

Project Update: May 2020

Project Summary

Menelik's bushbuck (*Tragelaphus scriptus meneliki*) is endemic subspecies considered as a montane form of spiral horned antelope of Africa occupying a limited and disjunct range in mountainous forest and has not been the subject of research studies in Ethiopia. As a result, little is known about the habitat requirements, conservation status, behavior, and ecology of this elusive ungulate. Anthropogenic impacts on this species and livelihood problems facing the locals have not yet been discovered. We aim to provide data on the distribution, population size of Menelik's bush buck and livelihood problems of local people at Wof- Washa Natural State Forest, Ethiopia.

Project Description

Human population growth and development lead to the appropriation of extensive area of land for settlement, agriculture, resource extraction and infrastructure to support these activities, which in turn are responsible for wildlife habitat loss and fragmentation. As habitat is fragmented, the length of edge for the interface between humans and wildlife increases, while the animal populations become compressed in limited refuges that magnify vulnerability of large mammals to poaching. Therefore, the idea of integration of wildlife conservation areas into local rural economics is crucial for sustainable conservation of wildlife population in the wilderness. At the same time, the proper management of protected areas can offer sustainable benefit to the local communities, playing a central role in social and economic development of rural environment. As a result, this research seeks to investigate the population size, distribution and threats of the wildlife population focusing on the endemic Menelik's bushbuck. The project also aspires to contribute to the involvement of the local community, natural resource experts, district and county officials to ensure the long-term conservation action plan of the wildlife population based on sound ecological and socio-economic knowledge.

General objective of the Project

The general objective of the project is to provide data on the distribution and population size of Menelik's bush buck and livelihood problems of local people at Wof-Washa Natural State Forest, Ethiopia.

Specific objectives of the project

- I) To estimate the population size and distribution of Menelik's bushbuck.
- II) To determine causes of human-wildlife conflict and its impact on biodiversity conservation and human livelihoods.
- III) To assess the amount of economic loss due to crop raiding.
- IV) To develop a multimetric wildlife-based index of ecological, social and economic integrity tool.

Project Site

The study on human Wildlife conflict and biodiversity conservation will be conducted in Wof Washa Natural State Forest, which is located in North Shoa Zonal, Amhara Regional State, central highlands of Ethiopia. The escarpment forms part of the catchment of the

Awash River system which drains into the Danakil Plains in the northern section of the Rift Valley. It extends approximately between 9°42'- 9°47' N latitude and 39 ° 43'- 39 ° 49'E longitudes.

Project methodology

Preliminary survey: During the reconnaissance survey, habitat types were identified based on the dominant vegetation cover and the habitat occupancy of bush buck has also been identified for population estimate and distribution data collection purpose. Field assistants were trained on the identifications of bush buck pellets based on the size, shape and colour to distinguish it from other sympatric species.

Vegetation survey: To collect ecological data, transects are to be laid systematically in mixed plantation forest, natural forest and Erica bushland. Along each transect line, quadrats having a size of 20 X 50 m (1000 m²) will be laid following the homogeneity of vegetation and various conditions encountered in the vegetation under investigation (Muller-Dombois and Ellenberg, 1974). Varied number of systematic random points will be selected and assigned to Modified-Whittaker plots depending on the size of each habitat type. The plot will contain non-overlapping 10 1 m² sub plots, two 10 m² (2 x 5 m) subplots, and one 100 m² (10 x 10 m) subplot, all nested within the 1000 m² (20 X 50 m) plot (Stohlgren et al., 1995; Barnett and Stohlgren, 2003). Plant specimens will be collected, pressed, dried and taken to Addis Ababa University National Herbarium for taxonomic identification.

Identification and quantification of threats: In order to assess the threats of conservation to Menelik's bush buck and other wildlife, questionnaire interviews were administered to selected key informants from the local communities. Questionnaires were administered for 60 households out of the total 250 households proposed to be incorporated in the questionnaire survey.

Distribution and population estimate: Extensive ground surveys were conducted accompanied by questionnaire survey using informal interviews of local informed people from villages familiar with and resides surrounding the habitats of Menelik's bush buck. Whenever the animal is encountered, time of observation, GPS location, habitat type in which the animal observed have been recorded recorded.

Once line transects established in each habitat types at regular intervals (Krebs, 1989; Atickem et al., 2013; Girma et al., 2018), 55 points were randomly selected (25 from natural forest and 15 from each mixed plantation and Erica wood land), three points per transect for mixed plantation forest and Erica woodland and five points per transect for natural forest. On each point a 4 x 5 m rectangle were censused for presence of Menelik's bush buck scats (pellets) and the number of scat groups have been counted. Both Menelik's bush buck and cattle scats were distinguished from droppings of other sympatric herbivores by their size, colour and shape (Atickem et al., 2011; Atickem et al., 2013).



Left: Female Menelik's bush buck at feeding. Right: Male Menelik's Bush buck feeding on *Pittosporum viridiflorum*.



Left: Researcher with field assistants during pellet counting. Right: Died body of Grivet monkey hanged and dried at border of crop land to be used as scarecrow.



Left: Skin of male Menelik bush buck hanged on the wall of local people home, once they used the flesh for easter holiday in 2020. Right: Trained field assistants counting pellets in 4*5 plot.



Left: Local people moving out of the forest with their livestock and each carrying timber. Right: Grivet monkey feeding on barely snatched from cropland.