable lair sites for seals, which makes this part of the lake to serve as a refugium for seals. The only way to compensate for increasing lair mortality is to decrease mortality caused by seals becoming entangled in fishing tackle. How this might be practically achieved is still debating. However, without fishing restrictions, Ladoga seal population may face extinction. Experience of Finland, Sweden and Norway on minimization of the conflict between seals and fishermen would be of great help. We need to study modern technique aimed on the minimization of seal mortality caused by fishing tackle.

Of interest is the fact that the ringed seal (*Phoca hispida hispida*) recently was chosen as a biomarker for climate changes in the Arctic (Marine Mammal Commission, Valencia workshop proceedings March 4-9, 2007). Taking into account that the Ladoga seal has long lifespan and takes the upper trophic level in aquatic ecosystem of Ladoga Lake, this subspecies may serve as a biological indicator of ecological state of the lake. This makes even more valuable the monitoring of the Ladoga seal population. As aviacensus is the most reliable method of censuring we will search for funds for carrying out it. Further studies of the distribution of the Ladoga seal will require the use of satellite or GPS transmitters.

Among seals entangled in fishing tackle there were no animals with skin injuries, but number of animals with such symptoms varies from 12 to 20% of animals in herds. We will apply to appropriate Russian Federation authorities for the permission to catch an animal that has visible skin injuries in order to take samples and diagnose the disease.

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

Formulated conservation strategy for the Ladoga ringed seal and the first management plan for the protection of the Ladoga seal breeding areas were presented at the Third Stakeholder Workshop on Implementation of the HELCOM Baltic Sea Action Plan (BSAP) for the Republic of Karelia of the Russian Federation (Petrozavodsk, 26 May 2009) and will be used as an input to elaboration of the National Action Programme for implementation of the BSAP in the Russian Federation. These papers are presented to the working group on the establishment of Nature Park Ladoga Skerries (to the Ministry of Agriculture, Fishery and Ecology of RK).

Interviews were given for local TV in Petrozavodsk, Sortavala and Pitkyaranta regions. Local TV companies were provided with the video film about Ladoga Seal.

Information brochures were distributed and information posters in Russian and English were installed on Valaam Island showing the needs for Ladoga seal population conservation. The proceedings of the workshop held on March 24-25th 2009 will be published and distributed.

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

RSG was used during the period from August 2008 to August 2009 as it was planned.

**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
Tickets for Visits of Valaam Archipelago by hydrofoil	450	795	+345	Increased ticket price
Motorboat leasing charge at the Archipelago	350	415	+65	Increased fuel price
Logistics (fuel for travel to/from Petrozavodsk to project area using team's own vehicles and rented cars)	600	590	-10	
Accommodation and subsistence Per diem (field days)	1600	1400	-200	Fewer field days
Hotel in St. Petersburg	0	830	+830	Accommodation during the workshop
Materials (equipment and consumables for parasitological examinations)	350	366	+16	
Photographic films, CDs and other consumables)	350	320	-30	
Education/training Preparation and production of educational materials, pamphlet, posters, proceedings etc.	3500	3650	+150	Proceedings of the workshop were not included in the budget
Administration Project administration & report production; presenting the project results to the Ministry	650	419	-231	
Communication Phone calls, fax, Internet	350	338	-12	
Contingency	800	200	-600	
Other: Bacteriological tests	300	0	-300	Paid from another source
Payments to local people helping to catch seals and conduct examinations	550	542	-8	
"Ladoga Seal Festival" and related activities - organisation and materials	750	730	-20	
Advisory activities (bacteriology, seal diseases et al.)	1400	1405	+5	
<b>TOTAL COST:</b>	<b>12000</b>	<b>12000</b>		Exchange rate 1 £ sterling = 43.4 Rubles

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

At the present, the main threats to the population of the Ladoga ringed seal are fishing (annual mortality due to fishing gears is estimated to be over 15% of present population size), disturbance, and global warming (the effect of mainly causing lack of snow piles suitable for lairs and freezing period decrease). We hardly can have an influence on the processes of global warming, but we can definitely reduce the anthropogenic load on the population of the Ladoga seal. When the National Park "Ladoga Skerries" is established (we hope it should happen soon) the real conservation of the islands and area of water where seals form haul-out herds is to be organised. Fishing methods meeting the requirements of the legislation are to be applied in seal breeding areas.

One of the most urgent tasks is the monitoring of the seal population. The most reliable technique is the avia census of animals on transects during weaning period. For the obtaining reliable data on the number of animals and dynamics of the population censusing is to be carried out several years running or with the interval not more than a year.

There is a supposition of the possible contacts between Baltic ringed seal (*Pusa hispida botnica* Gmelin 1788) and Ladoga ringed seal (*Pusa hispida ladogensis* Nordquist 1899) in the Neva River. These species have been developing isolated for 8-9,000 years (Verevkin et al., 2009). Indirect evidence of such contacts is two findings of heartworms (*Dipetalonema spirocauda*) that parasitize in heart and pulmonary artery in Ladoga seals. These heartworms occur in young (up to 3 years old) Baltic seals only (Westerling 2005). Such contacts may lead to crossing of two seal subspecies, which requires studies.

## **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 was used in all materials produced. RSGF received wide publicity in the project area.

## **11. Any other comments?**

We are very grateful to the Rufford Small Grants Foundation for the assistance of our work.