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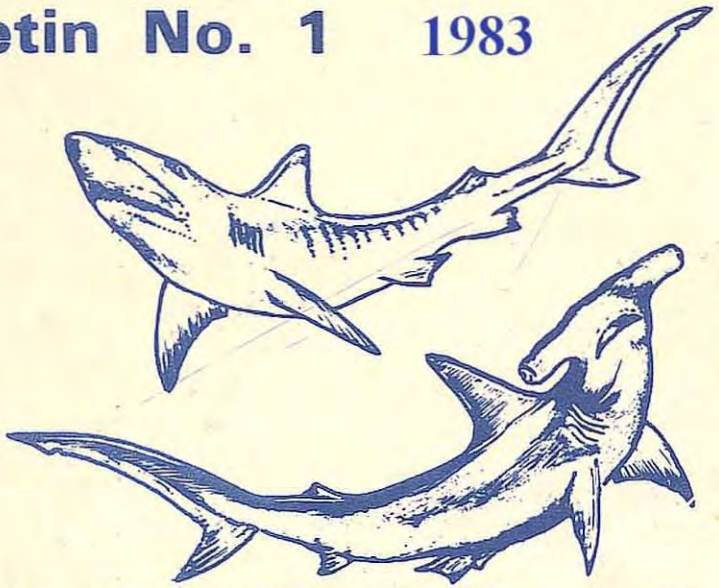

A BULLETIN OF
KENYA MARINE & FISHERIES
RESEARCH INSTITUTE

EDITORIAL NOTE

The need has been felt for a long time for a bulletin covering aquatic resources out-puts of the country quickly and comprehensively. The Board of Management of Kenya Marine and Fisheries Research Institute realised this need and directed the Institute to take immediate action for ensuring that information on aquatic resources is compiled for easy communication to the people.

The editorial group has decided to start reporting activities related to aquatic resources under the title "KENYA AQUATICA". As far as possible efforts will be made to include short scientific communications, critical reviews, seminar proceeding and other ad hoc publications. This comprehensive coverage will be possible only through cooperation of various Institutions, Departments, Societies and individuals who are concerned with aquatic resources.

Kenya Aquatica is a technical and extension series for rapid dissemination of information on aquatic resources and allied information from Research Officers, Fisheries Officers and any individual for transfer of Technology to the fishermen and industry and any other relevant information needed for National Development.

We appeal to all concerned to send us regularly such publications, at the following address:

Director
Kenya Marine & Fisheries Research Institute,
P. O. Box 81651.
M O M B A S A

DISTRIBUTION OF NUTRIENTS IN KENYA COAST DURING THE 1979 SOUTH EAST MONSOON

Introduction.

This note presents a brief analysis on the micro-nutrients, silicate, phospate and nitrate based on some of the data collected in offshore region 2-3°S of Kenya Coast during a part of the Indian Ocean Experiment (INDEX) in 1979.

Water samples were collected at various depths (0-350 m), between 200 and 100 m contour for four section, Mombasa and Ras Ngomeni (Southern section); Kinyika and Kiwayu (Northern section) and analysed for nutrients.

Distribution of silicate, phosphate and nitrate

The concentration and distribution varied considerably in the entire water column. The Northern section exhibited higher concentrations than the Southern ones, with occasional high and low concentration region in the surface layer (0-80 m) and the deep layer (120-300 m) below the thermocline layer (80-120 m).

The surface layer exhibited low concentration silicate 2.0 - 40/ugA/L (micro-gram atoms per litre), phosphate 0.2-0.4./ugA/L, nitrate 0.1-0.5/ugA/L, with oceanward region of much less concentration close to the water surface (0-20 m).

The concentration in the thermocline ranged between 4.0 - 8.0/ugA/L for silicate, 0.2-05/ugA/L for phosphate and 1.0-8.0/ugA/L for nitrate. The thermocline appeared raised by about 30 m at Kiwayu section.

Relatively high concentration with values greater than 10.0/ugA/L for nitrate and silicate, and 0.8/ugA/L for phosphate occured between 80-150 m at landward station in Ras Ngomeni section.

In the deep water increased concetrations, of silicate 12.0/ugA/L, phosphate 1.0/ugA/L, nitrate 12.0/ugA/L were noticed. To the south of Ras Ngomeni, the deep layer showed regions of low concentration silicate less than 8.0/ugA/L, phosphate 0.5/ugA/L and nitrate 10/ugA/L below a depth of nitrate 10.0/ugA/L below depth of 240. m. No similar region were obeserved at Kiwayu section.

Factors affecting distribution.

The availability, concentration and distribution of the micro-nutrients largely depend on the biological and physical processes as well as on the characteristics topography of a given section.

Biotic factors have a vital influence on the distribution of nutrients, however, in Kenya a coast planktonic biomasses are characterised by periodic influence of the winds and monsoon driven currents, which have little been studied. However, the ultimost importance of the Sabaki and Tana effluent occuring close to northern section, the seasonal bottom resurspension of nutrient by strong currents passing over North Kenya bank complex and the front region (2-3°S) between Somali and East Africa coastal currents are recognised as features attributable to the observed northerly increased of nutrients. The regions of low concentration on the deep layer to the south probably arise from water masses associated with the South Equatorial Current while on the surface layer the features can be thought as offshore driff of small regions of water masses from the inshore.

More detailed work is needed to find out the topographic influence of the bank, and the extent of the two rivers. Tana and Sabaki on the micronutrient distribution, with a view to improving the understanding of the distribution of biological resources which largely depends on the availability of nutrients for phytoplankton organisms.

MUTUA M. N.