

Primate Abundance, Distribution and Conservation Threat Assessment in the Awi Zone, Northwestern Ethiopia

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Background

Currently, there has been a catastrophic decrease in global biodiversity (Koh et al., 2004). Similarly, the world's primates are declining across large parts of their ranges and are facing a global extinction crisis (Cotton et al., 2016; Wich and Marshall, 2016). The IUCN assessment of primates reveals that 65% of all species are currently classified as threatened with extinction, and 15% of them are Critically Endangered (IUCN, 2020). Threats to their survival include habitat loss and fragmentation resulting from agricultural conversion (Wich et al., 2014), the increase in human populations that exert pressure on the remaining primate habitat (Haddad et al., 2015; Irwin, 2016) and the hunting of primates for food and the pet trade (Rosen and Smith, 2010).

Habitat fragmentation and disturbance affect primate diversity, group size and composition and population density, and threaten their survival (Clarke et al., 2002; Marsh et al., 2016). In addition, crop damage caused by primates is one of the most common causes of human-primate conflicts in areas where the local farmers live at subsistence level (Peterson et al., 2010; Priston et al., 2012). When habitat degradation and alternation of land intensifies, primates incorporate more crops into their diet (Hill, 2017). For many primates that have lost their preferred habitats and live in small patchy habitats, feeding on cereal crops is a good strategy to increase their foraging efficiency (Naughton-Treves, 1998). In addition, some primates hurt the livelihood of local farmers through predation on small livestock. Such small livestock predation and crop raiding behaviors put primates in danger of extirpation in areas where conflict with local farmers reaches high levels (McLennan, 2008; Hardwick et al., 2017). In particular, primates that live outside protected areas are more exposed to conflict with local farmers, and are more prone to injuries and retaliation killing (Strum, 2010). Such a high level of conflict between local farmers and primates presents severe threats and challenges to their long-term conservation (Hill, 2017).

In Ethiopia, about 80% live in rural areas and are almost completely dependent on subsistence farming for their daily livelihoods. Primates in Ethiopia are vulnerable to future decline throughout their ranges due to their proximity of habitats to human settlement and farmland areas. Currently, many primate species in Ethiopia exist in small, isolated forest fragments surrounded by agriculture, and live in suboptimal habitats of hostile matrices as the result of habitat loss, and are highly vulnerable to risk of local extinction.

A large number of Ethiopian primates are almost certainly highly threatened, yet, there is a lack of vital information on their diversity, abundance, distribution and threats to them in many parts of the country. Specifically, least is known on primate diversity, abundance, distribution pattern and their current threats in the Awi Zone of northwestern Ethiopia. So far, there are no prior conservation actions aimed at the conservation of primates and other wildlife living in this region. Therefore, the purpose of this project was to collect primate population data and identify the nature of the threats to their survival. Collecting basic information on the abundance and distribution of primate populations as well as threats to their survival are crucial to address future conservation actions and to set priority areas for primate conservation in northwestern Ethiopia. In addition, the purpose of project is to integrate the primate diversity and distribution of the region into the Ethiopian Wildlife and Conservation Authority (EWCA) and IUCN databases.

Objectives

The main objectives of the project were to determine the diversity of primate species and their population abundance as well as to map their distribution patterns in the Awi Zone. In addition, the project was also aimed to assess the current threats to the survival of each primate species and their habitats occurring in the region as well as to identify potential suitable habitats for future conservation and research activities.

The study area

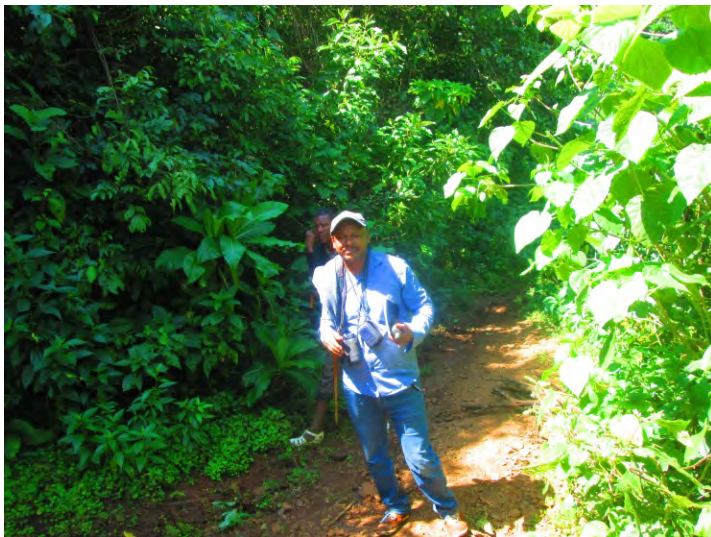
The study was conducted in the Awi Zone, northwestern Ethiopia. The geographical location of Awi Zone lies between latitudes 10°40' N - 11° 20' N and longitudes 36°25' E - 37°10' E. The elevations of the area vary from 1,800 to 3,100 m above sea level. The landscape of the area is composed of agricultural and livestock grazing areas, human settlements, different rivers, hills and small to medium sized mountains. The region comprises different sizes of forest patches, wetlands, grassland areas and lakes with different species of animal and plant species.

Method

Populations data were collected using line transect sampling. For each primate group encountered along transects, I recorded the species, the approximate group size and the group's geographic location. In addition, threats to primates were collected along transect lines and personal observations.

Results

I recorded four primate species in the region. I made a total of 70 field visits to 23 different forest patches of different sizes to survey primate species in the region.



Zewdu Kifle in his field site

I obtained a total of four primate species with different encounter rates in the region. These species were Boutourlini's blue monkey (*Cercopithecus mitis boutourlinii*), black-and-white colobus monkeys (*Colobus guereza*), grivet monkey (*Chlorocebus aethiops*) and olive baboons (*Papio anubis*). Out of the four species encountered, Boutourlini's blue

monkey is classified as Vulnerable on the IUCN (2021)

Red List of Threatened Species while the other three species are classified as Least Concern.

Boutourlini's blue monkey and black-and-white colobus monkeys are endemic to Ethiopia.

Among those primate species, black-and-white colobus monkeys were the most frequently observed in the region. I recorded black-and-white colobus monkeys in almost all of the forest patches of the region.

Challenges

Threats to the primate habitats (forests) were anthropogenic activities. Though most of the surveyed forest patches are protected by the local district government, there is yet no strict conservation effort to protect the forest from degradation and decline. Almost all of the forest

patches are free for livestock grazing and firewood collection. Consequently, the forest's rich resources have been greatly encroached, depleted and heavily degraded through illegal logging resulting in the loss of the original forest sizes and plant diversity.

Achievements

This survey successfully collected data on the abundance and distribution of primate species in the Awi Zone, Northwestern Ethiopia. The project also documented the threats to primates and their habitats in the region.

The survey laid the foundation for other scientific surveys as well as for the long-term conservation support and activities in the region.

Conclusion

As recommendation, conservation activities should be implemented to conserve these interesting forest patches. These forest patches provide their own role to solve current global climate change problems.

Acknowledgement

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