

DISTRIBUTION AND ABUNDANCE OF SKIPJACK (KATSUWONUS PELAMIS) LARVAE IN EASTERN BRAZILIAN WATERS

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## SUMMARY

Based on data from two ichthyoplankton surveys carried out in the eastern Brazilian coast in June and November-December, 1978, the larval distribution of skipjack is discussed. Skipjack larvae were more abundant in the November-December cruise (southern hemisphere spring). They occurred mainly in stations near the margin of the continental shelf or on sea mountains. Out of 240 specimens of scombrid larvae collected in this area, skipjack larvae occupied only 10.4% (25 specimens), whereas the most abundant larvae were *Thunnus* spp. with 68.8% (165 specimens).

## RESUME

Sur la base des données obtenues par deux prospections d'ichthyoplancton menées sur la côte est du Brésil en juin et en novembre-décembre 1978, ce document traite de la distribution larvaire du listao. Les larves de cette espèce ont été plus abondantes durant la croisière de novembre-décembre (printemps de l'hémisphère sud). Elles se trouvaient surtout dans des stations en bordure de la plateforme continentale ou sur des guyots. Des

240 spécimens de larves de scombridés recueillis dans cette zone, les larves de listao ne représentaient que 10,4% (25 spécimens), le plus fort pourcentage, 68,8% (165 spécimens), revenant aux *Thunnus* spp.

## RESUMEN

Se discute la distribución de larvas del listado, basándose en datos obtenidos durante dos prospecciones sobre ictioplancton, efectuadas en la costa oriental de Brasil en Junio y Noviembre-Diciembre, 1978. Durante el crucero de Noviembre-Diciembre, se comprobó que las larvas de listado eran más abundantes (hemisferio Sur, primavera). Se encontraban situadas principalmente en lugares próximos al borde de la plataforma continental o en montes submarinos. De los 240 especímenes de larvas de escómbridos recogidos en esta zona, los de listado suponían solamente un 10.4% (25 especímenes) mientras que el 68.8% estaba compuesto por larvas de *Thunnus* spp. (165 especímenes).

#### MATERIAL AND METHODS

The ichthyoplankton surveys were conducted aboard the R/V Prof. W. Besnard from 6 to 19 June and from 28 November to 10 December, 1978 in the eastern Brazilian coast. Each cruise covered the same survey area between Corumbau (Lat. 17°S) and Cabo Frio (23°S), in which 64 sampling stations were occupied (Fig. 1). Distance between stations was 30 nautical miles. The routine Bongo net samplings were made following the method described in Matsuura (1979). All fish eggs and larvae were sorted from plankton samples, then scombrid larvae were separated. Identification of *Katsuwonus pelamis* larvae was made based on Matsumoto (1958) and Ueyanagi and Watanabe (1964). The number of larvae taken at each station was transformed into the number per 10 m<sup>2</sup> of sea surface by the following expression:

$$y = \frac{d \cdot x}{V} \cdot 10,$$

where y = number of larvae per 10 m<sup>2</sup> of sea surface, d = depth of tow in meters, V = volume of water filtered by net and x = number of larvae collected.

#### RESULTS AND DISCUSSION

The skipjack larvae were collected mainly during the November-December cruise and only one specimen was taken during June cruise. The proportion of skipjack larvae in relation to the total scombrid larvae was 10.4 % (25 specimens), the second most abundant species after *Thunnus* spp. larvae which occupied the dominant group of 68.8 % (165 specimens).

The continental shelf of the eastern Brazilian coast is narrow and its major part is approximately 30 to 40 nautical miles wide, with exception of the Abrolhos region where it extends offshore as far as 150 nautical miles from the coast, named here the Abrolhos hump of the continental shelf. The Brazil Current coming from north runs southwards along the continental slope and encounters this shallow continental shelf at lat. 17°30'S. The influence

of the Abrolhos hump on the flow of the Brazil Current is not yet well known and the occurrence of the skipjack larvae seems to have a close relation with it.

The skipjack larvae were taken mainly at stations near the margin of the continental shelf or on sea mountains (Fig. 1). Two large larval concentrations were observed: one off the northern margin of the Abrolhos hump and another along the south-eastern margin plus on the Vitória sea mountain, south of the Abrolhos hump.

Larvae of *Katsuwonus pelamis* were collected in temperatures ranging from 25.3 to 26.7 °C with mean temperature of 25.9 °C and salinities ranging from 37.0 to 37.3 ‰ with mean salinity of 37.22 ‰, typically tropical high saline waters.

The occurrence of scombrid larvae in this area was initially reported by Nishikawa *et al* (1978) studying the data collected by the R/V Shoyo-Maru and Shunoyo-Maru through 1956 to 1975. They found a high concentration of skipjack larvae in the 5° block (10-15°S: 35-40°W) during the January-March season. They have not made plankton sampling during winter season in Brazilian coast, but the results of our June cruise suggests that the spawning activity of skipjack is low in winter.

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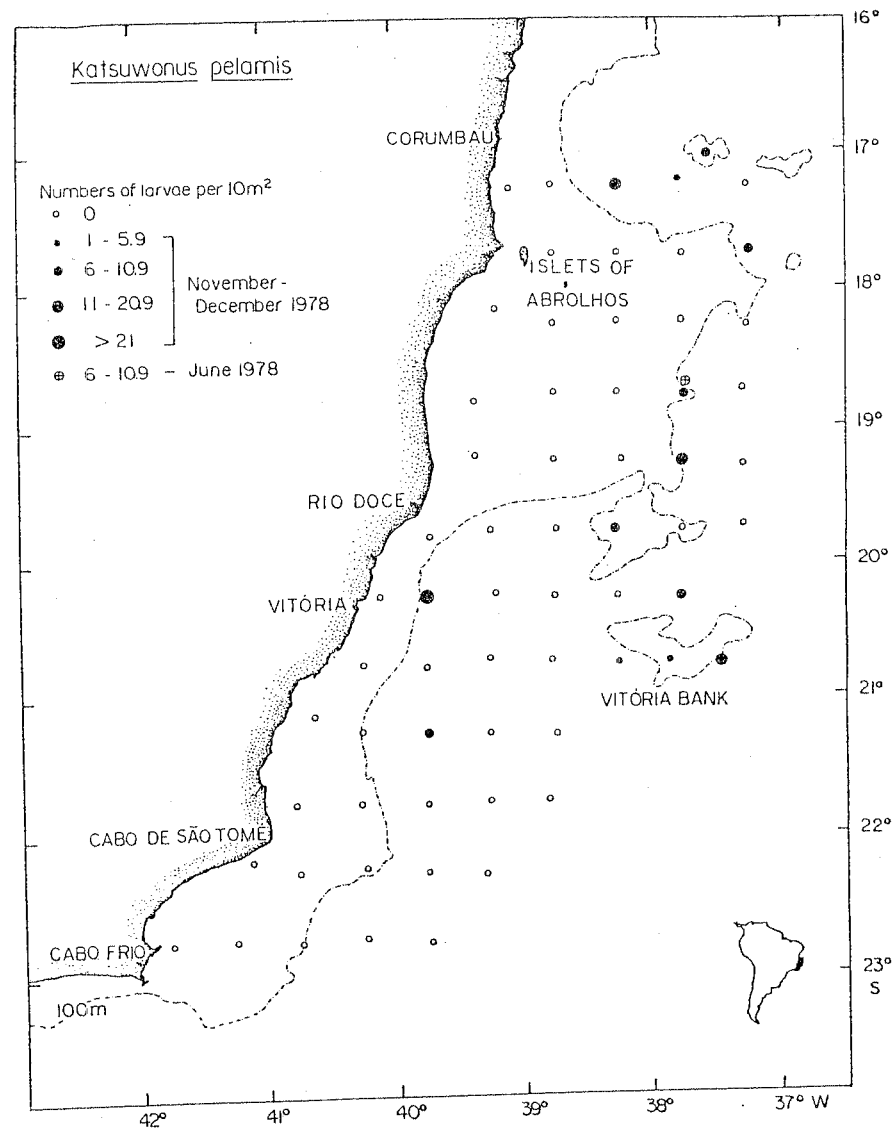


Figure 1. Distribution and abundance of *Katsuwonus pelamis* larvae taken by Bongo nets during June and November-December cruises of 1978.