



Dynamics of the Length Structure of Commercial
Stocks of Horse Mackerel (*Trachurus trachurus*)
in the Central Eastern Atlantic Waters



by

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Horse mackerel is of major importance in the Soviet fisheries in the Central Eastern Atlantic. The species has been regularly fished since 1962. Commercial concentrations are mostly found in the area between 33°N and 14°N.

Horse mackerel keep generally within the depth range of 10 m to 300 m. Near-bottom temperatures range from 13°C to 16°C. The fishery for horse mackerel is carried out practically all the year round. The bulk of the catches comprises 2-5 years old individuals.

Biological data on horse mackerel are obtained annually by research vessels of AtlantNIRO.

T. trachurus spawning occurs over separate parts of the shelf, the most dense pre-spawning and spawning concentrations are observed from 14°N to 24°N. Peak spawning occurs in the vicinity of Cape Blanc (19°N - 24°N), Saint Louis (16°N - 18°30'N), and Cape Verde (14°N - 15°N). Spawning takes place from October to April.

Cape Blanc is the main habitat of the young T. trachurus, characterised by the availability of high plankton biomass. The rich feeding grounds provide an increased rate of growth and maturity.

Pre-spawning horse mackerel make up dense concentrations, effectively exploited by the fleet. The stability of these concentrations is closely connected with the condition of the gonads. In the post-spawning period, when individuals in maturity stages VI, II and III predominate, the catches decline. This is due to intensive fattening and dispersal of the fish over a vast area in search of feeding grounds.

Fishery in the northern parts of the shelf (Agadir-Rabat) and in the Cape Bojador area (25°N) is based upon horse mackerel of the age groups 4 and 5.

The largest horse mackerel are found in the area of Cape Verde - Saint Louis, where the bulk of the catches comprises 6 year old fish. On major fishing grounds off Cape Blanc the length structure is characterised by mixing. This area is inhabited by young fish as well as by adults.

In shallow waters in that area (depth up to 40 m) 20 cm long T. trachurus can be found. Horse mackerel of nearly the same length, 21-25 cm, with a slight displacement of the length frequency peak to the right, stay within a depth range of 50 m to 200 m. Individuals of 26 cm to 30 cm are also common in depths of 225 m to 300 m.

However, such a distribution is not typical for all the areas. Considerable differences in length structure of the commercial concentrations of horse mackerel in different areas can be explained by the characteristics of water masses and hydrographical factors.

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The shelf zone of the Cape Blanc area is characterised by a higher biological productivity all the year round than the Cape Verde area, where similar zones appear in certain periods only. The young fish prefer the former areas where they are characterised by an increased growth rate and maturity.

Table 1 shows the dynamics of the length structure of the concentrations by years on the main fishing grounds (Cape Blanc, 19°-24°N; Saint Louis, 16°N - 18°30'N and Cape Verde 14°N - 15°N).

