

# Some Aspects of the Ecology of *Macrobrachium macrobrachion* Herklots, 1851 (Crustacea: Decapoda: Natantia) in the Brackish Water Zone of the Benin River at Koto, Southern Nigeria

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## Abstract

An ecological study to evaluate some aspects of the ecology of the prawn *Macrobrachium macrobrachion* Herklots, 1851, along a 5 km stretch of the Benin River at Koko, Southern Nigeria was carried out for a period of 24 months from March 1986 to February 1988 at fortnightly intervals. Of the five stations studied, three (I, III, V) were situated along the main river channel, while two stations (II, IV) were located on creeks entering the main river. Relatively higher numbers of *M. macrobrachion* were recorded at stations II and IV than at stations I, III and V. The fluctuations in numbers and biomass showed distinct seasonality. They were generally high during the rainy season and low during the dry season. The abundance of *M. macrobrachion* at stations I, III and V were significantly influenced ( $P < 0.005 - 0.05$ ) by environmental conditions. The overall size frequency distribution of the species indicated the occurrence of mixed populations in the study area. The recruitment of young occurred during the rainy season.

## Introduction

Twenty-six species of the genus *Macrobrachium* widely distributed throughout the Indo-pacific are used in aquaculture (Powell, 1982). *M. macrobrachion* Herklots, 1851 is one of West African species of potential importance in aquaculture (Evers, 1979). Few literature are available on *Macrobrachium* sp. in Nigeria. Powell (1982) reported that *M. macrobrachion* is the most common species of the genus in all tidal waters. It is commercially important, comprising 80% of the *Macrobrachium* catches in Lagos lagoon (Marioghae, 1984). The food and fecundity (Omo-Malaka, 1970) and the biology and distribution (Marioghae, 1984) of the genus in water bodies around Lagos, Nigeria have also been reported. For the development, exploitation and management

of prawn fisheries, data on their ecology and biology is necessary. The lack of such basic scientific data is a common feature in the Nigerian fishery (Awachie, 1973; Edokpayi *et al.*, 2000). The objective of this study is to provide some data on the ecology of *M. macrobrachion* in Benin River, southern Nigeria.

## Materials and methods

### Study area

The study sites were on a 5 km stretch of the Benin River at Koko (6°00' N, 5°30' E). The Benin River (Fig. 1B) is an estuary through which many rivers drain into the Atlantic Ocean (Udo, 1970). The upstream of the Benin River is completely fresh, while at Koko, where the tidal fluctuations of the sea are pronounced, it is characterized by low salinity, which increases downstream