

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	Emanuel Lisichanets
Project title	Conservation of Imperial Eagles (<i>Aquila heliaca</i>) in Macedonia
RSG reference	15034-1
Reporting period	March 2014 – March 2015
Amount of grant	£5975
Your email address	e.lisichanets@gmail.com
Date of this report	

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
Monitoring of known and potential breeding sites			X	<p>An ornithological survey took place during the whole year, starting from March 2014 until the middle of March 2015. During the field survey more than 550.000 ha were explored and 65 possible imperial eagles sites were discovered, some of them well known and some of them new. Habitats ranged from predominantly arable land, dry pastures, woodlands torural settlements. Two new IBAs are proposed in this region (Ovce Pole and Preod-Gjugjance), both fulfilling the global A1 criterion. The IBA Ovce Pole is also designated as Emerald site in Macedonia. The change of traditional agricultural practices, landscape desiccation causing massive abandonment of rural areas and logging / dying out of old trees are factors drastically decreasing nesting possibilities. The survey was always initiated by car, and then we walked around individually or in small groups for several hours, and occasionally for the whole day. Monitoring from high points (hilltops) was often included in our field methods. Field data about the Imperial eagle's population, habitats and threats, as well as other relevant information were collected and processed. During the breeding season the breeding attempts were monitored until the chicks fledged. At the beginning of the breeding season (during February and March) the active nests of each breeding pair were located. The nesting sites were identified during the period of display flights in March and April, when the Imperial eagle's activity is highest and locating the nest is easiest for the observer. But sometimes it was very difficult to locate the occupied nest. Each nest was located on the map and recorded in the database. The nests have also been located using GPS. All found active nests are situated in the central steppe region of Macedonia called "Ovche pole" and also over the river Vardar valley from the city of Veles to the city of Demir Kapija, in the region called Povardarie, at an elevation of between 130 to 450 m (see Fig. 1 in attachment). During the project</p>

			<p>period all occupied nests were inspected in order to identify the number of chicks and obtain particular biometric data, as well as to collect food remnants from the ground beneath the nests and roosting trees. Direct inspection of the nests was never done. During 2014 26 occupied nests were recorded in which 32 young eagles were fledged. Most of the pairs (18) had one chick and seven pairs were recorded with two young. Unfortunately because of very bad weather conditions during the spring and partially during a summer, only 23 chicks left the nests (see Fig.2 in attachment).</p> <p>Nesting events were recorded in two different types of nests. The highest number of 18 nesting events was recorded in the nest on trees and eight in nests on electricity pylons.</p> <p>The shortest distance between two nests occupied at the same time was 2.4 km.</p> <p>Special attention has been paid to the condition of nests and chicks after storms with strong wind and heavy rain. In the March-August period, there have been eight registered cases of strong storms. After storms, two chicks were saved and returned back in the nests. Unfortunately two nests were completely destroyed and nine chicks died as a result of storms.</p>
Locating the most dangerous electric poles		X	<p>This action was partially achieved because we agreed that the most of the funds for this action will be redirected to action for monitoring of known and potential breeding sites. There is very little available data on the electrocution-related problem in Macedonia. According to our research and questionnaire, two birds of the Imperial eagles were found dead-electrocuted during the 2014 and both were young. Electrocution remains a potential threat due to the presence of a large-scale network of high-voltage power lines (as well as other types of power lines) throughout the country, without any special control by the Ministry of Environment and Spatial Planning. The electric poles are providing inaccessible and safe place for building of nests or for roosting, but are dangerous in that they are conductors of high electric voltage. Furthermore, much of the electric infrastructure in the country is power poles constructed from pre-stressed concrete or metal with upright insulators, and these rank as the most dangerous of all types. The gap between the cables and the cross arm is</p>

				small and it makes a big problem for the birds. However, the data gathered in other European countries – such as Hungary, Slovakia, and Russia, shows that the impact of power lines on the Imperial eagles is a serious threat to the species.
Supplementary feeding			X	In 2014 we organised the feeding of eagles a minimum twice a month. About 6 tons of carcasses were deposited in 32 separate deliveries to the feeding site in 2014. Corpses of dead animals collected in the villages around were used to feed the eagles. The feeding site is recognized by the villagers and municipal authorities as an official dump site for dead animals. Pig and cow carcasses are brought from local farms and we made a deal with the owners of a local dairy farm, to deliver occasionally cow carcasses to the feeding place. This will be their personal contribution to the implementation of the project and conservation of imperial eagles. Monitoring of the feeding place is crucial for assessing its functionality. It provides data on the number of birds attending the feeding place, seasonal changes in their presence, age structure, and also helps us to follow the breeding success (fresh juveniles also use the feeding site after their first flights). The monitoring usually was done the same day when food is deposited, and on one consecutive day. On some occasions (adverse weather conditions, large number of birds present in the region, presence of marked birds), 2 days of monitoring were exceptional conducted. Participation of volunteers and the educational role of the monitoring are high, as personal satisfaction of people seeing an eagle feeding is remarkable. During the monitoring, volunteers had a chance to learn more about the species observed. The young Imperial eagles, in the beginning occasionally, but later, especially during the autumn and winter, were regularly visitors on the feeding place in groups from three to nine eaglets. Adult eagles are more connected with their hunting territories and were less present on the feeding place. During the stormy days when it was impossible to hunt, a few times adult eagles have used the feeding capacity of feeding place to deliver the food for their young. Usually, they took little pigs, which were carried to the nests. Insight and experience has shown that feeding is a very important measure which attracts and keeps young eagles safe from poisoning.

				Providing regular and safe food also increase survival of offspring.
Fencing the feeding place			X	In the second half of March, the feeding place in Ergelia village (central part of Ovche pole region) was fenced. A fence was made from concrete pillars and metal mesh 1.6 m high. With this access of people, livestock and carnivores is prevented. This fulfilled all legislative measures prescribed for maintaining the feeding places. Thus prepared, the feeding place can be operational for years.
Preparation and distribution of educational materials			X	2000 copies of leaflet were printed and distributed to the local residents, stakeholders, pupils and locals during the fieldwork.

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

- The first problem that I came across was logistics – organizing the project team for the field work. Involvement of local partners was not as easy as I expected. There were less conservation organisers in the area than I initially thought and people were not interested in doing fieldwork on a voluntary basis.
- Bad weather conditions caused difficulties of the execution of field work during the first 3 months, but this fieldwork was compensated for in the following period.
- The July incident of illegal nest robbing proved that nest robbing (unexpectedly) is an ongoing and present threat. Collaboration with the Hunting Inspectorate and Police, to follow the nest robbing case was difficult, but was eventually close to satisfactory, even though the legal prosecution procedures are extremely bureaucratic. The eaglet in question was stolen by falconers and only good will and my acquaintanceship with people in the locality enabled the Eaglet to be recovered. After a long period of recuperation in the aviary of a zoological garden, the eaglet was released in September.

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

- I suppose that after long years, this is the first complete survey to be conducted on the entire territory of Macedonia. Enormous attention has been paid to collecting relevant data about the state of the habitat, feeding potential, nesting capability and distribution of active pairs. One of the most important outcomes is forming a database with comprehensive data which can be continually updated with new information from the field. This represents a unique database for Imperial eagles in Macedonia. We tried to collect all the legitimate details about each couple and information about the nest (like age of both birds, geographical position of the nest and type of habitat in the close surrounding area, the position of the nest on the tree or position on the electricity pole, condition of tree on which the nest is as well as material from which the nests are made). This database is the cornerstone on which further activities concerning Imperial eagle's protection will be based and will be very useful for current and future research.

- Two areas were identified as important stop-over places and wintering grounds for immature birds. These are the surroundings of the rubbish dump of Veles city and the surroundings of the rubbish dump of meat industry MIK in Sveti Nikole. The highest numbers of wintering birds were recorded in the region of Veles where 12 birds with different ages (fresh young, 2-year-old and 3-year-old) were observed simultaneously during autumn and winter. The region of Veles seems to be an important area for the temporary settlement of juvenile birds due to the abundance of feeding possibilities.
- It was proven that intensive monitoring of more nests can yield valuable data for losses of juvenile birds. Also, using a standardised form, all observers gather the same type of data. From an organisational point of view, it turned out to be very useful to put different people in charge for a few territories in their vicinity, which reduces the costs and increases the amount of information available. And furthermore, monitoring is not only monitoring. During the monitoring, our members spend a lot of time in the field and due to our constant presence in the field, ranchers and farmers do not dare to set poisoned baits, because they know that someone is paying attention to the welfare of the eagles and that they can be punished because their prohibited activities. Finally, during the implementation of monitoring activities, training of volunteers for nature conservation provides the human background for long-term conservation efforts.

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

Some of the data on existing and potential nesting territories we get from local people. Data from local people was collected via inquiries and direct conversation with them. Questions were designed in order to grasp the extent of knowledge of local people of the target bird species. Interviewed villagers showed, on average, poor knowledge of bird ecology and conservation, but most of them stated that the birds have a positive effect on their life (a point of view perhaps based on the well-known legend that Imperial eagles protect fields from ice storms).

Direct benefits of the project have been for residents of villages located in the vicinity of the feeding place. After fencing the feeding place, there is no legal problem for the use of and disposal of dead livestock. This has solved the regulatory problem, since the leaving of dead livestock on the open field is punishable under current legislation.

During fieldwork and interviews with farmers, we have found that they have a problem with wolves. We decided to leave open the door of the feeding place during the night in order for carcasses to be made available for wolves. After this measure, wolf attacks on livestock were reduced and minimized. There were two confirmed instances of wolves using the feeding place. This is the second (even more important) direct benefit of the project - for locals, as well as for the eagles - because the control and reduction of wolf predation on livestock will decrease the risk of possible poisoning of eagles by local farmers.

5. Are there any plans to continue this work?

This project is only the beginning of large serious activity for the conservation of Imperial eagles in Macedonia. If it stops, all positive effects that were reached thanks to this project will be jeopardised and there will be no further progress. After the successful completion of this research, the

implementation of necessary direct conservation measures should be the aim of follow-up activities for Imperial eagle conservation in Macedonia.

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

I plan to prepare a detailed report of this project, which will be published on the website “Research Gate” (www.researchgate.net) and also on the social networks like Facebook and imperialeagle@yahogroups.com. The data collected will be available to all relevant authorities and other decision makers. Information collected during this project will enable the more accurate application and implementation of adequate conservation measures and the implementation of conservation obligations stipulated by international conventions.

This project was also disseminated in the media by an effective information campaign in local and national media which emphasized the conservation threats that this species is faced with. The direct contacts with the public, from whatever reason (good or bad), have had a significant impact. The involvement of a larger number of people in protecting the Imperial eagles in Macedonia and the facilitation of greater public understanding of their part in protecting the natural environment, maybe even unconsciously, will contribute to decreasing the danger for the survival of eagles in Macedonia.

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 period of validity of my project was 12 months, from March 2014 to March 2015. The activities of the project began and ended according to the projected schedule and the grant was used based on the timeframe originally envisaged.

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
Monitoring of known and potential breeding sites	1875	2629	-754	More field research were conducted
Locating the most dangerous medium – voltage electric poles	320	150	170	We agreed that most of the funds for this action will be redirected to first action
Supplementary feeding	1320	951	369	Because bad weather condition, there were less feedings than was planned
Monitoring of the feeding place	500	323	177	Same reason like in previous action
Fencing the feeding site	760	802	-42	
Production of 2000 leaflet	500	484.5	15.5	
Car and trailer maintenance	600	636.6	-36.5	Bad roads were reason for frequent breakdowns on vehicles
Banking and taxes	100	47	53	
Total	5975	6023	-48.1	

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

Looking ahead, I have already planned the following steps:

- Due to the losses of most natural nesting habitats it is necessary to implement measures to increase the nesting opportunities for the eagles. The best solution is to install enough artificial nests in suitable locations. Sometimes the eagles build their nests on an endangered site (where the chances of successful breeding is low), but if it is located in time, it can be removed and an artificial nest can be constructed nearby, at a safe location, thus enhancing the chances of successful breeding.
- The data gathered in European countries shows that the impact of power lines on the Imperial eagles is a serious threat to the species. Because of that, it is very important to isolate danger wires, especially in regions that have proven to be important wintering areas for the young eagles.
- Because it was confirmed that the majority of the Imperial eagle offspring overwinter in the vicinity of the rubbish dump of town of Veles, it is necessary to negotiate with the company that is responsible for management of rubbish dump, to carry out special treatment of organic waste (most often slaughterhouse waste from local slaughterhouses) to make it more accessible and safe (and free from rodenticide), to young eagles as food throughout the year, especially during the Autumn and Winter.
- Disturbance during the nesting season is an ever-present threat, especially in the light of the confirmed case of nest robbing. So, it is important that some of vulnerable nests be guarded, especially during the last 30-45 days before the first flight of the young. With this, breeding success will be increased.
- There are fewer favourable nesting trees than in the past, so it is necessary to prohibit legal and illegal logging of solitary trees, even when some of them are in private properties. All important trees in the regions where Imperial eagles occur must be especially protected. Some of the trees in private properties can be purchased from the owners or owners can take compensation in wood. Beneath such important trees, it is desirable to set an informative board about the level of protection and the necessity of preserving the tree.
- It is necessary to implement ringing of the offspring in order to easily and better follow their movements and migration. Also, this will enable the assessment of the survival rate of offspring.

This is only part of the activities that could be immediately implemented depending on available funds.

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?

At each performance, conversation with stakeholders and locals, newspaper articles and printed materials, I reported that this project was carried out with the support of the "Rufford Small Grants Foundation" and RSGF logo was used always where possible. Many of my friends and contributors heard about RSG for the first time during this project. Some of them have decided to use possibilities of funding and apply with different proposals to RSGF. A 40 minute TV programme on the Imperial eagle conservation with the participation of the project leader was shown on the TV "KTV". Information on the project and activities was included. Six articles on the Imperial eagle live, threat and project activities were published in the national newspapers "Nova Makedonija" and "Dnevnik".

<http://www.novamakedonija.com.mk/NewsDetal.asp?vest=52114747518&id=9&prilog=0&setlzdanie=23179>

<http://www.dnevnik.mk/default.asp?ItemID=0C31E76A172ADE46B3EF0F06AC1365BA>

<http://www.novamakedonija.com.mk/NewsDetal.asp?vest=107141021168&id=49&setlzdanie=23292>

<http://www.novamakedonija.com.mk/NewsDetal.asp?vest=81414109202&id=49&prilog=0&setlzdanie=23249#.U-yIU3i40Kk.facebook>

http://www.novamakedonija.com.mk/NewsDetal.asp?vest=73014101572&id=49&prilog=0&setlzdanie=23237&fb_action_ids=827572877254398&fb_action_types=og.likes&fb_ref=.U9koSRt5mtM.like&fb_source=feed_opengraph&action_object_map=%7B%22827572877254398%22%3A681700871905393%7D&action_type_map=%7B%22827572877254398%22%3A%22og.likes%22%7D&action_ref_map=%7B%22827572877254398%22%3A%22.U9koSRt5mtM.like%22

<http://www.dnevnik.mk/default.asp?ItemID=981F099AF3D6604694E37C819CF1214D>

11. Any other comments?

I would like to express my gratitude to the Rufford Small Grants Foundation for their support for the project. Also expresses my gratitude to all members of my team: Tome Lisichanets, Kostadin Kočov, Zarko Markovski, Bobi and Ana Arsovski, Goran Ilievski, Vlatko Krstev and all others who helped in implementation of the project and collecting data on Imperial eagles during fieldwork. Special thanks to Dr. Metodija Veleovski for sharing his data and experience from previous researches.

Figure 1

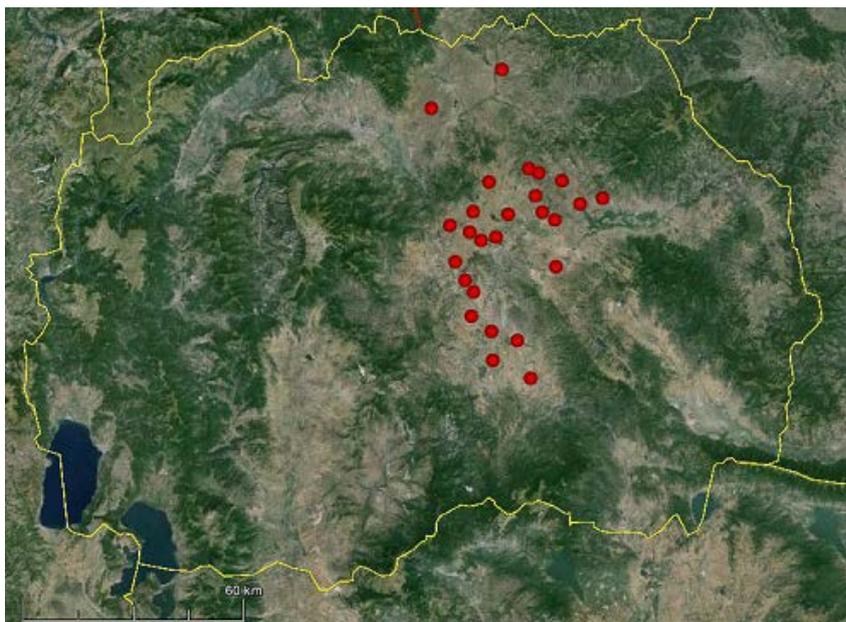


Figure 2

Nr	Waypoint	Position			Site description	Status	Habitat
		N	E	Elevation			
1	AH001			155	Nest on 400 kv pylon	active	Rural area with agricultural land around
2	AH002			130	Former territory	old	Rural area with agricultural land around
3	AH003			550	Former territory	old	steppe/desert like plain
4	AH004			181	Former territory	old	agricultural land with steppe/desert around
5	AH005			158	Nest on 400 kv pylon	active	agricultural land with steppe/desert around
6	AH006			141	Nest on Poplar tree	active	agricultural land with riparian treeline
7	AH007			192	Former territory	old	agricultural land with riparian treeline
8	AH008			176	Nest on 400 kv pylon	active	agricultural land with steppe/desert around
9	AH009			172	Nest on 400 kv pylon	active	agricultural land with steppe/desert around
10	AH010			170	Former territory	old	agricultural land with steppe/desert around
11	AH011			270	Nest on 400 kv pylon	active	agricultural land with riparian treeline
12	AH012			292	Former territory	old	agricultural land with riparian treeline
13	AH013			238	Former territory	old	agricultural land with steppe/desert around
14	AH014			217	Former territory	old	rural area with agricultural land
15	AH015			327	Nest on Oak tree	active	hilly pastures, shrubs
16	AH016			349	Nest on Poplar tree	active	rural area with agricultural land
17	AH017			257	Nest on willow tree	active	agricultural land with steppe/desert around
18	AH018			427	Nest on Oak tree	inactiv	hilly pastures, shrubs
19	AH019			283	Nest on Ulmus tree	inactiv	agricultural land with riparian treeline
20	AH020			225	Nest on Poplar tree	active	agricultural land with riparian treeline
21	AH021			257	Nest on 110 kv pylon	active	agricultural land with riparian treeline
22	AH022			403	Nest on willow tree	inactiv	agricultural land with riparian treeline

23	AH023			380	Nest on Oak tree	inactiv	agricultural land with riparian treeline
24	AH024			283	Former territory	old	agricultural land with steppe/desert around
25	AH025			430	Former territory	old	hilly pastures, shrubs
26	AH026			390	Former territory	old	agricultural land with riparian treeline
27	AH027				Former territory	old	agricultural land with riparian treeline
28	AH028			580	Nest on Poplar tree	active	agricultural land with riparian treeline
29	AH029			318	Reserve nest	inactiv	hilly pastures, shrubs
30	AH030			315	Former territory	old	agricultural land with riparian treeline
31	AH031			380	Former territory	old	hilly pastures, shrubs
32	AH032			210	Former territory	old	agricultural land with riparian treeline
33	AH033			155	Nest on Poplar tree	active	agricultural land
34	AH034			126	Reserve nest	inactiv	agricultural land with riparian treeline
35	AH035				Former territory	old	agricultural land with riparian treeline
36	AH036			403	Nest on Oak tree	active	hilly pastures, shrubs
37	AH037			430	Nest on Oak tree	active	agricultural land with riparian treeline
38	AH038			290	Former territory	old	hilly pastures, shrubs
39	AH039			270	Nest on Oak tree	active	hilly pastures, shrubs
40	AH040			290	Nest on Poplar tree	active	agricultural land with riparian treeline
41	AH041				Former territory	old	agricultural land
42	AH042			390	Nest on Poplar tree	active	agricultural land
43	AH043				Former territory	old	agricultural land with steppe/desert around
44	AH044			176	Former territory	old	hilly pastures, shrubs
45	AH045				Former territory	old	agricultural land with riparian treeline
46	AH046			390	Former territory	old	agricultural land with riparian treeline
47	AH047			370	Former territory	old	agricultural land with hilly pastures, shrubs around
48	AH048				Former territory	old	agricultural land with hilly pastures, shrubs around

49	AH049			350	Nest on Poplar tree	active	agricultural land
50	AH050			279	Nest on Poplar tree	active	Rural area with agricultural land around
51	AH051			180	Former territory	old	agricultural land with riparian treeline
52	AH052			580	Nest on Poplar tree	active	agricultural land with riparian treeline
53	AH053				Former territory	old	hilly pastures, shrubs
54	AH054			330	Nest on Poplar tree	active	agricultural land with steppe/desert around
55	AH055			198	Former territory	old	agricultural land with steppe/desert around
56	AH056			270	Former territory	old	agricultural land
57	AH057			370	Nest on 110 kv pylon	active	agricultural land
58	AH058			430	Former territory	old	agricultural land with hilly pastures, shrubs around
59	AH059			370	Nest on Acacia tree	active	agricultural land with hilly pastures, shrubs around
60	AH060				Reserve nest	inactiv	agricultural land with hilly pastures, shrubs around
61	AH0061				Former territory	old	
62	AH062			400	Nest on 400 kv pylon	active	agricultural land with hilly pastures, shrubs around
63	AH063				Former territory	old	
64	AH064			280	Nest on Poplar tree	active	Rural area with agricultural land around