

Project Update: May 2022

Summary

Bats are essential in maintaining ecological processes and providing valuable services for human health and well-being (Kunz et al., 2011). The Harrison's giant mastiff bat (*Otomops harrisoni*) is currently listed as Vulnerable on the IUCN Red List and therefore requires maximum protection. It meets the criteria for this designation because there have been extreme population declines located at two of its roosts (Mount Suswa and Ithundu Caves). The globally Vulnerable Harrison's giant mastiff bat is found in the volcanic cave roosts of Mt Suswa Conservancy, Kenya (1° 10.37'S, 36° 20.85'E). Crucial maternity colonies are endangered by expanding ecotourism and human disturbance in the forests (Jones et al., 2009; Sherwin et al., 2013). This project seeks to establish how bats use the caves to improve the management of the cave systems while promoting sustainable ecotourism and roost protection. We engage communities to promote the protection and restoration of local forests as foraging habitats for bats and for climate change mitigation through training and education awareness programmes.



Objectives

This project, in partnership with the Mt Suswa Conservancy and the Angaza Vijiji community based organization: a) documented major threats that the Harrison's giant mastiff bat and their roosting caves face - these will be used to assess how land-use changes are affecting these natural habitats and advise on how to mitigate any potential negative effects, b) established how bats use the Mount Suswa caves, the surrounding foraging habitats and their population status to improve management

of the cave systems while promoting sustainable ecotourism and roost protection, c) engaged communities in tree planting exercises to promote and catalyse protection and restoration of local forests as foraging habitat for bats, other economically and ecologically important species, and for climate change mitigation, and d) educated local farmers and pastoralists on roost conservation, monitoring protocols, capitalising on cooperative relationships to protect key roosts.

Project site

The Mt Suswa Conservancy (1° 10.37'S, 36° 20.85'E) is an indigenous community organisation that manages over 5000 ha. The conservancy is a popular tourist destination and a hotspot for bats and other biodiversity. Mt Suswa is a spectacular mountain with a unique 12 km² double crater system in Kenya's Rift Valley. The lower slope of the mountain is endowed with the montane forest habitat and cave roosts for bats and other wildlife. More than 10,000 safari visitors come for hiking, camping, wildlife viewing and cave exploration annually. The conservancy is however increasingly affected by ever-increasing spiral of forest loss and habitat degradation resulting from human appropriation of land for agricultural expansion, settlement and cattle grazing and, uncontrolled visitation to the bat caves. Over time, the effect of habitat degradation could be deleterious to the survival bats and other wildlife.

The activities undertaken thus far

(a) Data collection involved recording echolocation calls, using SM4 bat detectors (Wildlife Acoustics, Inc., Massachusetts, USA) near caves and the surrounding habitats in the conservancy (Fig. 1)



Figure 1. Recording echolocation pulses for bat species in the field

(b) Identified and documented human activities near and within conservancy such as the proximity of human settlement to natural habitats, charcoal burning (Fig. 2), forest clearance (Fig. 3), tourism (Fig. 4) and religious activities in caves.



Figure 2. Burning of charcoal within Mount Suswa Conservancy



Figure 3. Clearance of vegetation to create room for agricultural production



Figure 4. Tourists visiting the Mount Suswa Caves

(c) Awareness was carried out through consultative meetings, printed information as posters, and t-shirts, based on the research findings to demystify folklores about bats and to highlight their importance in ecosystems (Fig. 5).



Figure 5. Consultative meeting with the local community members to carry out a community awareness programme.

d) Next steps

- A tree planting exercise will be conducted in different sites within and adjoining areas of the conservancy.
- To identify and document more human activities near and within the conservancy.
- Carry out other awareness campaign meetings in schools.
- Repair nature trails to the bat caves within the conservancy.