

Survey of the Libyan territorial waters and the adjacent international waters in the Central Mediterranean

by

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Introduction

A survey of the Libyan Waters off the Libyan coast and in the Southern Central Mediterranean was carried out by the Japanese vessel *Hoyo Maru* and the scientific staff of the Marine Fisheries Research Center, Tripoli according to an agreement between Libya, Malta and Taiyo Fishery Co. Japan.

The Continental shelf is broadest in the Gulf of Gabes where it occupies most of the Gulf-Eastwards, the continental shelf becomes narrower, and off Cyrenaica it is not more than few miles wide.

Benthic fauna and flora

Sea weeds and sponges are the most dominant flora and fauna. Dense weeds cover most of the littoral waters. The benthic fauna is quite rich. Sponges are especially dense. Echinoderms are especially abundant in the North and Northeast of the island of Djerba, star fishes are widely distributed in shallow as well as deep water. Ophiurids are widely distributed in deep water. Echinoids, Gastropods, Coelenterates, Ascidians as well as Crustaceans are all well represented in the area.

Temperature

The water temperature was measured at the surface, 20 m, 50 m and, in many cases at the bottom. Isotherms showing temperature distribution at 50 meters depth indicate that a tongue of cold water 18°C to 19°C is moving in a SW direction inside the Gulf of Gabes pushing the original warm water (22 to 25°C) of the gulf to the inside. The cold water tongue is apparently of Atlantic origin.

In the Gulf of Sidra warm water 22°C, from the Eastern Mediterranean gets into the Gulf in an anti-clockwise directions.

This might explain the higher productivity of the Gulf of Gabes.

Fisheries

The whole area was divided into 6 fishing areas :

The Gulf of Gabes was divided into three fishing areas :

- Northern area : A₂
- Central area A₁
- Southern area B

The Gulf of Sirte was divided into an :

- eastern part : fishing area G, and
- a western part : fishing area D.
- This western part also included an area off Derna " area E ".

The Malta fishing area included the Medina Bank and the regions around the island.

The fishing areas were divided into fishing grounds each consisting of a rectangle 0.5° longitude \times 0.5° latitude.

The average catch/hr for area A, as calculated from 64 tows amounted to 51 kg. Horse mackerel constituted 24.1 % of the catch, *Sargus sargus* 8.4 %, *Mullus barbatus* and *M. surmuletus* 8.1 %, *Pagellus erythinus* and *P. acarne* 7.4 %, *Merluccius merluccius* and *Gadus minutus* 4 %, *Pomatomus saltator* 2.9 %, Cephalopods 5.6 %, Crustaceans: *Penaeus trisulcatus* 10.7 %, *Parapenaeus longirostris* 0.1 %, *Squilla mantis* 1.7 %. There were 19.5 % of other small fishes.

The average catch/hr for area A₂ as calculated from 11 tows (415 mins) amounted to 20 kg. *Merluccius merluccius* and Elasmobranchs were dominant 24.1 % for the former and 21.9 % for the latter. Cuttle fish amounted to 8.0 % of the catch. Red mullet 6.6 %, breams 5.8 %, Scabbard fish 5.8 %. The shrimp caught from this area was all *Parapenaeus longirostris* 6.6 %.

The small fishes constituted 7.4%. From the Southern part of the Gulf of Gabes, area B, an average of 21 kg/hr was caught. The most dominant species of the catch was again *Trachurus trachurus* which constituted 16.5 % groupers 9.3 %, *Sargus* sp. 8.0 % *Boops boops* 1.8 %, breams 7.0 %, red mullet 5.5%. The small fishes constituted 28.7 % of the total catch.

Area C : average catch/hr = 32 kg.

This area is characterized by a high percentage of elasmobranchs 24.8 %. Silver hake constitutes 10.2 % of the catch, breams 9.1 %, scorpion fish 5 %, red mullet 4.8 %, horse mackerel 4.3 %. Small fishes constitute 35.2 % of the catch.

Area D-E : average catch/hr = 36 kg.

Sharks again constitute 37.5 % of the catch, common sea bream 8.2 %, red mullets 5.8 %, silver hake 5.1 %. Small fishes constitute 33.1 %.

Malta area : The average catch/hr. amounted only to 13 kg. Red gurnard is the most dominant species 37.7 %, sharks 14.9 %; silver hake 12.3 %. Horse mackerel 8.4 %. Pink shrimp 3.9 %.

In conclusion we notice that :

The survey represents only conditions in August/September 1972.

Most of the fishes caught were under-sized denoting over-fishing.

The Western part, Gulf of Gabes, is more productive than the Eastern part.

The fauna and flora in the area is quite rich in the number of species.

An average catch of 60 kg/hr of fish of which 40 % - 55 % are undersized could be considered to represent the average yield of the whole area.