Research and Conservation of the Critically Endangered Montane Dancing Jewel *Platycypha amboniensis* in Mount Kenya

Project: 220529140

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The project seeks to restore the habitat integrity for adult and larvae of the critically endangered Kenya Jewel *Platycypha amboniensis* in Mount Kenya with an ultimate goal of improving its conservation status.

Field research surveys are being conducted in order to establish the distribution and population of Kenya Jewel. The local community is being engaged in continuous monitoring, rehabilitation of watersheds and mitigating the threats.

The project engages local community through capacity building and conservation planning to set up their own intrinsic measures to conserve the unique species and its habitats from the brink of extinction.

Species education is being done through traditional and social media announcements. Publications will be used to disseminate project finding to enhance conservation knowledge locally and in the international domain.

This Mid-term Project Report was Prepared by Anthony M. Karani on 1st December 2022

Research Surveys and Monitoring




Photos above from top left: a) AMK with a sweepnet ready for a survey at Irangi Forest gate; b) AMK collecting samples along Thuci River with scouts in Chuka Forest station; c) with local youths and students at a natural habitat of Kenya Jewel along River Ena in Irangi Forest and; d) AMK ready for a survey with forest rangers at Ragati Forest station.

Photos to the right (from top left): a) Dancing jewel (*Platycypha caligata)* photographed and collected near University of Embu; b) Kenya Jewel (*P. amboniensis*) marked and released at Chehe Forest; c) Male Kenya Jewel from Kangaita Forest; d) Teneral male Kenya Jewel at Irangi Forest.

Kenya Jewel in the Spotlight: The Kenya montane dancing-jewel is a rare damselfly endemic to the Aberdares Mountains and Mount Kenya in central Kenya. It is found along montane forest streams, between 1,600 and 2,000 m ASL. This damselfly is distinguished by its bright orange legs and a mostly sky-blue abdomen, as well as the large, bulbous eyes, flattened orange tibia white on the inside and long, translucent wings characteristic of dragonflies and damselflies. Females are black brown. The species is critically endangered (CR) due to extensive habitat loss as a result clearance of forests where it occurs.

What we are doing: Field and monitoring surveys are ongoing. First, the museum records were reviewed to determine localities of previous records. Public observational data, iNaturalist and Global Biodiversity Information Facility (GBIF) contains some observation including those from this study. This study found that Kenya Jewel occurs in more streams in Mount Kenya and Aberdares than earlier documented (including the Eastern side of Meru Forest and as far south as Gatamaiyu Forest). However, water abstraction by local unregulated projects is widespread throughout the study area. Damselflies have been found in forested streams connected to the main forest but none has so far been recorded from fragmented forests. Our future plan in monitoring is to test whether two geographically separated populations (Aberdares and Mount Kenya) are genetically distinct.




Photos: © Anthony M. Karani

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Community Capacity Building

Photos above from top left: a) AMK poses for a photo with women of Murugu Forest Edge Community Group after training on making baskets using beads and; b) Women showcasing the baskets they have made.

Photos to the right (from top left): a) A cow grazing inside the forest distracts a pair of dueling males of Kenya Jewel (red arrows); b) a water storage tank; c) AMK addressing a community forum; d-f) water abstraction sites in Mount Kenya disrupts the natural flow of forest streams by causing algae brooms, overgrowth and ephemeral flooding.

Because knowledge is power: Kenya jewel and its habitat can be effectively protected if people know that they exist and care about their survival. Our team is working with local community groups and water user associations to spread information on the conservation status of Kenya Jewel. We have distributed posters, information leaflets to local groups and schools. In future, we have plans to present project finding in an international conference.

Our approach: In recognizing water abstraction from the montane streams of Mount Kenya as a threat to freshwater species, we are holding the bull by its horns. These beneficial community needs are 'the root of the problem' to the species crisis and we are working with communities towards ecosystem restoration. Our team is training the communities on alternative livelihoods such as basket weaving using beads and fibre obtained from invasive species of mallows (Hibiscus/Pavonia) from the streambeds. The end goal of this approach (our future plans) is to aid water users to clean up undesirable sites such as algae infested area (prevent future algal brooms), clear overgrowth in the breed grounds of Kenya Jewel and other freshwater species and plan their water abstraction sites.

Photos: © Anthony M. Karani

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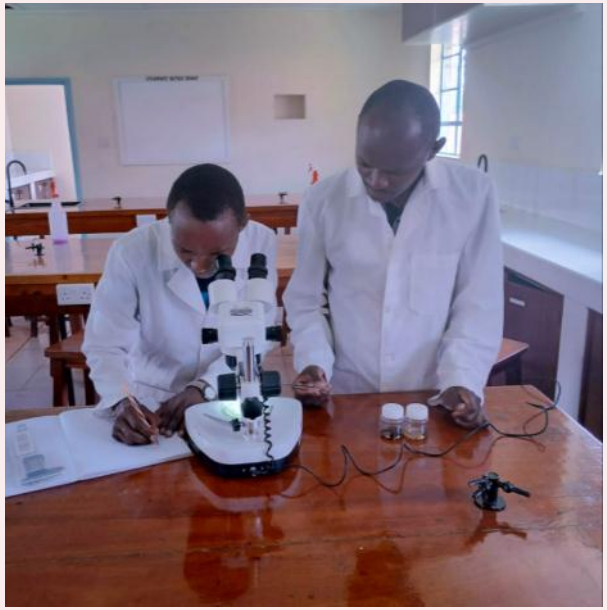

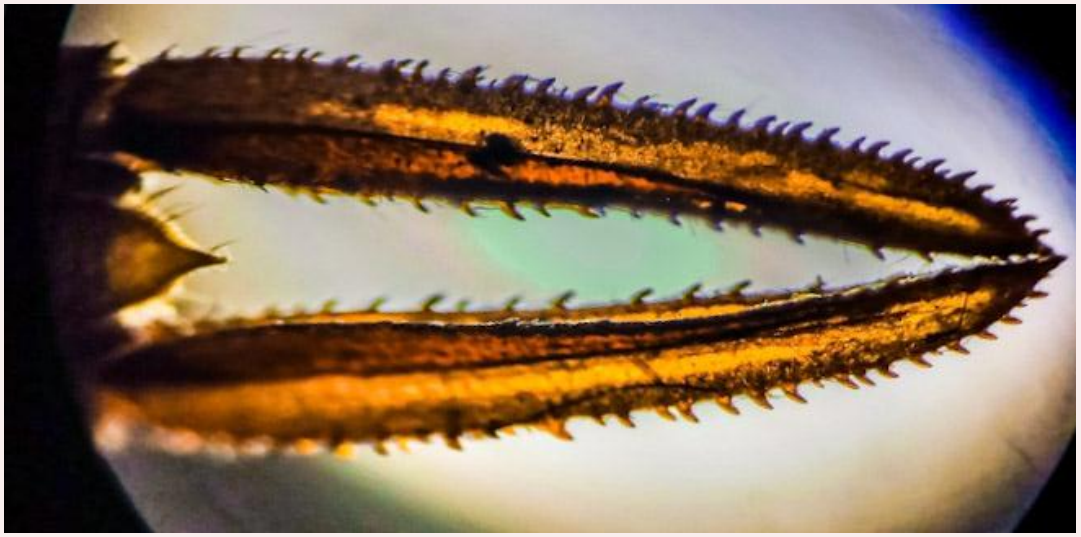

Additional Research Support

Results of our study on the nymphs of Kenya Jewel reveal morphological variations from the widely known Dancing jewel. In deed nothing was known about the development of and reproductive biology of this species prior to this study. The research is still ongoing. The end goal of to publish high quality paper to aid our understanding and conservation of Kenya Jewel. The findings will be published preferably in the journal 'African Entomology'. Observational data is being contributed to iNaturalist. Other field studies on the initial distribution and population data will be published for comparative studies and conservation with the aim of securing a long-term viable population of the montane dancing-jewel throughout the species range in the future.

Photos above from top left: a) AMK mounting a specimen on a slide and being assisted by Collins Onyango at Embu University Zoology Lab; b) AMK observing and sketching the nymph of Kenya Jewel on a stereo microscope being assisted by Samuel Thuita at UoEM Zoo Lab; c) the nymph of Kenya Jewel collected from Irangi Forest and preserved in absolute alcohol at UoEm Zoo Lab; d) the Nymph of Kenya Jewel in a natural setting photographed at a fast flowing montane stream in Kangaita Forest; e) the head and prothorax of Kenya Jewel on dorsal view as observed in a stereo microscope and; f) photos below showing caudal lamellae of Kenya Jewel as seen on a light microscope.

Montane Dancing-jewel

***Platycypha amboniensis* Martin 1915**

(*Zygoptera: Chlorocyphidae*)

Photo: © Anthony M. Karani

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