

ECOLOGICAL RELATIONSHIP BETWEEN FISH FAUNA AND CORAL REEF BENTHOS IN KIUNGA MARINE NATIONAL RESERVE, KENYA

Olendo Mike¹, Nico Koedam¹ and Marc Kochzius¹

¹ Master Programme Ecological Marine Management (ECOMAMA), Department Biology, Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussel, Belgium
E-mail: molendo@vub.ac.be

² Algemene Plantkunde en Natuurbeheer (APNA), Department Biology, Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussel, Belgium

³ Mariene Biologie, Department Biology, Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussel, Belgium

Kiunga Marine National Reserve (KMNR) is located at the northernmost stretch of the Kenyan coastline (40° 07' E, 2° 00' S). The reserve was designated as such in 1979 under the Wildlife Conservation and Management Act of 1976 and it is under the authority of Kenya Wildlife Service (KWS). KMNR is unique for its 'interconnected environments' from coastal dunes, island biota, mangrove forests, seagrass beds, and coral reef to the open ocean. Being at the southern end of the Somali Upwelling, it is believed to be at the margin of the coral reef ecotone. Artisanal fishing is the main economic activity, contributing to more than 70% of the household income.

The study seeks to enhance the management of Kiunga Marine National Reserve and adjacent area through incorporation of scientific information to guide decision-making. The study aims to identify the ecological status by relating coral reef benthos with fish census data and use survey data to describe the artisanal fishery.

To conduct the data analysis, a time series dataset spanning 2004-2009 has been collected. The data include underwater visual census (UVC) for fish and invertebrates identified to species level, line intercept transect (LIT) for coral benthos, coral species diversity and recruitment identified up to genus level.

The analysis of ecological monitoring data will be done primarily with the statistical software PRIMER (Plymouth Routines In Multivariate Ecological Research).