

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	Tariku Mekonnen Gutema
Project title	Behavioral Ecology of the African Wolf and its Potential Effect on the Survival of the Endangered Ethiopian Wolf in the Ethiopian Highlands
RSG reference	19197-2
Reporting period	31/03/16 to 31/03/17
Amount of grant	£4,980
Your email address	jtarikumg@gmail.com
Date of this report	31/03/17

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
1. To examine spatial ecology of African wolves				Seven African wolf individuals were collared in Borena-Saynt National Park (BSNP) in north-central Ethiopia tracked for almost a year now. With GPS data from already collected from other seven African wolf individuals in the Guassa mountains (also in the central highlands about 200 km distance from BSNP), I am working on home range and habitat use of the African wolf.
2. To examine the feeding behavior & diet of African wolves				Based on the focal watch on collared African wolf individuals and 350 faecal sample analyses, I have studied the diet and foraging ecology of the African wolf. Following this study, because I found out rodent is an important source of food for the African wolf, I also studied the rodent abundance and seasonal changes in rodent abundance.
4. To examine the breeding ecology and social organization of African wolf.				On my daily tracking of the African wolf, I also studied breeding season, number of puppies and their survival and den site selection was studied. March and April are the main reproductions time of African wolves where an individual Africa wolf give birth of two to five puppies. I found out that the main threat for the survival of puppies is human persecution mainly by blocking the den sites with stones.
5. To study the spatial use of Ethiopian wolf from transect and study the nature of interaction between African wolf and Ethiopian wolf (Neutral ,				I studied the Ethiopian wolf sightings from transect sampling and record any interaction between the Ethiopian and African wolf during my study period.

aggressive , if aggressive which dominate the interaction				
To determine the extent of competition between the African wolf and Ethiopian wolf				Combining the data of foraging ecology and diet of the African wolf (diet of Ethiopian wolf is studied extensively and it is confirmed that rodent is the main diet of the species), habitat use overlap and nature of the interaction between the two, I examine the potential competition between the African wolf and Ethiopian wolf.

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

One difficult issue on my study of tracking of the African wolf as planned on daily bases and record their GPS coordinates. First, they cross rugged terrain which is by far difficult to climb by myself and my field assistants. Second, due to the topography, my hand held antenna tells me that the wolves are far from my location while they remain only 200 m under deep gorge or under rock. This was in particular tough job during the nocturnal tracking. These challenges were tough to avoid though out my study, but did all my best to get good quality of data despite the challenges.

The second was to keep the puppies of my study group alive. The local shepherds angry with the livestock predation of the African wolf were more than willing block the den sites of the puppies while mother is out for food. I spent a considerable time and effort in unblocking the den sites. These leads 10 puppies survive and double the population size of the group in my two years of study. I now realise that this is in fact problem for the Ethiopian wolf, world rarest canid living in sympatric with the African wolf.

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

a) Interference and exploitative Competition between the two sympatric wolves

I have documented a high potential competition between Ethiopian wolf and African wolf both on their diet and interference competition (aggressive interaction in all observed circumstances). The latter, the interference competition is in particular important. Given that the number of the African wolf is larger, they effectively can chase the African wolf from its small range with high rodent abundance. Once I started the project two years back, and effectively stopped the persecution of African wolf puppies, their number doubles. Following this, one African wolf group moved to the centre of the African wolf range and war continued between the two groups. So far I recorded 82 interactions all aggressive and dominated by one of the two species mainly depending on the group size.

The African wolf displaces the Ethiopian wolf for about 5 month's duration and 2 months ago the Ethiopian wolf reclaims its territory. I am still closely following the interaction. African wolf feed primarily on rodents which is clear indication for the exploitative competition between the two species.

Details will be followed on the detailed report.

b) Conservation threat of African wolf

We found that the most important threat for the survival of the African wolf is persecution by humans as a result of conflict over livestock predation by African wolf. Local people attempt to keep the African wolf population by killing puppies by blocking the den site to keep the number of African wolf as low as possible to protect their livestock from predation.

c) Ecosystem service of African wolves

Even if African wolf predate on livestock, they also have a positive side. African wolf contributed to the local community economy by playing an important role in eliminating rodents from their barley crop. From September to October, the African wolf spends considerable time in agricultural an area which is welcomed by the local farmers as an important rodent pest management. African wolf also collect rodents killed by traps in the farm land and hence keep the environment clean.

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

With this study, four field assistants from the local community was hired though our project period and four others worked on per diem base. While this may not contribute for large economic benefits, its contribution on the impression of intensives from wildlife and the experience gained by the local field assistants has long term advantage for conservation. This also give an opportunity for myself and my colleagues working in this project to have a better understanding with the local community and currently working together to have some projects that may benefit the local community.

5. Are there any plans to continue this work?

Yes, I have an ambitus plans to extend the project. The top priority in my list is to study the impacts of the African wolf on the survival of the endangered Ethiopian wolf. The reason for the extermination of some of the Ethiopian wolf populations including those in the Chocke Mountains remains unknown. This time, those areas are dominated by the African wolf. Would that be possible that the African wolf indeed exterminate the Ethiopian wolf in these regions? In the Arsi Mountains, there is an ad hoc observation by the group I am working with that the Ethiopian wolf range shifts depending on the range of the African wolf. An areas which was formerly occupied by African wolf was taken by the Ethiopian wolf once the African wolf were persecuted by the local for livestock predation.

In the Bale Mountains, there is occasion that rabies killed 18 individuals from a total of 19 in two groups living side by side. It may be wise to translocate few individuals to the historical sites like choke mountains where rabies is rarely reported. Such areas are currently occupied by the African wolf, and needs much depth study on the interaction of the two species.

My future study is thus will focus on the interaction of the African wolf and Ethiopian wolf, and potential areas for re-introduction of the Ethiopian wolf in their historical sites.

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

I have submitted one paper,
 Gutema T.M., Atickem A., Birru A.L., Bekele A., Sillero-zubiri C., Zinner D., Farstad W. K., Arnemo J. M., and Stenseth N.C. (submitted). Capture and Immobilization of African wolves in Ethiopian Highlands. Wildlife disease and working on two manuscripts, the first on the African wolf-Ethiopian competition and second on the home range and habitat use of African wolf.

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 grant was used as planned the beginning of the project. I spend a considerable amount of the grant during the collaring period for renting vehicle, and payments for large groups involved in the capturing process including veterinarian and expert in handling carnivores. Once the collar was set, the cost was mainly for the per diem of the field assistants tracking the wolves.

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
Per diem for four field assistants: £ 3360 (4 assistants x 14 days/month x £5 /day x12 months)	3920	3920	00	
Transportation (during collaring= £109.32 per day for 12 days, during one year tracking= £192 to transport food and others= £16 per trip)	250	560	310	
Per diem for principal investigator £10 per day (14 days per month for six months)	550	550	00	
Batteries for GPS and torch , Kerosene for cooking food, Stationary materials, and Receiver),	260	260	0	

Stationeries = £30				
Total	4980	5290	310£	
4980£ (142223.99 ETB)				
5290£ (151077.29 ETB)				
310£ (8687.71ETB)				

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

It looks to me that the African wolf is unseen threat for the survival of the endangered Ethiopian wolf and it is possible that, the African wolf contributed to the decline of Ethiopian wolf in the northern part of the Ethiopian highlands. These pretty depend on the numbers. Ethiopian wolf have an advantage on higher body mass to win the battle, but the group size also matters. With higher group size, the Ethiopian wolf effectively defends their territory. However, when they have less in number, the African wolf can easily chase them from their rodent rich habitat.

More close study on the interaction of these species is needed in the future. Second, larger habitat protection is needed to accommodate the two species and other wildlife species of the Ethiopian highland.

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?

I am just finished the field and start writing my findings. I am sure this will be of interest of large number of audience both from the scientific community and public and I will use Rufford Foundation logo in my presentations and published materials.

11. Any other comments?

I would like to thank The Rufford Foundation for recognising the importance of this project in providing a second grant.

