

Project Update: November 2021

“*Eidolon helvum* Conservation through Enhanced Citizen Science in Schools in Vihiga County, Kenya” Project has met the goals and objectives described in the proposal, amidst Covid 19 pandemic.



Figure 1 Flying foxes “straw coloured fruit bats /*Eidolon helvum*” in ‘flight’.

The main objective of this project was to involve schools in the conservation of *Eidolon helvum* through enhanced citizen science by enhancing awareness among local schools as community educators to help demystify myths surrounding the bats, improving capacity of local schools to monitor *E. helvum* and increasing local schools' virtual interaction and sharing of important information from periodic monitoring activities to prompt local and support global action for the *E. helvum* conservation. To achieve all this we have adhered to our objectives, logical and results framework not to miss out anything, We identified and mapped four schools (Mbale Boys, Bunyore Girls, Maseno Boys and Mukingi school) around the *Eidolon* roosting site where we piloted our project, we managed to do individual schools visits in quest for permissions to work with the identified schools, did a baseline survey (using questionnaires and interview guides) of schools and the community living within and around the roost sites to establish the level of awareness among students, teachers and the community on the importance of conserving the bats species and their attitudes and perceptions towards bats, workshops/training for school club leaders and club patrons which was held at Mbale Boys High school, exercised outdoor experiential learning (transect walks) to the roost sites (Mbale A, Mbale B, Ilwanda and Maseno Kefri roost sites) with students.



Figure 2: Josephine sharing the previous findings "total number of bats, community responses and the students' participation in the previous exercise" with the students before the October bats count exercise- Mbale Boys students at Mbale A roost site.

July 2021-October 2021

It's sad that we are losing some segment of the roost sites, 'as depicted in the picture below'.



Figure 3: Mbale B roost site under threat, most of the trees have been cut down for firewood and construction purposes and also to chase away them bats.

The locals have opted for another alternative to chase away those bats, because of their destructive nature "Straw coloured fruit bats have caused a significant damage to the trees and crops, this has rendered the community helpless because they can't harvest their crops and trees for sale". It's been hard convincing communities that bats

got benefits, keeping in mind that the benefits are more indirect/ecological than direct 'and this is what people want to hear and see'.

We are really trying our best to educate and make the community see and understand the benefits of bats both economic and ecological benefits, this is a community that exercises subsistence farming and they really want to utilise every part of their farms for agricultural purposes by planting short-term crops or rather vegetables besides maize farming, one problem that the community encounters is that they can't harvest vegetables for consumption purposes because of *Eidolon* defecates on the vegetables and also nothing can grow under the tree roosts, this makes it difficult to convince the community that bat guano is a soil enricher, to them bat guano is corrosive but we are still into making them understand that bats got benefits, we are very hopeful that this project will bear fruits.



Figure 4: Josephine interviewing one of the homeowners..... a colony of straw-coloured fruit bats in the background (Mbale A roost site)

One of the homeowners threatened to cut down all roost trees in his compound and even promised to incite the other homeowners to do the same. "I almost lost my grandson because of branch breakages which are caused by bats (dense clusters), it's one of the reasons I had to cut down this mango tree," said the homeowner.

The loss of roost trees leads to bats crowding into too few trees for roosting hence branch breakages due to their heavy weight. We are likely to lose more trees!



Figure 5: a pic showing the mango tree in question. Figure 6: Yonni, the software developer showing us how to use the app and how to monitor the Eidolon helvum population dynamics over time.

Achievements

We developed two platforms: a software- (<https://citizenscienceinschoolsforabats.org/research>) that is being used in monitoring the eidolon species both locally and globally- and a mobile application – (<https://play.google.com/store/apps/details?id=com.lighteye.citizenscience>) whereby we transitioned from manual data entry (use of data sheets) to digital data entry (use of phones and laptops).



Figure 7: Evarastus 'one of my team members' taking Maseno boys' students through the mobile up. The dos and don'ts. (Maseno roost site).



Figure 8: is a pic of Josephine taking Mbale boys' students through the mobile app that we developed.... yes, we already transitioned from manual data entry to digital data entry. Such a great milestone!

This has really promoted the interaction between project schools on their experiences as well as enabling the school citizen scientists to upload and share their bat monitoring data. The digital platforms complement the current Competency Based Curriculum (CBC) which has been launched in Kenyan schools to help nurture talents and to expose the learners to global careers. The digital platforms have enhanced interactions amongst my team, fellow conservationist and global collaborators.

We developed an action plan for the conservation of *Eidolon helvum*.

We have established stable school clubs to help us monitor this charismatic species and have really helped us towards achieving the objectives of our project.



Figure 9: a pic of us posing with Maseno boys after the normal monthly bats count exercise-Maseno Kefri roost site.



Figure 10: a pic of us posing with Mbale boys' students after the normal monthly bats count exercise-Mbale B roost site.

In addition, though not captured in our objectives we recruited monitoring scouts from the community to help us educate the community about the importance of bats and monitor the dynamics of this charismatic species overtime, even in our absence.



Figure 11: Ilwanda roost site monitoring scouts.

Finally, we haven't accomplished a small percentage of our work like the number of workshops in schools don't equate the number of workshops mentioned in the proposal because of Covid-19 protocols/measures imposed on schools by the Ministry of Health and Ministry of Education, but we hope to do much before end of this project. We are yet to publish our findings.

Our project has really changed people's mindset, attitudes and perception about bats though there's need for more related research to be done in these sites. Having involved students and other young people in this project then the survival of *Eidolon helvum* in the near future is promised, posterity!

Summary 'graphical representations of the bat count over time'

The graphs below give a summary of the total counts over time. Bats are seasonal migrators, and they also make local shifts in between roost sites in search of water,

food etc. Zero counts in one roost site show that the bats had shifted to another roost site but funnily enough they still visit the other roost sites at wee hours in search of food. NB: the counts are done at daytime from 9am-6pm

