

# Assessment of Lepidoptera Pollinators Biodiversity Data in East Africa

Our butterflies, our heritage



**Assessment of Lepidoptera pollinator species  
Diversity data in East Africa Workshop  
National Museums of Kenya  
November 2020**

**Editors:**

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**Project: Assessment of Lepidoptera pollinator species diversity data in East Africa**

**Venue: National Museums of Kenya, Museum Hill, Louis Leakey Auditorium**

**23<sup>rd</sup> – 24<sup>th</sup> November 2020**

**Workshop Objectives:**

- i. Presentation of the Project Progress
- ii. Updates on biodiversity data mobilization, access and management skills/applications
- iii. Exploration of opportunities to collaborate/utilize existing data platforms to support biodiversity conservation (species and habitats)

<b>DAY 1: Monday 23<sup>rd</sup> November 2020</b>	
<b>09:00 – 9:10</b>	Registration and introduction of participants: Ms. Ruth N. Njuki, NMK
<b>09:10 – 9:25</b>	Overview of the project and workshop objectives: Dr. Esther Kioko Project PI, NMK
<b>09:25- 9:40</b>	Information access on Lycaenidae, Papilionidae and Hesperidae butterflies recorded in Taita Hills: Alex Mutinda, NMK
<b>09:40 – 9:55</b>	Hawkmoths diversity in Ngangao forest Taita Hills: Augustine Luanga, NMK
<b>9:55 – 10:10</b>	Butterfly Diversity and Abundance in the Landscapes Surrounding Ngangao Forest, Taita Hills: Duncan Mwinzi, Project MSc Scholar/Intern
<b>10:10 – 10:20</b>	Welcome Remarks DNRR, NMK
<b>10:20 – 10:30</b>	Workshop Opening Remarks by the DG NMK
<b>10:30 – 11:00</b>	<b>Tea Break</b>
<b>11:00 - 12:00</b>	Review of Biodiversity data platforms and Opportunities to Support Conservation Initiatives: Esther Mwangi, NMK Bioinformatics officer
<b>12:00 – 1:00</b>	What more can be done for biodiversity data mobilization and access for sustainability and greater impact? Dr. Siro Masinde, Botany Department, NMK
<b>1:00 – 2:00</b>	<b>Lunch break</b>
<b>2:00 – 3:00</b>	The IPT and opportunities for biodiversity data mobilization and access: Lawrence Monda, ICT Department, NMK
<b>3:00 – 4:00</b>	Group/Plenary session: Exploration of opportunities to utilize existing data platforms to support biodiversity conservation (species and habitats)
<b>DAY 2: 24<sup>th</sup> November 2020</b>	
<b>09:15 – 09:30</b>	Registration and Re-cap: Ms. R. N. Njuki

<b>09:30 – 11:00</b>	Tools for biodiversity information capture, management and sharing for enhanced access: Practical Session at the NMK Botanic Garden Ken Matheka, Botany Department, NMK
<b>11:00 – 11:30</b>	<b>Tea Break</b>
<b>11:30 – 1:00</b>	Data Users Expectations (Participants Presentations)
<b>1:00 – 2:00</b>	<b>Lunch break</b>
<b>2:00 – 3:00</b>	Data Users Expectations (Participants Presentations)
<b>3:00 – 4:00</b>	Group/Plenary session on Way forward: Opportunities for collaboration to support insect pollinators conservation (species and habitats)
<b><i>With appreciation of the support provided by:</i></b>	
	

### **List of participating institutions**

1. Nation Media Group
2. National Environment Management Authority (NEMA)
3. Dawida Biodiversity Conservation group (DABICO)
4. Kenya Forest Research Institute (KEFRI)
5. Kenya Water Towers Agency (KTWA)
6. National Museums of Kenya (NMK)

### **Plenary session 1: Exploration of opportunities to utilize existing data platforms to support biodiversity conservation (species and habitats)**

NEMA

Some institutions are not aware that the biodiversity data is open access in GBIF. Appreciated the presence of biodiversity data in open access form GBIF.

Based on the research done in Taita Hills, is the data sufficient to support the gazettelement as environmental significant area?

What could be contributing to the high butterfly diversity along the forest edge as compared to the farmlands?

Presence of biodiversity data for different ecosystems in the country

Providing policy dimension for every research findings

Working on trends for various species to help in decision-making.

#### KWTA

Do the various institutions having data have data sharing policy?

Possibility of different institutions to publish their data with GBIF independently. Should it be through collaboration with National Museums of Kenya?

The biodiversity data is important in justification for decision making in matters related to environment.

#### DABICO

There is a gap in most research projects in disseminating the findings of the research to the local community for conservation work. The community should be given priority in sharing of research findings since they are the custodians of biodiversity at the sites.

#### KEFRI

- There is great opportunity for collaboration for different institutions in biodiversity work
- Request from National Museums of Kenya to support other institutions holding databases like KEFRI, NEMA, KALRO with expertise to be able to develop products that can be shared like through GBIF.
- NMK has large amount of biodiversity data being the National Repository of natural collections. NMK has a data sharing policy which may need to be reviewed from time to time as new strategies on data sharing emerge. NMK has been providing biodiversity data to other institutions for various purposes including for the reports that NEMA makes on the state of the environment.
- There exists Kenya Open Data Portal. There is no data shared on this portal by institutions and researchers. This is due to cultural and attitude issues in which people need to work on.
- Many scientists not good in giving data back to the community. This is due to lack of skills to package the information back to the local community.
- Imaging in GBIF is important and there is need to upload more images for comparison purposes.
- Taita Hills should be regarded as a significant area for conservation because of the high endemism of different taxa.
- Trends for different species can be done. The data shared in GBIF can be used to determine

species trends for making conservation decisions and guide policy making.

- Biodiversity data is available on some areas with specific niche for the species.
- The work on Taita Hills, more butterfly diversity on the forest edge and more endemism at the same habitat is because of the presence of larval host plants.
- Need for formation of a technical committee for data sharing between different institutions.
- The JRS project has linked up very well with the local community. The project has been involved in establishment of pollinator garden at DABICO Resource Centre, provision of butterflies and moths display drawer and burner aiming to create awareness for biodiversity conservation.

### **Use of media in dissemination of science work**

- Use of media is very important in disseminating science work as it reaches wider audience
- Use of non-mainstream media platforms like Facebook and twitter can be important in reaching the youths.
- It's important to check and verify the information which the media has to report on certain topics to ensure that the right information is shared with the public.

### **Application of biodiversity data**

- Generation of spatial maps
- Data papers
- Estimation of species richness and distribution
- Aid in developing species checklists
- Ecological/environmental studies on attributes of species including population size, geographic distribution, habitat and behavior
- Monitor environmental changes
- Determine harmful effects of pesticides
- Document spread of infectious diseases
- Document the spread or occurrence of invasive species
- Assess the impacts of threats to species (pollution, disease and climate change)
- Decision-making related to natural resource management

### **Challenges to publishing data**

- Data sharing due to reluctance to share data because of concerns that someone or institution will benefit or misuse the data.
- Data sensitivity in case one is dealing with a threatened species.
- Language barrier may occur when there is lack of accurate and reliable translation if the data file is done in a foreign language.
- Taxonomy issues are quite complex and often contentious due to forth and back revisions of organisms.
- Information storage is a big challenge to individuals and institutions especially if the data is electronic due to electronic device theft and collapse.
- Data cleaning can be a great challenge especially when dealing with big datasets.
- Geo-referencing old natural history specimens because of less details in the field notes and changes of locality names.
- Data standards

### **Challenges to data sharing**

- Limited expertise in institutions to enable data sharing
- Limited resources like publishing tools and hosting websites
- Technologies and tools for sharing data keep on changing thus keeping up is a tall order
- Institutional and individual cultures and practices in data sharing and management dictate how the data is shared.

### **Opportunities in data sharing**

- Capacity development in data mobilization, management, publishing and multidisciplinary collaborations.
- Creating communities of practice that can sustain supply and demand for biodiversity data
- Increasing data availability to end users
- Increasing capacity to use shared data to influence policy and decision making.

### **Importance of iNaturalist**

- Mapping and sharing occurrences of biodiversity by enthusiasts from far and wide.
- Helps in identification of flora and fauna by different experts.
- It can lead to discovery of new taxa due to the intensive and repeated checks by different experts.
- It is a source of scientific research data to researchers and individuals.
- The application creates a platform for interaction between observers and identifiers.

## **Plenary session 2: Opportunities and way forward**

### **KTWA**

- There is need to focus in helping the communities living in the water towers through livelihood generation activities such as butterfly farming, beekeeping among others.
- Involving the local communities through trainings for uptake and understanding the project outcomes.
- Technical experts networking to help one another.
- KTWA focusing in gazzeting Kasigau forest in Taita Hills as a water tower and restoration of the ecosystem.

### **KEFRI**

- Acknowledgement for the continued collaboration between the project and KEFRI. Need for more collaboration between institutions for success and more impact to the local community
- Grateful for the vast knowledge and skills acquired on different applications of citizen science
- Acknowledgement to the Project PI and the NMK JRS project team for the great work and experience shared

Closing remarks from Project PI, DR. Esther Kioko. Thanked all participants for the success of the workshop



iNaturalist training to workshop members at National Museums of Kenya