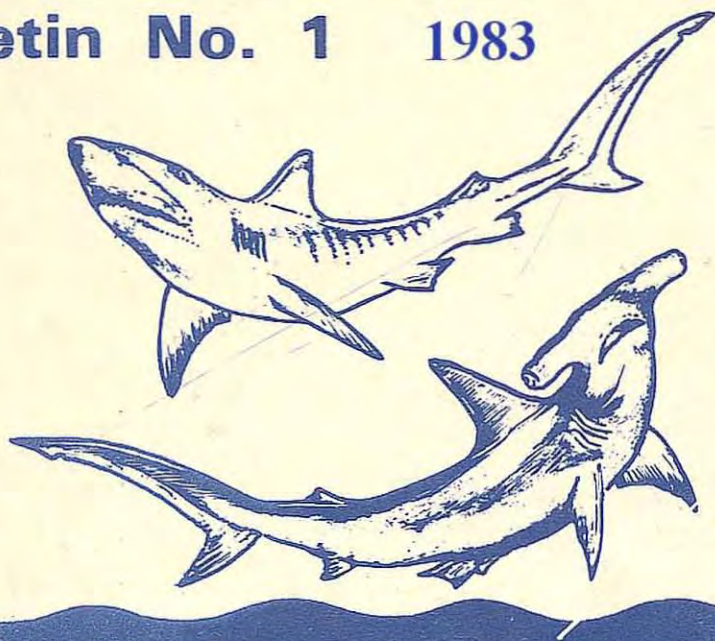


KENYA AQUATICA

Bulletin No. 1 1983



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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.

Editorial Group

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

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M O M B A S A

MARINE PETROLEUM POLLUTION MONITORING ALONG THE KENYA COAST

Introduction:

The awareness to petroleum as a potential environmental pollutant was prompted by major oil spills, like the Torrey Canyon and Amoco Cadit disasters. Thus apart from oil spills from tankers, other sources of petroleum pollution are bilges from ships, effluents from refineries, ground sippage, oil drilling platforms, etc. The Kenya Coast being next to the busy Indian Ocean trade route plus the port of Mombasa, a frequent calling port for oil tankers supplying the refineries, is vulnerable to oil pollution. It is, hence, imperative that continuous monitoring of the extent of oil pollution is carried on.

Objectives:

At present, two components of oil pollution are being studied preliminarily to give base data; namely petroleum tar lumps deposited on the beaches, and dissolved and/or dispersed petroleum hydrocarbons in sea water. The aim is to study the variation of the two parameters in relation to physical factors e.g. the ocean currents and winds, and location. The former component was initiated in 1979 while the latter was initiated in 1980. The petroleum pollution monitoring project was initiated under the IGOSS pilot project on marine pollution (petroleum) monitoring, now the Marine Pollution (petroleum) monitoring (MARPOLMON) project.

Experimental

(1) Tar on beaches

The region covered for this component of the project includes the beaches located between Msambweni and Malindi sampling stations or beaches were chosen at random and the approximate concentration of tar (in gm^{-2} or gm^{-1}) measured, and recorded. Stations were visited at least once a month usually at or around low tide.

Preliminary results have shown that most of all beaches visited are affected by tar pollution in varying degrees with location and season. This is a matter of concern to tourist hotels located at the beaches since the beaches get soiled. Generally beaches located in vicinity of the Mombasa port are more polluted e.g. Shelly Beach tar concentrations of upto 29.7 gm^{-2} or about 180 gm^{-1} were found.

However the data still has to be analysed for possible correlation with other

physical factors. Also an attempt at identification of source of the tar using crude oil samples will be made.

(2) Dissolved and/or dispersed Petroleum Hydrocarbons in sea water. Sampling stations for sea water were located at random along the Kenya Coast from Pemba Island (near Vanga) to the north Kenya banks. About 18 water samples were collected during three cruises on the "Rv. ujuzi" from mostly inshore stations. About 5 litres samples were collected at 1 metre depth at every stations. Extraction for dissolved (dispersed) hydrocarbons was done using carbon tetra-chloride and the final analysis was completed using a spectrofluorimeter with n-hexane as the solvent.

Preliminary results from a few samples which have been analysed show quite low concentration of dissolved/dispersed hydrocarbons. Most of the concentrations measured are below ppb 80 far.

Similarly, attempts at identification of the hydrocarbons will be made in future, preferably by Gas liquid Chromatography technique.

Munga Daniel