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	Kalpana Bisht
Project title	Understanding and Analysis of Blue bull conservation and its Conflicts with Local Communities in the western TAL area of Nepal.
RSG reference	21988-2
Reporting period	June 2017-August 2018
Amount of grant	£5000
Your email address	Kalpana.env08@gmail.com
Date of this report	Aug 2018

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 study the Ecological behaviour/ Habitat assessment of the Blue bull			▓	Ecology and habitat of animal was identified.
To analyse the threat for animal in the given study area			▓	Level and type of conflict was identified and potential threat of animal was analysed which would be helpful at policy level for the related national parks.
To conduct the Conservation Outreach and Capacity building programme in the study area			▓	Various conservation activities like preparation and distribution of brochure, focus group discussion focusing women group, interaction with park authorities and stakeholders were conducted.

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

None.

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

      a. Habitat of blue bull in the TAL area of Nepal has known.
      b. Issues and nature of blue bull conflict with local communities has identified.
   c. Raise conservation awareness on importance of blue bull in local level.

The outcome of the research can be explained as follows:

a) Habitat:
Blue bull habitat within the study area was identified by questioning the park authorities such as the warden, game scouts, elephant drivers and field technicians. The direct observation as well as faecal location verifies the blue bull areas in the given study area. The transect survey was conducted in Banke National Park and Suklaphanta National Park on random basis. Based on preliminary and questionnaire survey in the TAL areas the population of blue bull is viably increasing.
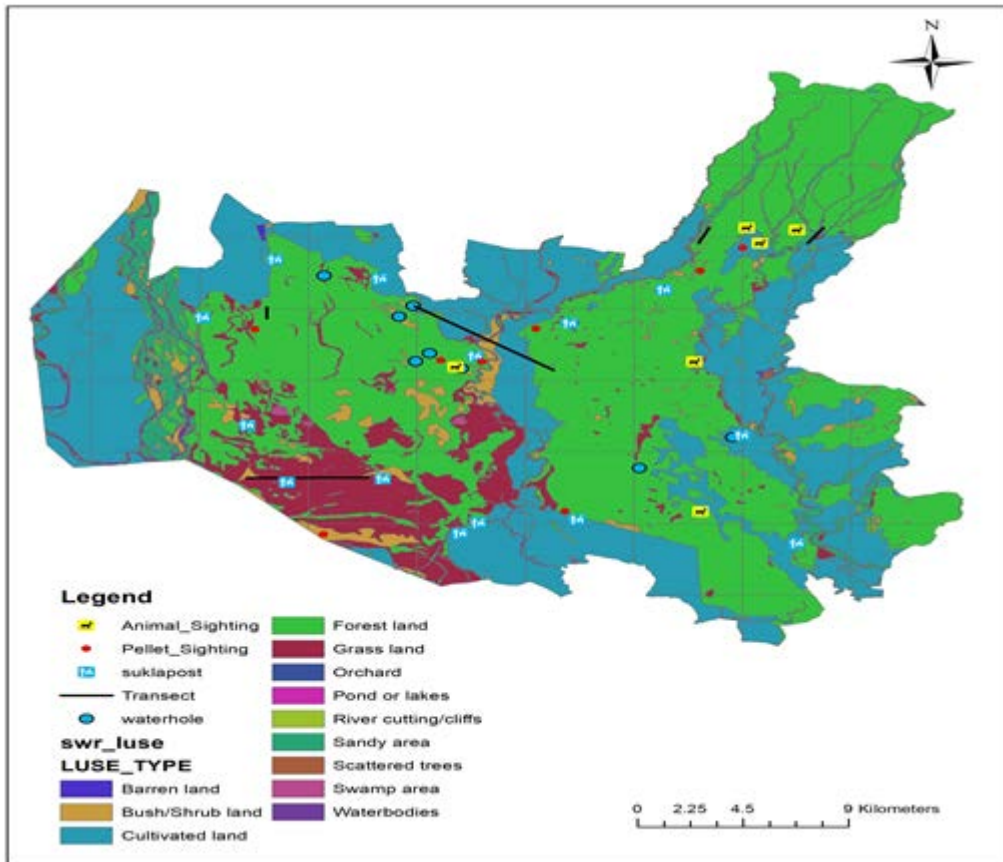
Map showing transects line, animal and pellet location at SWR
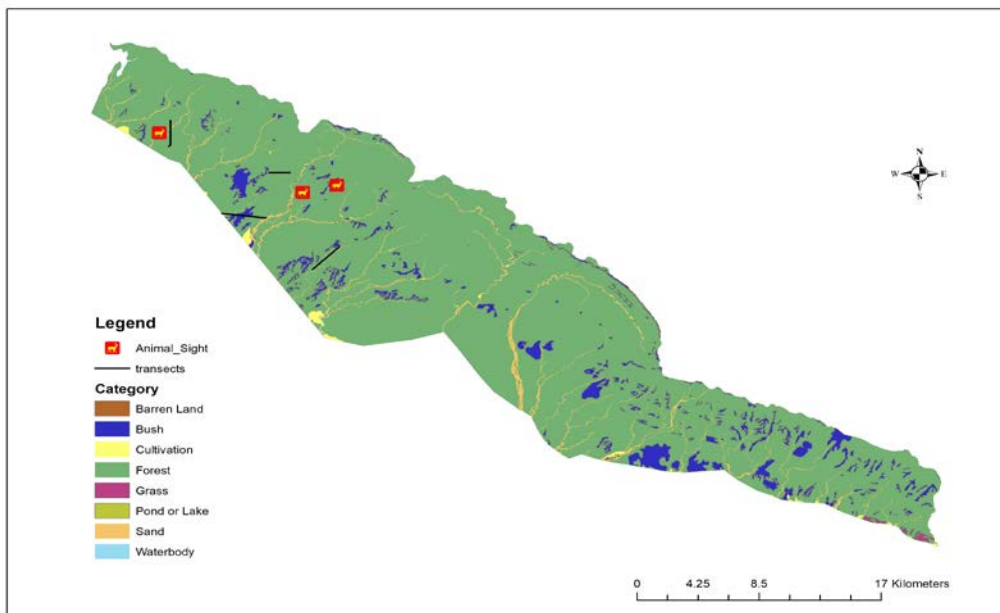
Map showing transect and animal location at BaNP

1. Feeding habitat: The study in different places verifies that blue bull is basically a mixed feeder. Blue bulls were frequently recorded feeding on the short grass lawns dominated by I. Cylindrical. They were not observed feeding on the mature grasses. Study in different places signifies that blue bulls were confined in wooded grass land for feeding and riverine forest for resting purpose. Blue bull usually avoids dense forest. They prefer semi-open forest and freely enter into cultivated lands. After park establishment and prohibition of livestock grazing inside the park, the park has became denser in terms of habitat structure due to thick understory of shrubs and tall grasses. At the same time the buffer forest have become degraded and disturbed due to encroachment so the animal losing its original ground and is also easier to poach. Blue bull frequently has seen feeding on *M. philippinensis*, *Eugenia jambolana*, *Ficus glomerata* as tree. Similarly *Callicarpa macrophylla*, *Flemingia* spp. as shrubs and *Imperata cylindrical*, *Saccharum spontaneum* as grass.

   Habitat map was prepared on the basis of animal significant and distribution of faecal materials and footprints in the field. Blue bulls were mostly sighted in the wooded grassland surrounded by dense vegetation cover of sal forest and riverine forest. It was observed that the habitat of this animal was located about 0.5 to1.0 km from the park boundary which was proximity to the human settlement. So the animal can frequently entered into the agricultural field and buffer zone forest. The preference of boundary habitat area may be due to availability of food water and cover. Blue bull has high affinity to the crop species cultivated in the park boundary area. Blue bull ordinarily require wooded grassland and cultivated land that are most used for feeding, loafing, calling and nesting.

2. Population status: Blue bull once plentiful in eastern to western tarai latter then has of crisis and vanishing from many parts of the tarai forest due to habitat encroachment and habitat change. But it is exciting that the current research indicate increasing trend of blue bull in these areas. Sharp fluctuation increase-decrease-increase in the number shows that the population of the animal is not stable. Because of crop raiding nature local people have negative attitude towards this animal. To get rid of the crop damage local people kill the animal by illegal hunting and poisoning.

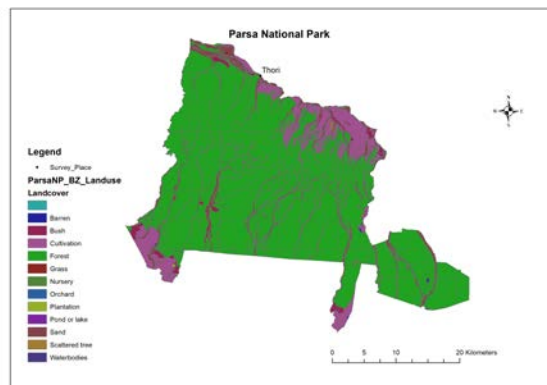**Blue bull- Human conflict:**
To know the human- Blue bull conflict a set of questionnaire were developed. Following the simple random sampling 40 households from each study area were selected.
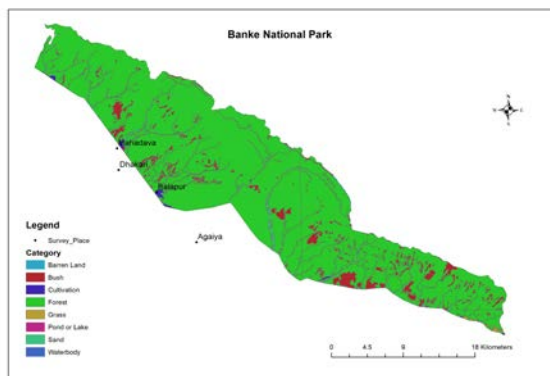
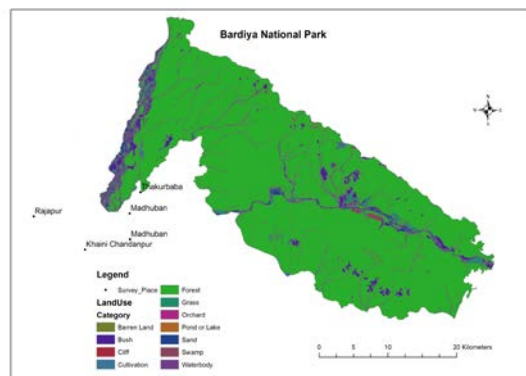Fig: Overall questionnaire survey map
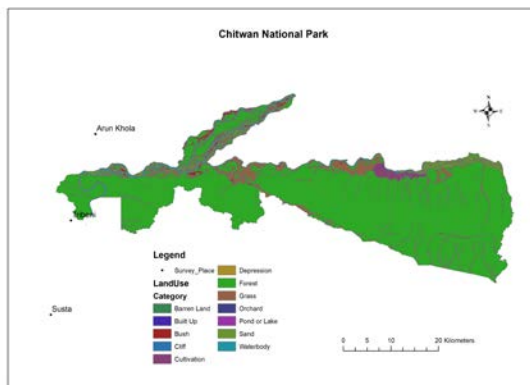
(a)

(b)

(b)

(d)

(e)

Fig (a), (b), (c), (d), (e) showing the questionnaire survey location at different National Parks

The questionnaire was conducted at buffer zone of five protected areas namely Chitwan National Park (CNP), Parsa National Park (PNP), Banke National Park (BaNP), Bardia National Park (BNP) and Suklaphanta National Park (SNP).By analysing the survey following results were found
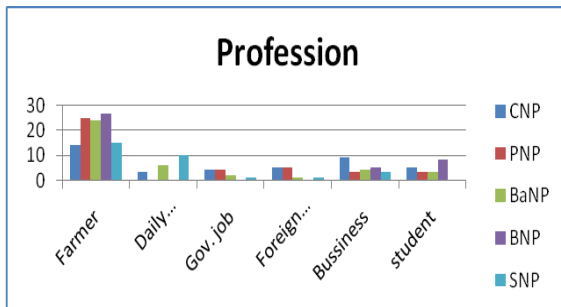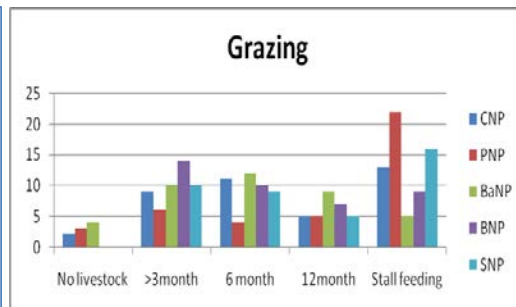

Fig: Graph showing profession of respondents

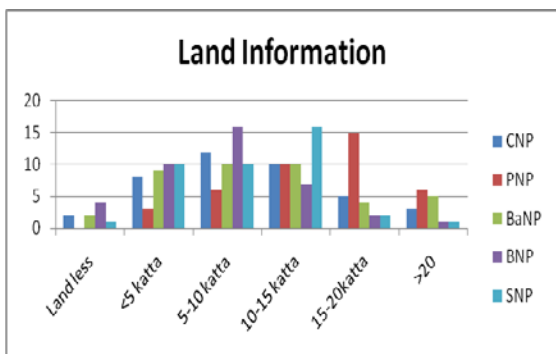Fig: Graph showing livestock grazing status

Fig: Graph showing productive land duration that meets the needs
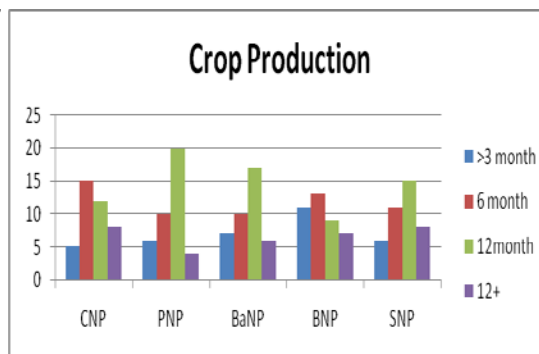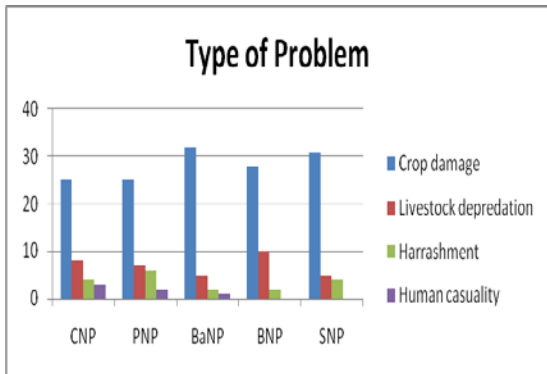

Fig: Graph showing crop production and

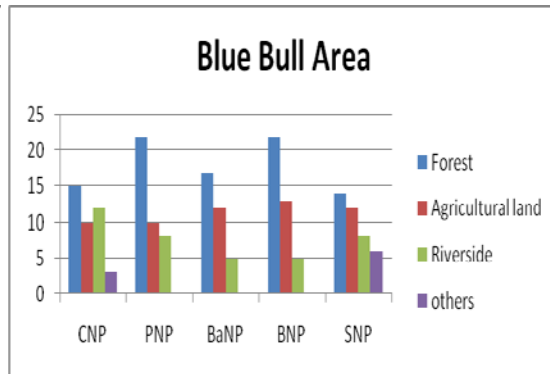Fig: Graph showing type of problem by wild animals.

Fig: Graph showing location of Blue bull that were seen by repondents
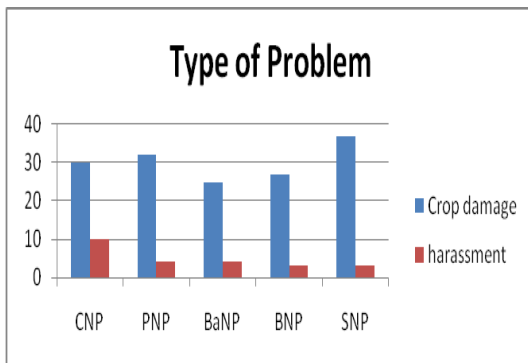

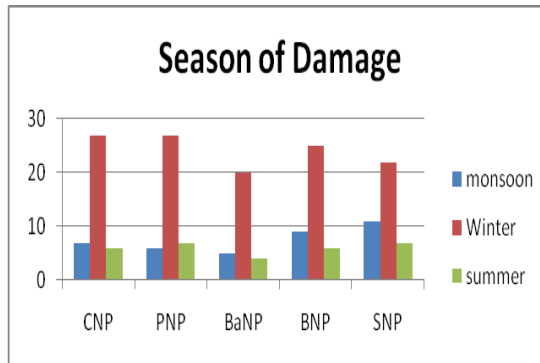Fig: Graph showing type of problem By Blue bull
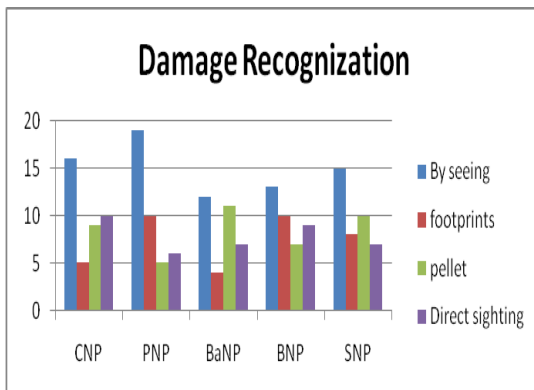

Fig: Graph showing season of dameg by Blue bull

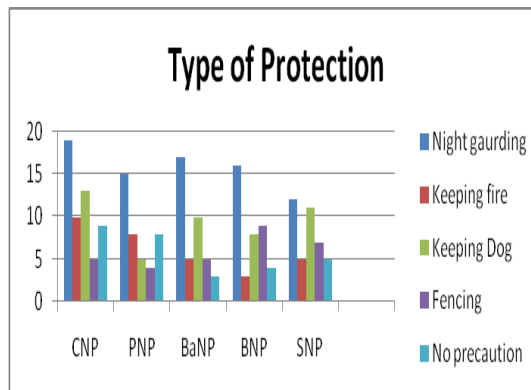Fig: Graph showing damage recognization done by Blue bull

Fig: Graph showing protection measures from wild animals
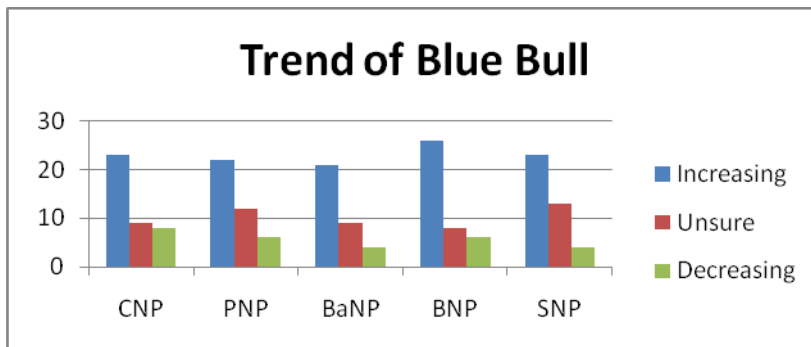
Trend of Blue Bull

Fig: Graph showing trend of Blue bull

Based on the survey it was found that most of the respondents were farmers. Illegal grazing also exist and stall feeding is more practiced at PNP. Crop production duration that meets the needs was found higher at CNP and SNP. Most people indicates blue bull is more destructive at winter season it indicates they mostly prefer lentil, wheat and others winter vegetable. Based on informal discussion with respondents the animal's affinity for agricultural crops makes them quite vulnerable to poachers. Snaring is also a common practice to trap blue bull in the agricultural fields. Besides poaching predation by tiger is probably another important factor for the decline. Blue bull usually avoids dense forest. Some people also told that local people kill the animal for their meal. Guarding overnight, shouting and making noises/fire were the protective methods adopted by local people to rescue their crops from being raided which were only partially effective. However the measures were applied some degree of crop raiding by blue bull always exists due to the pestilence nature of the animals and may be because of lack of preferred food inside the NPs.

i)   Status of crop damage in different NPs: it is not unusual to see wild animals attracted to areas with grain or other crops adjacent to their natural habitat. This study found blue bull as crop raider to farmlands. Blue bulls were reported to feed on all the major crops grown in this area. Rice was reported to be eaten at all stages but the mature stage was most preferred. Maize, mustard and lentils were also recorded to be eaten at all stages. Wheat was highly preferred at the early stage where as lentils were highly preferred at all stages. Apart from agricultural crops vegetables were also considerably damaged by blue bull. Farmer reported males are more destructive to agricultural fields. The interactions between blue bull-livestock-local people was two way. The impact to local people because of Blue bull was due to crop depredation and impact of blue bull was due to livestock encroachment and disturbance due to illegal fodder and firewood collection, poisoning and poaching from the side of local people. Insufficient food as per their requirements blue bull goes for crop raiding in the late evening jumping even 6-7 feet high wall.
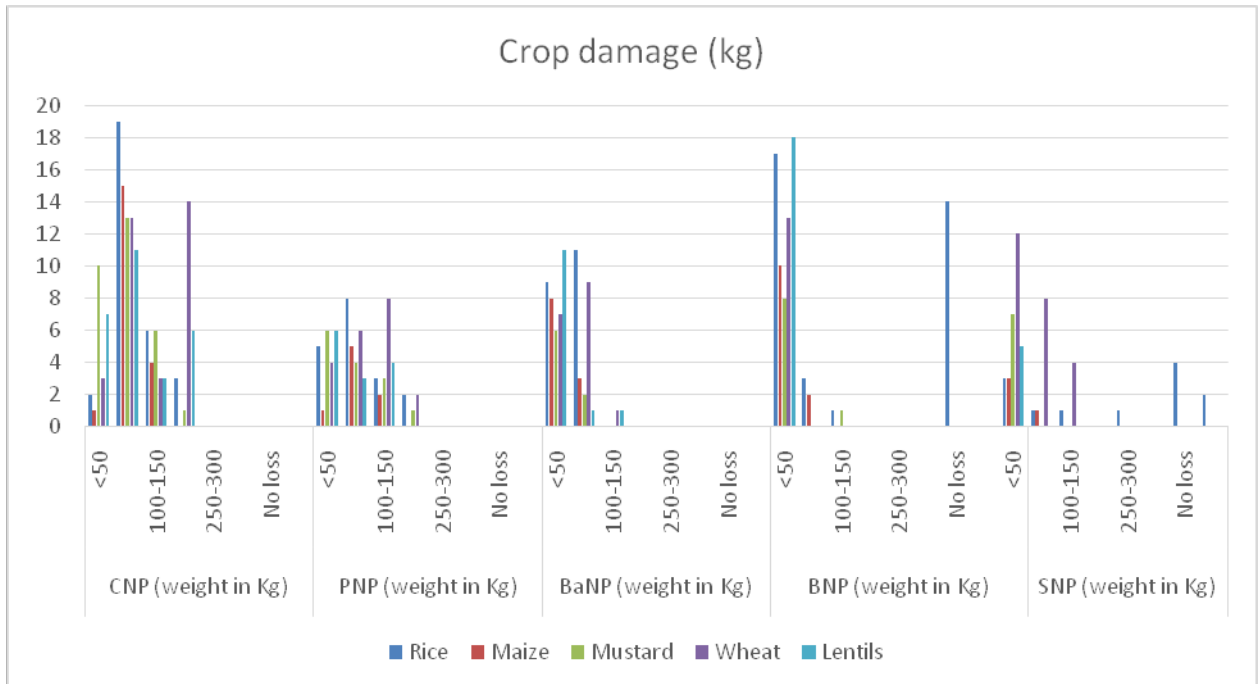
Fig: Graph showing the quantity of different crop species loss by Blue bull at different NPs.

Based on graph Blue bull seems more destructive at CNP and PNP and less at SNP.

Compensation
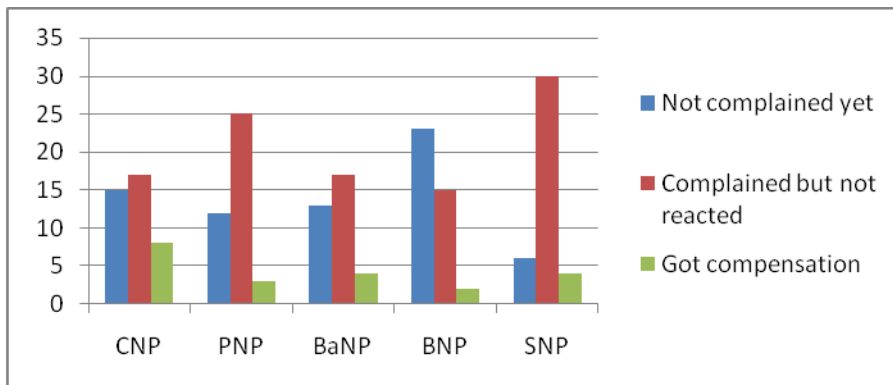
Fig: Showing the status of compensation

Compensation is not effective at all NPs. Inquiring with park staff the process of compensation is lengthy so many people does not use to follow the process. There are many cases of human causality by the tiger, rhinos, elephants and by other wild animals.

Potential threats:

The main potential threat for animal is habitat degradation, fire, livestock pressure, flooding etc. Disease (foot and mouth), illegal encroachment to Blue bull habitat and poaching are also common.

Opinion
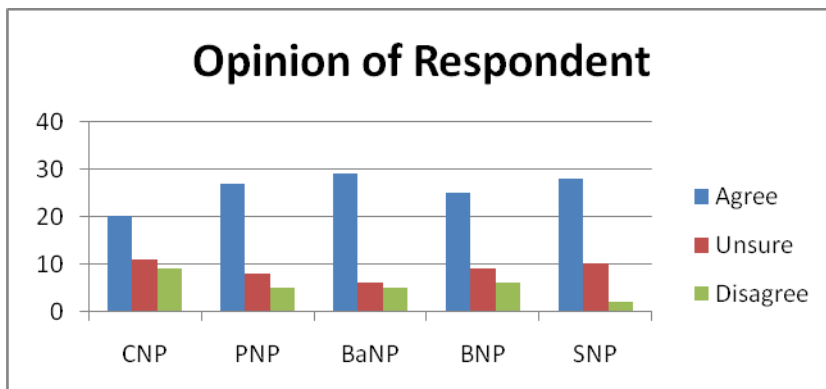
Fig: opinion of respondants towards conservation of Blue bull

The negative opinion about the blue bull is probably due to the loss of crops by the animal. They do not care about conserving this species because they simply do not know how rare and important ungulate is it. But the re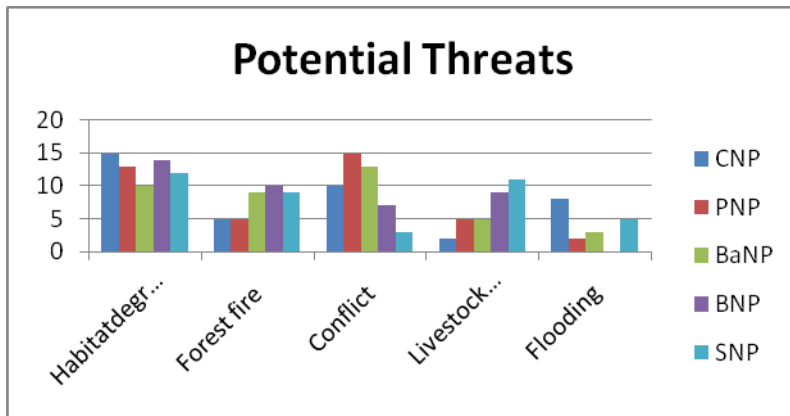latively high positive attitude of the local farmers towards the animal could possibly be due to awareness about the importance of wildlife and some other opportunities in tourism related business.

Awareness Importance:

Since blue bull prefers semi open habitats near the agricultural fields there always remains some degree of conflict between blue bull and local people because of crop depredation. The most serious impact on the local people is caused by the prohibition of resource use in the park. Basic needs like fuel wood, fodder, timber, grazing and collection of vegetables, fruits, fishes are also forbidden which were the traditional practices of the Tharus. People are

penalised and harassed by the park management if found violating the rules. This creates a conflict between the park and local people. Modern agricultural techniques, biodiversity in crop, bio fencing should be provided to local people to enable them to overcome the crop loss by increasing productivity. Moreover income generating programmes can be conducted to combat the economic loss due to crop depredation. The hunting is not allowed, no action has been adopted towards the management and protection of this species. Clear cut decision about the status of blue bull inside the protected areas and specific plans and policies for the management of this species are essential.

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

This project is mainly focused on animal-human conflict issues hence in each step of project the local people were involved in different ways. Focus group discussion was conducted in each study site. Similarly for questionnaire survey local people were trained and they get involved by which they were aware about the importance of the conservation as well as they were economically benefitted. We were discussed local participants and we incorporated their view, ideas and experience. The most important thing is discussion is mainly conducted with women group because women were mostly involved with the agricultural and conflict issues. Through brochure presentation people are much aware about the importance of wild animals and we tried to aware wildlife is crucial for the survival of humans. Similarly involvement of the student make sure positive attitude towards the wild population. The brochure distribution was found highly effective to create awareness on blue bull and its ecology. Though the blue bull is main crop raider but people were found cooperative and kind towards wild animal conservation.

5. Are there any plans to continue this work?

Though blue bull is important ungulate and preferred prey of tiger it still lacks detailed information on its ecology. Because of its crop raiding nature it creates conflict at local level. I attempted basic level of conflict survey as well as its habitat in five protected areas of TAL located in Nepal which shows a serious conflict and indicates negative impact to the animal population. Another fact is compensation provided by government was very low and lengthy so it might be serious issue in the future. Now it is urgent to address it at policy level. Another step will be to study its migrating nature at adjoining areas like Dudhawa National Park of India and importance of regional and landscape level conservation of the animal.

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

The report will be shared with the related organisation of Nepal (DNPWC). The result of the study will be published in international journals. Similarly the findings will be presented in relevant seminar and conference.

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

Activities	Proposed schedule (Time in month)	Actual time it took (in month) Revision in time schedule
Literature review, questionnaire preparation and desk review	June 2017	July 2017
Preliminary filed visit and interaction with local communities and park authorities	July 2017	Aug 2017
Habitat assessment and GIS mapping.	Aug 2017	Oct- Nov 2017
Brochure, poster designing, production and distribution.	Nov	Jan 2018
Household survey, focus group discussion with local communities and park authorities	Dec 2017- Feb 2018	March –May 2018
Overall review of works	Feb- March 2018	June-July 2018
Report writing and submission.	May 2018	Aug 2018

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
Travel cost	400	425	-25	
Feeding cost	900	900	0	
Lodge cost	600	575	+25	
Research Assistant	600	600	0	
Local Assistant	300	300	0	
Material and equipment-GPS/maps/images	200	200	0	
Communication and stationeries	100	100	0	
Ecological data collection	600	600	0	
Poster and leaflet publication and distribution	150	150	0	
FM discussion and interaction	300	250	+50	
Interaction with local communities	300	300	0	
GIS map development	400	400	0	
Report production	150	150	0	
Miscellaneous	0	25	-25	
Total	5000	5025	25	

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

Though blue bull is important ungulate species as well as the prey of tiger its conservation is not given importance even in the protected areas. The level of conflict is also higher in the tarai area adjoining with the protected areas. Poaching is also done by ethnic Tharu people of tarai region. This study had explored the nature and level of conflict in the TAL area. Now the more specific studies regarding its ecological importance, trans-boundary movement as well as conservation are necessary.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did The Rufford Foundation receive any publicity during the course of your work?

Yes I used the logo of Rufford Foundation in brochure and other activities which is conducted under this project. We have acknowledged RF in interaction and group discussion programme. The RF would be acknowledged in the article which will be published in international journal.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Team of the project:

Kalpana Bisht - Project leader (Field visit, involved in interaction programmes, data analysis and report preparation)

Dev Raj Joshi (Works at Suklaphanta National Park) - Data collection

Surendra Chaudhary (Works at Bardia National Park) - Data Collection

Mohan Aryal - Questionnaire survey

Aman Dangaura (Programme Officer at Community Based forestry Supporter Network Nepal) - GIS map preparation

12. Any other comments?

In lowland of Nepal there is higher level of conflict between the blue bull and humans. The result of conflict is snaring of animal to reduce the crop damage to poaching of animal. During this study I got information on blue bull and then visited to Lumbini garden the birth place of Lord Buddha. This place is protected under Lumbini Development Trust (LDT) and it is under the World Heritage Site. Due to habitat destruction a few blue bulls taken refuse in the garden and due to suitable habitat and absence of natural predator the population inside the garden has flourished. Lumbini garden has provided an excellent habitat for blue bull. The animal is found close to farmland and there always exist some degree of conflict between the animal and local farmers. The LDT has not developed any vision

towards the conservation and management of this species in Lumbini garden. If the population is managed as it is handsome Asian antelope it will increase the tourism activity in this area. The project team thus expects support from RF for detail ecological survey at TAL and more research at Lumbini garden on blue bull.