

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	Hemanta Dhakal
Project title	Participatory Conservation and Ecological Monitoring of Critically Endangered Slender-billed Vulture in Kaski, Nepal
RSG reference	18962-1
Reporting period	12 months
Amount of grant	£4667
Your email address	hdforecology@gmail.com
Date of this report	25th August 2017

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
Study the population distribution of Slender-billed vulture and effort to explore nest.				There is need of more extensive study in the buffer zones of Kaski. There are high possibilities for more nests of SBV as well as other critically endangered species of vultures.
Threat analyses				The food scarcity and habitat destruction are becoming the major threat for vulture in the future in the study area. The illegal use of Diclofenac and food poisoning also cannot be neglected.
Conduct community conservation awareness programs				More extensive campaigns should be conducted in the surrounding periphery (buffer zones) of Kaski district to aware people.

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

During my project we face a great challenge to manage dead cattle on the highways, dead in accidents. This year four cattle were found dead on the highway due to accident. After postmortem they were found Diclofenac and poison free. We wanted to feed those carcasses to vulture as they were safe to feed vulture. But the municipality has its own rules and regulations so they wanted them to be buried. We were successful to feed two carcasses to vultures by local peoples' effort and two were buried. Still cattle are left in the open areas for grazing in many places of Nepal even though in city areas government have prohibited it. There is no proper management for the carcass and cattle on the street.

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

a. Successful participatory Conservation Awareness programmes, more than 35,000 people were targeted:
We were able to conduct eight conservation awareness campaigns successfully.

Programs and Participation:

-Vulture Restaurant Ghachowk (Local Song Competition during women's festival Teej):

On September 4th 2016, International Vulture Conservation Awareness Day was celebrated with cultural song and dance competition in vulture safe feeding site, popularly called Jatayu Restaurant, Ghachowk, Kaski. In that day also organised an interaction programme among key stakeholder and local community on the way of sustainable management of VSFS and vulture conservation.

The programme was organised by Vulture Safe Feeding Site Management Committee together with helping hands, Bird Conservation Nepal, Rufford Foundation, Pokhara Bird Society and Annapurna Conservation Area at Shree Shuklagandaki Higher Secondary School, Ghachowk. Chief guest Krishna Prasad Bhusal, Vulture Conservation Program Officer at Bird Conservation Nepal briefed about the current status of vulture in Nepal and how this ideal conservation work of community link with ecotourism promotion and community development as well. Raja Ram Poudyal President of Vulture Safe Feeding Site Management Committee updates about the current status of VSFS, Ghachowk and share their upcoming plan. Biology lecture Ramji Gautam at Prithivi Narayan Campus, Pokhara recommend to develop the site as a research centre where can easily see the three critically endangered and one endangered vultures. Local government authority Shanti Prasad Gautam, Secretary, Village Development Committee Ghachowk said government body always supportive to community work on vulture and biodiversity conservation. Mausam Karki, president of local youth club, Hemanta Dhakal, Mahindra Katila, Binod Kunwar and Ohm Prakash Sharma wildlife researcher and conservationist also highlighted the importance of vultures, community role and technical feedback on upcoming programme. Local political leader, journalists, social activists and women's groups commit to develop the site as famous destination of ecotourism and biological research centre by collaborating with government organisation and non-government organisation because this site is located just 12 km far from Nepal's second famous tourism destination Pokhara. Other participants of the programme were local vet practitioners, community forest representatives, eco club members, students from Institute of forestry and Prithivi Narayan Campus, member of Pokhara Bird Society, representative from Annapurna Conservation Area.

After the interaction programme there was organised Teej songs and dance competition regarding vulture conservation and community development. How incident, the greatest festival for vultures, International Vulture Conservation awareness day was coincident with the greatest festival of Hindu women Teej in Nepal. Thus the local culture Teej was celebrated together with vulture day. Hindu women make group and sing song and worship lord Shiva with fasting for long life of their husband during this festival Teej. However there were eight groups participated in the song competition with a theme of vulture conservation this year. Many interesting and knowledge giving songs were presented by the participants. Megaraj Nimna Madhyamik School students stood first and won NRs 5000, Women's group from Ghachowk got second prize, NRs 3000, and Milijuli Amasamuha from Ward number-1 took third and won NRs 2000. Bharatibhawan Bal club and Bhajan Mandali won consolation prize.

During the programme, posters, brochures and some publications from Bird Conservation Nepal related to vulture and its conservation were also distributed among local people and participants. With more than 200 participants from different sectors, the programme was informative. During the programme, field guidance techniques for the identification of vultures were also provided to all interested participants.

- Vulture conservation awareness programme and interaction at Deepang Lake together with Pantha Ko Dada Community Forest Users group:

Deepang is 17 km east of Pokhara Valley. At Deepang, total 42 participants were in the vulture awareness and interaction campaign and participants were local stakeholders, members and representatives from Deepang Lake Conservation Committee, Pantha Ko Dada Community Forest Users Groups, retired regional forest officer, local government representative from Leknath municipality, school teachers, students and local fish farmers.

-Vulture conservation awareness campaign at Chapakot Village Development Committee (VDC).

Similarly, vulture conservation interaction programme was conducted in Chapakot Village Development Committee, Kaski, a few km south-west from Pokhara Valley. Chapakot is also one of the probable sites for vultures. Hariyo Ban Nepal is promoting tree plantation and natural disaster control programme in those sites. We targeted around 70 households from four wards (2, 3, 5 and 8) of Chapakot Village Development Committee. Programme was conducted in Pach Bhai (Five Brothers) Jhakri temple in Ward -2 of, Chapakot VDC. Local farmers, representatives from Majuwa Lausi Khola Community Forest, VDC representative (Yubaraj Poudyal), representatives from Bandi Veer Community Forest (Pārbati Didi), school teachers, students and journalist (Krishna Mani Baral). Nandalal Lamicchane and Indira Lamicchane representatives from community forests highlighted the past and present condition of vulture in their locality. Agni Prasad Tritarti (school teacher) and Leknath Lamicchane (community forest representative) described about the decreasing farming trend in those areas.

- Vulture conservation awareness materials distribution door to door programme at Phedipatan (Awaring local community), Pokhara.

In August 2017, we visited Damsadi, Ward 24, Kattuwa, Pokhara, and Kaski to educate local people. Sabita Acharya and Bhumi Acharya guided us to distribute brochures and posters and different materials regarding vulture and its conservation. We visited around 15 houses. According to locals Damsadi Kattuwa was the nesting place for vulture till 2010 and nest of vulture were on Simal trees (*Bombyx cebia*). In 2011 those trees were broken by wind and few trees were cut down by some locals. Since then no nest were made by vultures in those areas.

-Participating for Vulture Conservation Awareness Campaign in Mountain Museum Festival Dec 2016), Pokhara.

This time we were lucky enough to participate in International Mountain Museum Festival. The organizing committee of the programme agreed to our proposal to provide us the space and stall for displaying posters and flex which includes

information regarding vultures in Kaski and their conservation status. We distributed around 1000 brochures, 30 posters and four flex prints.

Third Mountain Festival was organised for 2 days (10th and 11th December 2016) at International Mountain Museum, Pokhara. We were supported by Pokhara Bird Society, Bird Conservation Nepal and Institute of Forestry Kaski. Bird Conservation Nepal supported us by providing the distributing materials and Pokhara Bird Society and IOF Kaski supported us by providing volunteers for 2 days. Around 5000 people visited the stall. The programme was inaugurated by Environment Minister. We distributed around 1500 brochures, 50 posters and displayed different information in three flex prints.

-Participating in first science exhibition in Pokhara at Prithivi Narayan Campus, Pokhara.

First science exhibition in Pokhara was organised by students of Prithivi Narayan Campus, Pokhara. It was the inters-school competition about their invention and ideas in science and technology. Twenty-two higher secondary schools participated in the programme. We had a stall at right corner of the programme and our awareness materials were well displayed. Around 7000 students visited the programme and we were able to distribute 1200 brochures and 40 posters and six flexes. The programme was conducted for 2 days and we were supported by Bird Conservation Nepal with distributing materials and Pokhara Bird society and students from Institute of Forestry, volunteered.

-Nepal Owl festival, Jadipur

I participated in Nepal Owl Festival on February 3rd, 2017. Every year Friends of Nature organise Nepal Owl Festival at different places of Nepal. This time it was at Jadipur, 300 km south-west of Pokhara. People from different sectors in conservation participate in this field to promote conservation of wildlife. I was also encouraged by Friends of Nature to participate and share my conservation efforts to conserve vulture in Kaski. I distributed around 1000 brochures related with vulture conservation and presented my recent works to conserve slender-billed vulture in Kaski in flex.

-Participation in Bird Fair in Ghoda Godi Lake

-Jungle Festival 2017, Pokhara (For 10 days)

The most interesting awareness campaign was conducted in Jungle Festival 2017, Pokhara. The organiser, Parichaye Advertising, was convinced to provide us a big area to display our materials. This programme ran for 10 days from February 23rd to March 4th 2017. Even though the programme was to promote entertainment but many students were interested in our work in birds and their conservation. Our materials were displayed together with the materials from Prithivi Narayan Campus and Pokhara Bird Society. 50 students studying BSc from Zoology Department, Prithivi Narayan Campus Volunteered the programme for 10 days together with me and few members of Pokhara Bird Society. This programme was visited by more than 20,000 people.

- Vulture identification and monitoring training and field practice to research assistant of Institute of Forestry, Tribhuvan University at Land filled Site, Pokhara:

On September 5th 2016, eight research assistants on the project were trained in vulture identification and monitoring in landfilled site (garbage and carcass dumping site) in Pokhara. Seven students naming Suman Ghimire- MSc, Sanjay Raj Tamang BSc, Bipana Maiya Sadadev BSc, Purnima Acharya BSc, Namrata Khatri BSc, AmritPoudyal BSc, Prativa G.C BSc, from Institute Of Forestry, Kaski and one lecturer, Binod Kunwar, at Prithivi Narayan Campus have benefited from that training and field practice. The programme focused on providing the method to identify the vulture species and its different age classes (juvenile, sub-adult and adult). Also the vulture record keeping techniques was provided to the participants. The students participated in the programme will also be encouraged to participate in vulture conservation awareness campaigns and monitoring of vultures in upcoming days. The programme was led by Hemanta Dhakal by the guidance of Krishna Prasad Bhusal, Vulture Conservation Program Officer, Bird conservation Nepal.

Students were given a form and were guided how to fill the form. The identification techniques to identify the different species of the vulture and their age classes were also provided before providing the form. The absolute count method was used to count the number of vultures by using binoculars and DSLR. A handbook, Birds of Nepal, was also used to avoid the confusion for species identification.

NSAIDs monitoring and Interaction program with Vet Practitioners.

After visiting some vet shops in Pokhara, we conducted 1-day interaction and informal questionnaire survey with few vet practitioners and found that there was no illegal use of Diclofenac and Meloxicam. But, during the questionnaire survey many people were unaware about the Diclofenac and Meloxicam. This time we also make them aware about the use of NSAIDs and its effects in Vulture. Educating people on NSAIDs and their impact on vultures could also be included in future in next coordinating with vet practitioners

B. Nest Identification and Monitoring:

One of our main objectives was to determine the population ecology of SBV in Kaski. We successfully conducted our monitoring programme and one nest of SBV was recorded in study area with successful breeding. Nest of red-headed vulture (1), white-rumped vulture (1) were also recorded. These species are also listed as critically endangered.

S.No.	Species	Status	Nesting location	GPS location	Nest Type	Breeding Success	Nesting Tree species	Number of Eggs	Human Settlement	Water Sources
1	Slender billed vulture	CE	Dobhillia	28.160671 N, 84.00100 E	Active	100%	<i>Bombyx ceiba</i>	1	In 50m distance	Within 50m distance(river)
2	White-rumped vulture	CE	Deepang lake	28.182272N, 84.070725E	Active	100%	<i>Bombyx ceiba</i>	1	More than 100 m distance	Within 50m distance(Lake)
3	Red-headed vulture	CE	Chapakot	28.17110 N, 083.97186 E	Active	100%	on cliff	1	More than 1km distance	Within 50m distance(river)

The monitoring work was carried out for throughout the project period.

Slender billed vulture

Among nest recorded of slender-billed vulture the breeding success was found 100%
i.e. Breeding success= Productive nest /Active nest* 100= 1/1*100=100%

Number of nest of SBV-1

Location: Dobhilla,

Number of eggs-1

Number of chick flown from the nest-1

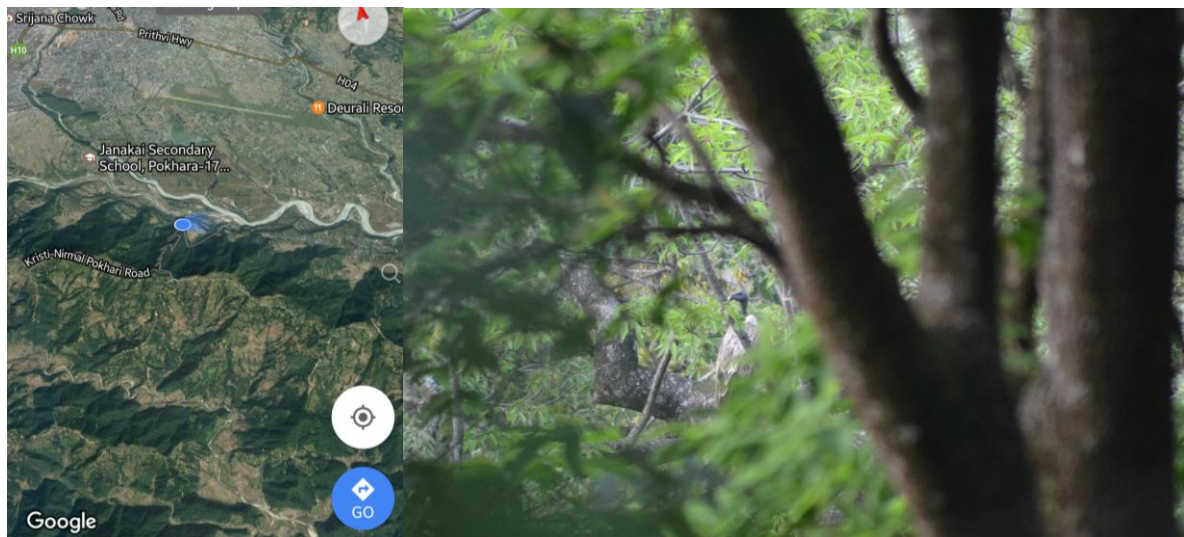
Height of the tree-Approx. 10 m

Distance of the tree from human Settlement- 50m

River or any other water source near from the nest- Approx 30m

Tree species used for nesting – *Bombyx ceiba*.

(28.16133, 84.00100, elevation 740m)



Picture 1 Location of Nest in Google map and Slender billed vulture in its nest.

Table 1: Average total population of different species of Vulture from August 2016- August 2017, Pokhara Valley

Months	Slender-billed vulture	Red-headed vulture	White-rumped vulture	Egyptian vulture	Himalayan griffon vulture	Eurasian griffon vulture	Cinereous vulture	Bearded vulture	total
Sep-16	15	17	57	71	15	0	0	0	175
Oct-16	40	33	106	177	21	0	0	1	378
Nov-16	30	50	132	360	39	2	39	0	652
Dec-16	19	22	100	115	174	5	28	0	463
Jan-17	6	9	49	67	54	3	13	0	201
Feb-17	10	12	22	18	61	1	6	0	130
Mar-17	12	6	22	51	34	0	0	0	125
Apr-17	20	41	34	33	29	0	0	0	157
May-17	6	7	35	13	65	0	0	0	126
Jun-17	7	7	15	4	44	0	0	0	77
Jul-17	16	21	36	4	33	0	0	0	110
Aug-17	8	2	12	45	0	0	0	0	67
Total	189	227	620	958	569	11	86	1	2661

*Total Observation =44, in one year(days spend 122 days)

Total number of vulture recorded= 2661

Average Total number of Vulture = 2661/44=60

*The average total population of vulture around Ward 14, 15 and 18 of Pokhara valley was 30 in 2013 (Dhakal 2013, Unpublished, A report submitted to BCN).

Sites visited with GPS location

S.No	Sites Name	GPS Location
1	Ghachowk	28.306236 N, 83.9465560 E
2	Damsadi	28.17249N, 83.97105
3	Deepang	28.182272N, 84.070725E
4	Thoolakharka (Australian Camp)	
5	Ghachowk	28.306236 N, 83.9465560 E
6	Lachowk and Hemja	28.306236 N, 83.928240 E
7	Dobhill and Land filled site	28.160671 N, 84.00100 E AND 28.163491 N, 84.009875
8	Ghachowk	28.306236 N, 83.9465560 E
9	Sanitary Land fill site	28.163491 N, 84.009875
10	Hemja and Narayan Than	28.27900 , 83.934
11	Ghachowk	28.306236 N, 83.9465560 E
12	Deepang	28.182272N, 84.070725E
13	Proposed International Airport Site	28.1825 N, 84.0243 E
14	Chapakot(Kaskikot)	28.17110 N, 083.97186 E
15	Phedipatan	28.17110N, 083.97186E
16	Nirmal Pokhari	28.15449N, 83.99445E
17	Kristi	28.162517N, 83.963165E

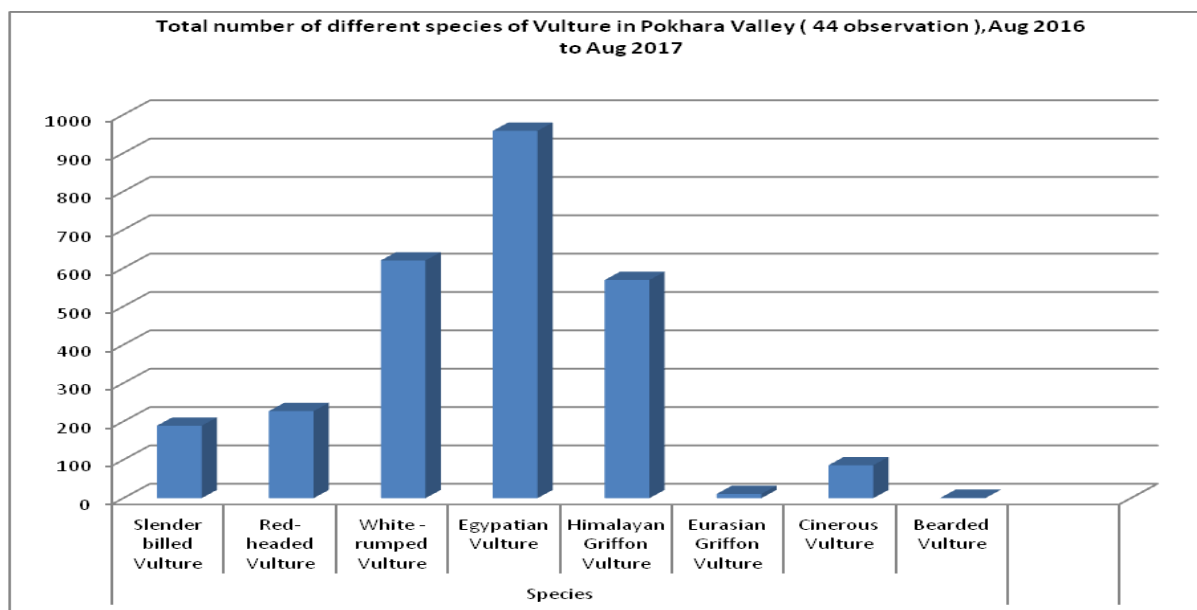


Figure 1: Vulture Population in Pokhara 2016-2017

This chart clearly justifies Egyptian vulture was mostly seen vultures in overall year 2016-2017 and Eurasian vulture was least seen. Good number of Slender billed vulture i.e average total number of vulture sighted in 44 sighting was 4.

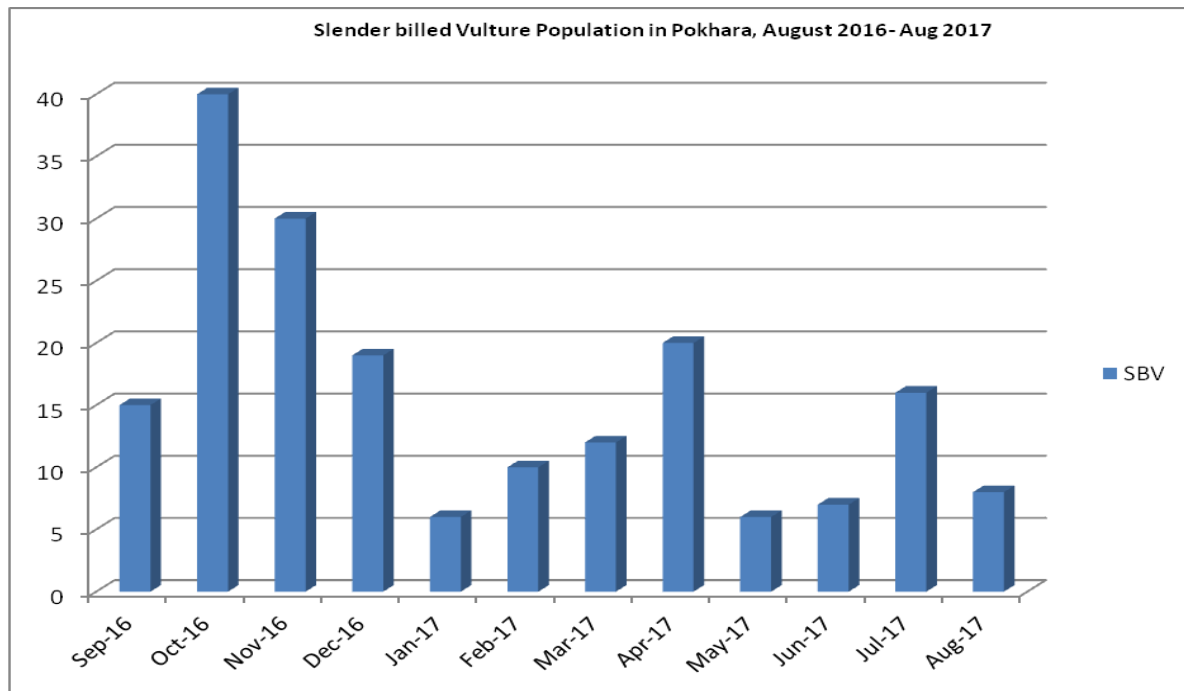
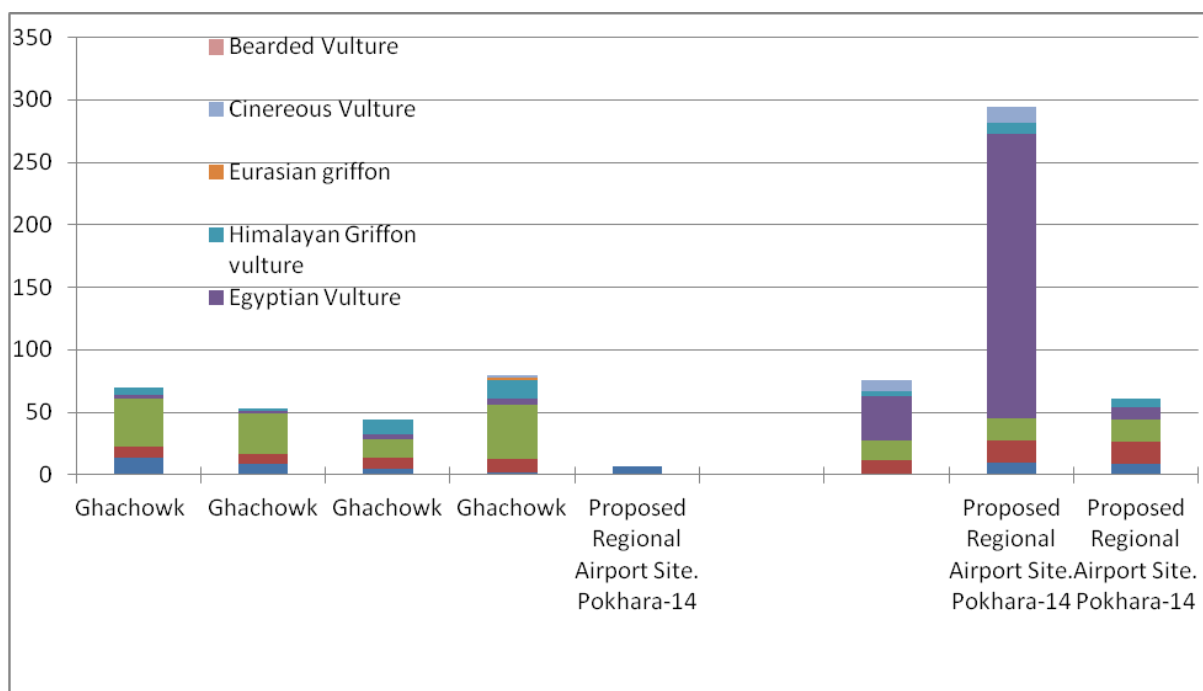


Figure 2: Slender billed Vulture Population in 2016-2017 in Pokhara

Total number of Vulture s of different species during Carcass feeding, September – 2016 to August 2017 Kaski, Nepal



c. Threat Analysis:

We conducted questionnaire survey and selected 300 respondents randomly from different selected sites of Kaski. The result suggested us that there food scarcity and habitat destruction is becoming the major threat to vulture in Kaski in future. The high voltage lines (electrocution), poisoning, and Illegal use of Diclofenac NSAIDS in veterinary also minor issues. In 2014-15 there was record of death of two Himalayan griffon vultures due to high voltage lines. Most people responded positively about the usefulness of vultures.

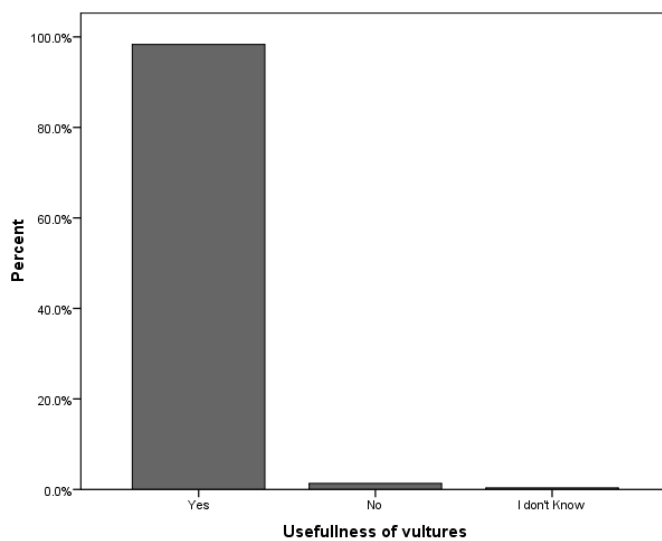


Figure 3: Bar Diagram showing People attitude toward vulture in Kaski

Most people think that vulture population in their area is decreasing but, few think they are increasing.

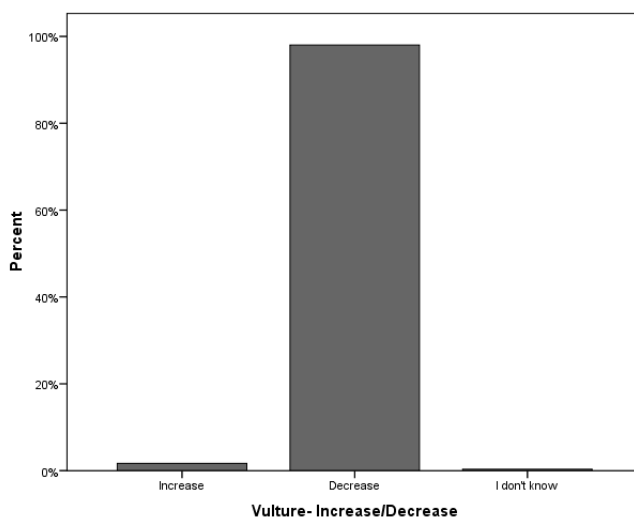


Figure 4 People's view about vulture population in Pokhara

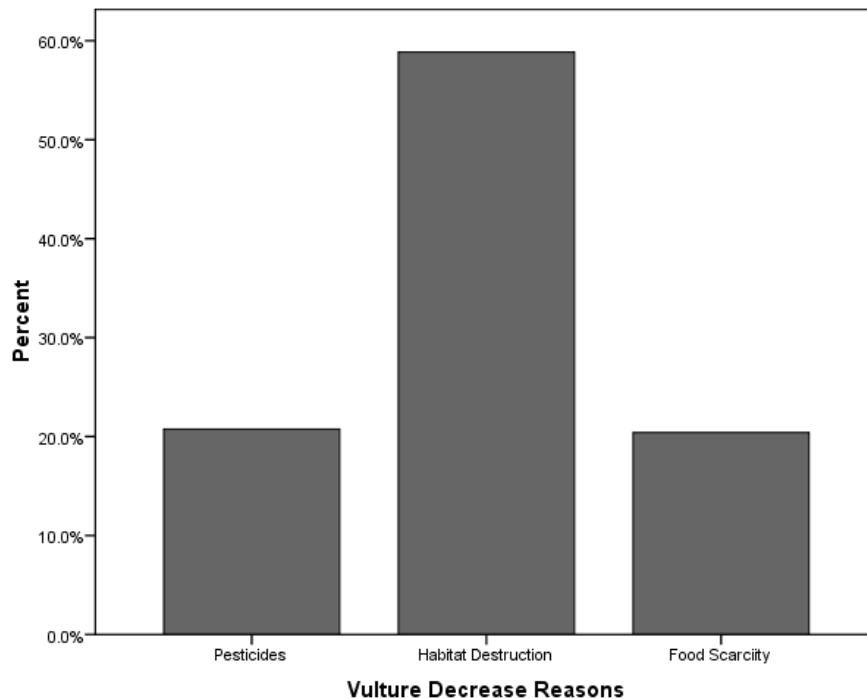


Figure 5 Respondents view regarding population decline of vulture

There were different views behind the decrease in the number of vulture, the main reason or threat to vulture was viewed as habitat destruction, pesticides and poisoning and food scarcity. People think other threats were negligible

This chart below indicates clearly the decreasing ratio of farming trend of cattle among local people in past 5 years. The food availability is decreasing as there is increase in the burying trend of carcass. Carcasses of cattle are the major source of food for vultures in Nepal

	Present	Past(5 years back)
Bury	84.6	46.2
Others	15.4	53.5
Give to Deskiner	0	0.3

Figure 6 Table showing the carcass disposal technique in Kaski

Table 1 : Table Showing the farming trend in Pokhara

Livestocks	Five years ago	Now	p-value (t-test)
Buffalo	1.53±0.551	1.0±0.164	0.01
Cows	2.45 ±1.59	0.59±864	0.000
Goats	0.03±0.477	0.47±0.545	0.000
Others	3.27±4.065	0.94±2.347	0.000

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

The local people participation was found more impressive and encouraging. During my project more than 30,000 locals benefited directly and indirectly. Most people were happy to know the main cause of decline of vulture in Nepal and their status in present context of the world. They also highlighted the decreasing status of vulture in their area.

5. Are there any plans to continue this work?

I am looking forward to continue my work. Many people highlighted that participatory conservation awareness campaigns for vulture is also needed in some peripheral or buffer zones of Kaski. I visited some places. I recorded good number of vulture sightings. I will continue my regular monitoring of recent project sites coordinating with local people in future adding some of the sites in buffer regions of Kaski like Ulleri, Bhadaure Dada, Ramche dada, Damauli, Saaldada, Upper sites of Ghachowk (ACAP Area). All the methods followed will be same.

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

I am working on a scientific paper about the outcomes of my study. Soon my results will be published in some local and national level newspaper. My research report will be shared with local government authorities, library, Bird Conservation Nepal, Pokhara Bird Society, vulture restaurant Ghachowk, Prithivi Narayan campus and Institute of Forestry-Pokhara. I will be conducting result sharing talk programme with my BSc students in Prithivi Narayan Campus and Institute of Forestry.

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

This grant was started from September 2016 and ended in August 2017. The time frame was followed as planned in the proposal of the project.

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. 1£=NRs131

Item Description	Budget Amount	Actual Amount	Difference	Comments
Transportation - Local transportation 2 person 44 trip(122 days)	1200	1232	32	More days were spend in the field 2 days more
Assistant Cost For Ecological Monitoring of SBV	832	832		

For Questionnaire survey and Awareness program				
Stakeholder Workshop, Awareness Campaign and community trainings (8)	1200	1200		
Awareness Materials T-shirt(50)50*7£ Broachers (2000) piece 2000*0. 1£ Flex Prints(10) 10*5£=50 And stationary items	600	1000	400	300 (Bird Conservation Nepal) (300BCN+ 100for stationary)
Food cost during field work	720	854	134	
Miscellaneous	145	00	-145	
Total	4697	5118	421	300 BCN and rest 115 personal

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

There need of more conservation awareness programmes in Kaski and buffer regions of Kaski. Increasing number of soaring population of vulture in and around proposed international airport site could be a main threat to vulture in vulture also a big issue for the management of flight for aviation department. There are many records of flight accident due to big birds in Nepal. Solution to this problem is needed from policy making level. Next step could be highlighting and making policy level and aviation department aware about the scenario.

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?

We used The Rufford Foundation logo in all our awareness materials (brochures, t-shirts and flexes). The publicity of Rufford found was done in more than 35,000 people during different vulture conservation awareness programmes of the project.

11. Any other comments?

During my study I could say that the food scarcity may be serious threat to vulture in future. The habitat destruction and food poisoning are also common threat to vulture besides use of Diclofenac. Beyond my study sites, Identifying the nesting site and its conservation and awaring people about the importance of vulture still is the major work left to be done in many parts of Kaski and its peripheral districts.

Participatory Conservation and Ecological Monitoring of Critically Endangered
Slender-billed Vulture in Kaski, Nepal.

SBV monitoring in different parts of Kaski



Vulture activities in Vulture Safe Feeding Site Ghachowk, Vulture restaurant



Landfills site



SBV nest in Dhobill



Participatory Conservation and Ecological Monitoring of Critically Endangered Slender-billed Vulture in Kaski, Nepal.

Vulture Awareness Programs



Dancing in the song to promote Vulture conservation and tourism in Ghachowk Vulture Restaurant



Students getting information on displayed materials about vultures and other birds of Pokhara



Leaflet

Participatory Conservation and Ecological Monitoring of Critically Endangered Slender-billed Vulture in Kaski, Nepal.



Interaction Program with Local People at Deepang Lake

Participatory Conservation and Ecological Monitoring of Critically Endangered Slender-billed Vulture in Kaski, Nepal.



Awareness camp in Prithivi Narayan Campus Pokhara



Participatory Conservation and Ecological Monitoring of Critically Endangered Slender-billed Vulture in Kaski, Nepal.



Participatory Conservation and Ecological Monitoring of Critically Endangered Slender-billed Vulture in Kaski, Nepal.

Display of Vulture awareness materials

Students participating vulture population Monitoring training at Land filled site



T-shirts

Participatory Conservation and Ecological Monitoring of Critically Endangered Slender-billed Vulture in Kaski, Nepal.



Local man showing the place in Damsadi, Phedipatan, Pokhara Where vultures used to make nests . 5 years ago 3 nests were recorded from this place.

Participatory Conservation and Ecological Monitoring of Critically Endangered Slender-billed Vulture in Kaski, Nepal.



Monitoring Vulture activities with visitors and experts in Vulture Restaurant.

