Strategies to Prevent (STOP) Spillover

Impact Brief

Uganda

Phase 2 Evaluation of the Community-based bat monitoring program in Bundibugyo District, Uganda

Activity 2.2.2.2: Develop and evaluate a community-based bat-human interface monitoring program for zoonotic spillover early warning and response.

INTRODUCTION

Since 2000, Uganda has documented a total of six Ebola outbreaks involving the districts of Gulu (2000), Bundibugyo (2007), Luwero (2011 & 2012), Kibaale (2012), Luwero (2012), and Mubende and Kasanda (2022). Zoonotic spillover has been associated with activities that increase human-bat contact [Nyakarahuka, et al. 2020]. Likely bat-human interface areas include caves and mines with roosting cave-dwelling bats (especially R. aegyptiacus); human dwellings for tree-dwelling insectivorous bats [Gire, et al. 2014], and bat hunting, processing, and consumption. Within Bundibugyo district, a community-based bat-human interface monitoring program was established to both improve understanding of the risk factors for potential spillover and to develop interventions to reduce human exposure to bats, which would reduce spillover risk.

Photos courtesy of STOPS Uganda team

Outcomes

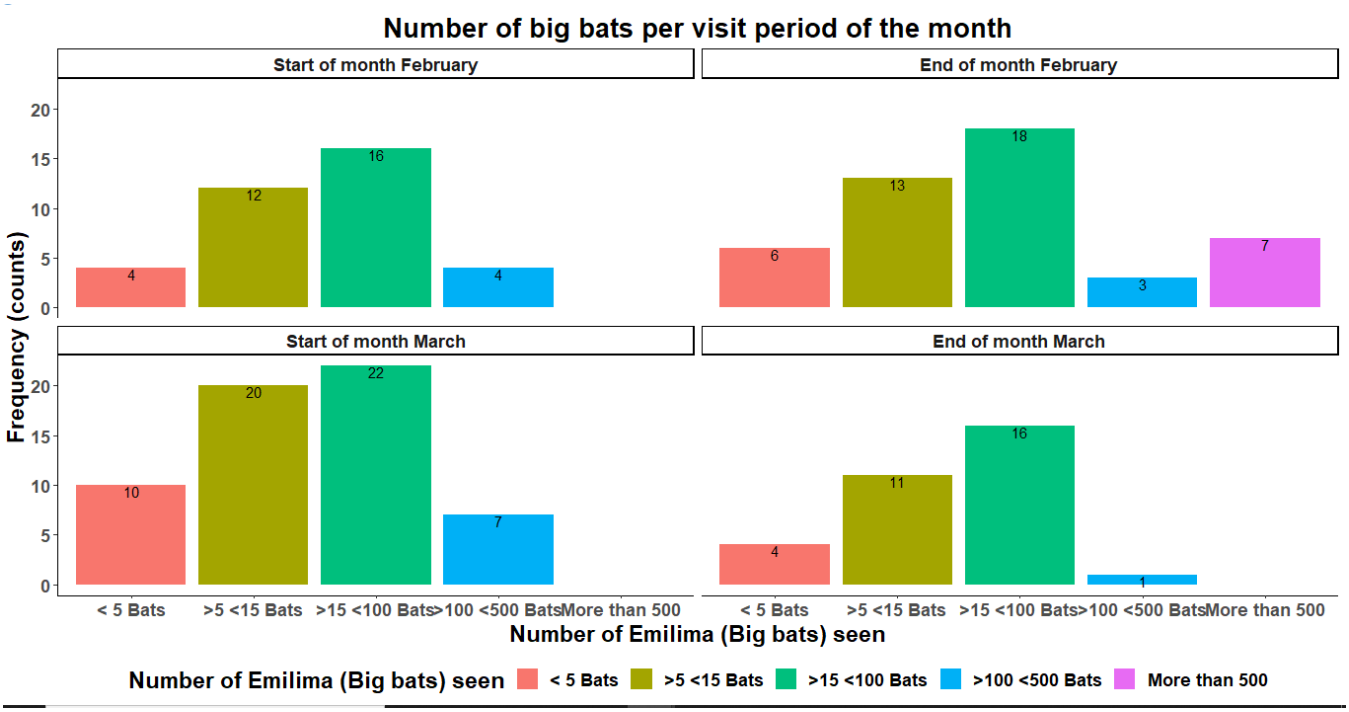
An early warning system is created that provides communities with information on bat dynamics and potential bat-human interactions, geographic locations/sites, and seasons which may be related to viral zoonotic spillover.

Achievements

- Developed a framework to guide participatory community-based bat-human interaction monitoring in Bundibugyo District.
- 15 monitoring agents (1 agent per parish) were selected and trained on how to collect data, identify roosts and specific species characteristics using mobile devices. The monitoring agents were then tasked to monitor their roosts twice a month to understand the bat patterns of bat populations in their selected areas. The agents specifically, identified bat roosts, feeding sites and bat-human interfaces that might pose risks for zoonotic spillover events.
- Developed a bat sampling framework, detailing how bats would be trapped and specimens (including type of specimen) collected from each trapped bat.
- Developed updated maps of local infrastructure (roads, hospitals, schools, households, churches etc.), and other critical reference points.

Preliminary Results

Although reported data did not span the entire climate season within Bundibugyo to facilitate comparison of bat numbers across seasons, our partial results indicate that bat numbers started to reduce in the month of March, and this reduction might have been due to increasing temperatures. Indeed, in some roosts, no bats were observed during this period as bats had migrated. However, the actual course for this variation in bat numbers could not be investigated due to the short monitoring period.



Variation in big bats (Emilima) over the monitoring period.