

BARCODING AQUATIC BIODIVERSITY OF SOUTHERN – EAST AFRICA

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Abstract

Faunal diversity in Mozambican rivers and estuaries remains understudied as a result of ongoing armed conflicts in some parts of the country as well as factors like very limited local expertise and logistical difficulties when accessing sites. Animal communities can be rapidly and effectively documented through the means of novel genetic techniques, especially the metabarcoding of environmental DNA (eDNA). This next-generation technique relies heavily on the maintenance of DNA barcode reference databases which impact the full potential of this method. The current project had two aims. First, specimens were caught at various sites in Mozambique and their DNA was extracted and amplified, after which successful sequences were added to the Barcode of Life Database (BOLD) repository for future use. Associated morphological specimens were also collected. Second, DNA extracted from environmental samples at the same sites was analysed using eDNA metabarcoding. Using public repositories of available reference DNA sequences as well as the sequences generated in the first half of this project, the organisms whose DNA was present in the eDNA were identified to their lowest taxonomic level. This information along with the standard DNA sequences, is important in highlighting the potential biodiversity within Mozambique's main rivers and estuaries. It will also provide information as to how many species there are as well as further sampling efforts required, all of which will be used to complete the reference database. This study has contributed significant data that will improve the overall knowledge and biodiversity within these habitats.

Key words: Genetic diversity, eDNA metabarcoding, Mozambique