Project Update: July 2023

A. Project summary

The Omo River guereza (*Colobus guereza guereza*) is one of iconic endemic species/subspecies of primates in Ethiopia patchily distributed to western Rift Valley forests of the country and has become the subject of research studies very recently. Thus, its ecology and conservation status are poorly known and information available on this subspecies is very patchy making it amongst the least studied primates in Africa. A remarkable decline has also been observed in distribution and abundance of this subspecies due to habitat degradation. Thus, this study aims to provide data on the distribution, population status, conservation threats, and creates community awareness.

B. Project Description

Ethiopia is among the world leaders in terms of richness and endemism of mammalian species despite the effort made to their conservation in natural habitats is questionable due to high pressure of human interference and low educational awareness of local communities. Despite the country is home to two endemic subspecies of guereza (*Colobus guereza guereza* and *C. g. gallaru*), both subspecies have experienced intensive habitat loss in recent decades. Moreover, the range of *C. g. guereza* is poorly defined because of a lack of field surveys as well as uncertainties about the taxonomy of *Colobus guereza* in Ethiopia, where two endemic subspecies exist. Omo River guereza (*Colobus guereza guereza*) is one of the eight subspecies of eastern black and white colobus monkeys and endemic to the western Rift Valley forests of Ethiopia. Though most other subspecies of colobus monkeys have been studied previously, no long-term studies of population change have been conducted on this subspecies. The main threats to the survival of Omo River guereza in Ethiopia are also associated with habitat loss and forest clearance for agriculture, livestock grazing, building materials, fuel wood and urban expansion that have been widespread across the northern highlands of Ethiopia. Given habitat loss and degradation currently increasing across its geographic range in Ethiopia, data on the current conservation status and distribution of Omo River guerezas are very patchy. Therefore, the main intent of this project is to provide detailed data on the population size, distribution and threats to the conservation of guerezas in Ethiopia to ensure its long-term survival.

a) General objective of the Project

The general objective of the project is to scale up the conservation of Omo River guereza (*Colobus guereza guereza*) in "dense" forest, Ankober District of North Shewa Zone, Ethiopia

b) Specific objectives of the project are:

1) To estimate the population size and density of Omo River guerezas in "dense" forest.
2) To determine the distribution patterns of Omo River guerezas.
3) To assess the main threats to the conservation of Omo River guerezas.
4) To enhance public awareness of the population ecology and conservation threats of Omo River guerezas.

c. Project site

The study on Scaling up the conservation of Omo River guerezas (*Colobus guereza guereza*) will be conducted in "dense" forest located in Ankober District, North Shewa Zone of Amhara Regional State, central highlands of Ethiopia. The district is perched on the eastern escarpment of the Ethiopian highlands and located 172 km away from Addis Ababa, between $9^0$34'-$9^0$41'N and $39^0$41'-$39^0$46'E. Concerning topography, the district is situated along the altitudinal gradient between 1,300 and 3,700 m asl. The district is home to the "dense" forest (current study area) and Likmarefia forest including parts of the Wof-Washa Natural State Forest. The "dense" forest is located between $9^0$34'-$9^0$41'N and $39^0$41'-$39^0$46'E, and is the largest natural forest in Ankober District, which covers approximately 625 ha. The vegetation of the "dense" forest is classified as dry evergreen Afromontane Forest and grassland complex category.

d. Project methodology

i) **Preliminary survey:** During the reconnaissance survey, habitat types were identified based on the dominant vegetation cover and altitudinal ranges, and distribution mapping of Omo River guereza have been conducted from March to April 2023. The habitat types are natural forest, mixed plantation forest and ericaceous shrubs. During the reconnaissance survey, line transects were laid out for censusing the population of guerezas and villages have been identified for questionnaire survey.

ii) **Population estimate:** Population census of Omo River guerezas have been conducted in "dense" forest once per month from May 2022 to April 2023 using line transects method (Struhsaker 1981; Peres 1999). Survey sites were selected to cover suitable altitudinal ranges and vegetation types of the area. Transects were established based on a stratified random sampling approach within different habitat types and marked every 50 m interval using permanent natural signpost (Peres 1999; Plumptre 2000). A total of 12 transects have been censused in the three different habitat types. Each transect will be censused 12 times duration once per month as indicated above. Surveys have been conducted from 06:30-10:45 hrs in the morning and from 14:00-17:00 hrs in the afternoon so as to coincide with the activity periods of the animals (Peres 1999; Chagas and Ferrari 2011; Mekonnen et al. 2020; Yazezew et al. 2022). Transects have been walked at an average speed of 1 km/hr.

iii) **Distribution survey:** Distribution mapping surveys have been conducted in habitats suitable for the Omo River guerezas around potential sites. Surveys have been conducted through an extensive ground survey supplemented by questionnaire surveys using informal interviews of local people from villages near and familiar with "dense" forest (De Jong et al., 2008; Gonedelé Bi et al., 2010) by showing photographs of guerezas (either from hard paper or t-shirt). During distribution survey, I recorded time of observation (time, date and season), GPS location, and habitat type in which guerezas inhabit when guerezas encountered. I have observed and recorded four primate species in and around the study area (Fig. 1 A-D)

Figure 1. Primate species in and around the study area A) *Colobus guereza*, B0 *Theropithecus gelada*, C) *Cercopithecus aethiopes* and D) *Papio hamadryas*

iv) **Community awareness creation workshop:** Awareness creation workshops will be vastly launched to selected participants from the forest surrounding communities and various stakeholders on the conservation of Omo River guerezas and their habitats as well as other wildlife therein. To make this fruitful, t-shirts (for PI and field assistants) and posters with the logo of The Rufford Foundation and Omo River guerezas have been already produced and used, and tea and coffee programme will be used in the workshop to create awareness to the participants and to the wider public sphere. Information about "dense" forest and guerezas will be disseminated by Debre Birhan fana FM 94.0 in an informative way. Questionnaire interviews will be conducted with the selected village community groups and stakeholders on the conservation challenges of Omo River guereza and "dense" forest. Recently, a new road had been constructed that crossed through and fragmented the forest (Fig. 2A-E). Therefore, discussion will be conducted with the local communities and concerned local and district administration bodies on the advantages and disadvantages of the road on the future destiny of the forest and the wildlife living there including nonhuman primates as well as on the legal procedures how vehicles get in and out of the forest including the timing.

Figure 2. Road and its impact on dense forest A) local communities maintaining the road for rainy season access B-F) impact of the road on the dense forest fragmentation.


Scenery of the landscape of the study area.

Group of Omo River guerezas (Colobus geuereza guereza).

Researcher during data collection.

Historic caved house inside the dense forest.

Dead Omo River guereza at the top branch of a tree.

Field trip with undergraduate biology students on wildlife ecology and management.

Hamdryas baboon (Papio hamadryas).

Field guide at the forest lodge.