STATUS OF OCEANIC TUNA LANDINGS FROM INDIAN OCEAN AT PENANG PORT, MALAYSIA

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ABSTRACT

Oceanic tuna catch showed a downward trend from 9,543 tonnes in 1990 to only 4,447 tonnes in 2001. A reduction of 60% was observed during this ten-year period and the highest catch ever recorded was at 10,941 tonne in 1992. The number of calls has reduced from 1,139 calls in 1990 to only 322 calls in 2001. The landings were mainly dominated by Taiwanese longliners, unloading their catch only at Penang port. In 2001, 127 tuna longliners of several different nationalities have unloaded tuna catches from the eastern Indian Ocean. Out of this, 120 (95%) were Taiwanese longliners, followed by Indonesian and Bolivian longliners (2 longliners each - 3%) and Chinese, Japanese and Honduran (1 longliner each - 2%). A marked seasonal pattern was noted for the tuna landings at Penang port with highest catch and number of calls was observed during the northeast monsoon (September-March) and the reverse was true during other months (May-August). More than 50% of the landings were yellowfin, followed by bigeye (30-40%) and 10% others (marlins, barracudas). Bigger size of bigeye and skipjack (averaging 50 kg) were caught between October and April but smaller size, during other months (averaging 30 kg).

INTRODUCTION

Indian Ocean is a 'no-one nation' in the high seas and it extends from latitude 20°N to 65°S and from longitude 30°E to 150°E. The ocean is the third largest ocean, after the Pacific and Atlantic Ocean, covering about 20% of the earth's water surface. The Indian Ocean is noted for high tuna abundance since the early 1960's and the area is responsible for 20% of the world tuna catches in 1998. It is the second largest proportion of principal tuna market in the world after Pacific Ocean, which contributed 67% of world tuna catches in 1998 (FAO, 1998). The catch from Indian Ocean is 30 to 85% higher than the catch of tuna landed from the Atlantic Ocean. Total tuna and tuna-like species production in 1998 amounted to more than 5.5 Million tonnes and this account for 6% of the world marines capture fisheries production.

Penang port was noted to be one of the busiest ports that dealt with transhipment of tuna from the Indian Ocean in the early 1960's. Unloading of oceanic tuna from the Indian Ocean has been carried out and this also created down-stream activities that bring revenue to the Penang state. In 1974, Taiwanese longliners unloaded 12,000 tonnes of frozen tuna for transhipment to major tuna markets such as Japan. But after some social problems at port, vessel restrictions were introduced which were blamed for the reduction in transhipment in the late 1970's. There was also number of changes in the international trade of tuna, which also have an adverse effect on the development of Penang as transhipment port. Due to this, Japanese vessels were not permitted to tranship their catch and this is the reason why Japanese longliners operating in the Indian Ocean did not use Penang as transhipment port. Instead most of these Taiwanese and Japanese longliners moved to Singapore as the next stop for transhipment of tuna. These restrictions have now been modified in the early 1980's especially after few interventions made by Penang State that allow Penang port to be develop again as transhipment port and regain its former customers. More bunkering and storage facilities have upgraded at the port to cater for increasing demand of Taiwanese and Chinese longliners to tranship their catch. The international airport has also been up-graded to provide better air cargo services.

Fisheries Research Institute, Penang starting from October 2000 has carried out a tuna-sampling programme at Penang Port Commission (PPC), which aims to provide data on the activities of longline fleets and tuna landing for the Indian Ocean Tuna Commission. The present paper gives an update on the oceanic tuna resources landed at Penang port. This resource is currently being harvested by non-Malaysian owned longliners of Taiwanese, Chinese and Japanese. These longliners use Penang port as one of the main landing port for sashimi grade tuna and later air freighted to major tuna markets in USA, Japan or Taiwan.

MATERIALS AND METHODS

Sources of data

The basic data used in the analysis of the status of tuna and tuna-like resources from the Indian Ocean was obtained from Penang State Office of Fisheries Development Authority (*Lembaga Kemajuan Ikan Malaysia* - LKIM). All tuna longliners are required to declare their catch to customs and LKIM prior to their landings at Penang Port. The information gathered includes estimation of the amount of

landings, date of arrival, name of processing plants and vessel registration number.

Direct recording was also performed on four companies, namely, Qi Xiang Sdn. Bhd., Tokai Marine and Trading Sdn. Bhd., Marinevest Sdn. Bhd. and Juara Samudera Sdn. Bhd. that are presently involved in tuna landings and packaging at PPC.

Sources of fisheries related information

Determination of fishing grounds and fishing effort were also based on regular verbal interviews with crew members, boat skippers and fish handlers at port. Related information on registered fishing vessels that unload tuna at Penang port was obtained Penang State Fisheries Office. The information includes Owner name, Country of origin, Address, Port of call, Vessel size, Engine size, Storage capacity, Gear, Number of crews and Nationalities.

Tuna Sampling Programme

Size-frequency information for fish caught by tuna longliners and other secondary data such as number of calls, vessel origin, area of fishing and fishing effort data (e.g. number of fishing days, number of hooks) were obtained from tuna sampling programme initiated by Indian Ocean Tuna Commission (IOTC) at Penang port. The sampling was carried on regular basis and covers at least 30% of the total landings in Penang.

RESULTS AND DISCUSSION

Types of vessel and nationalities

In 2001, 127 tuna longliners of several different nationalities have unloaded tuna catches from eastern Indian Ocean at Penang port. Out of this, 120 (95%) are Taiwanese longliners, followed by Indonesian and Bolivian longliners (2 longliners each - 3%) and Chinese, Japanese and Honduran (1 longliner each - 2%). The longliners that carry the flags of Indonesia, Bolivia and Honduras are operated by Taiwanese skippers. These longliners are probably registered in the countries or re-flagged their longliners as an act of following the regulations imposed on them. Total number of calls made from these vessels in 2001 at Penang port was 322 calls. These longliners with size ranging from 44 to 119 GRT are operating 3 - 4 weeks at sea.

The hulls of Taiwanese longliners were all made of fibreglass, of 44-100 GRT and horsepower of 160-800 HP. As for the hull of Chinese longliners, majority of the vessels are made of steel with boat size of 49-119 GRT and horsepower of 198-500 HP. Monofilament lines were used and the number of hooks ranged from 600 to 1,500, depending on the size of boat and the fishing condition. Number of crewmember for each vessel varies from 5 to 10 and majority of the crewmembers is Philippines, Indonesian and Chinese origins. The boat skippers are mostly Taiwanese (for Taiwanese longliners), Japanese (for Japanese longliners) and Chinese (for Chinese longliners).

Historical landing trend from 1990 - 2001

The landing trends of tuna caught from eastern Indian Ocean and unloaded at Penang port from 1990 to 2001 is presented in Figure 1. The catch shows a downward trend from 9,543 tonnes in 1990 to only 4,447 tonnes in 2001. A reduction of 60% was observed during this ten-year period and the highest catch ever recorded was at 10,941 tonne in 1992. Similar trend is observed in the number of calls at Penang port, which fell from 1,139 calls in 1990 to only 322 calls in 2001.

A marked seasonal pattern was noted for tuna landings at Penang port in Figure 2. The pattern is similar from year to year with highest catch and number of calls was observed during northeast monsoon (September-March) and the reverse is true during other months (May-August). From September to March, the amount of tuna unloaded at Penang port varies from 1,000-1,5000 tonne per month but during other months, less than 500 tonne per month were reported to be unloaded at Penang port. Number of calls has also reduced during May to August to less than 10 calls as compared to about 100 calls per month during the northeast monsoon. Figure 3 shows the pattern of tuna landings and number of calls at Penang port from January 2000 to December 2001. Highest catch was recorded at almost 1,000 tonnes in March 2000 and this corresponds to the highest number of calls, amounting to 100 calls at Penang port. Fewer calls were observed from March to September (averaging 10 calls per month) and the number increase from October onwards. Frequency of unloading activities at Penang port from November to March is every day but during other months, the unloading is restricted to only once a week.

Catch rates of tuna longliners at Penang Port in 2001

Tuna longliners at Penang port is divided into three categories: Taiwanese longliner (for fishing only), Chinese longliner (for fishing only) and Taiwanese longliner as carrier boat. In Figure 4, the catch rates of tuna from these categories of fishing vessels vary with Taiwanese fishing vessel unloaded 5-10 tonne/ vessel/ trip as compared to only less than 5 tonne/ vessel/ trip from the Chinese fishing longliner. This amount is insignificant if comparison is made on the amount unloaded by a carrier vessel. The Taiwanese carrier vessel unloaded 30-40 tonne per vessel of tuna during May 2000 to December 2001. The least amount of tuna unloaded by this vessel is about 12 tonne in August 2000. But during northeast monsoon, a significant amount of tuna is being unloaded by this vessel from October onwards. However, the amount of tuna unloaded from Chinese fishing vessel remains constant at around 5 tonne / vessel/ trip, irrespective of monsoon changes.

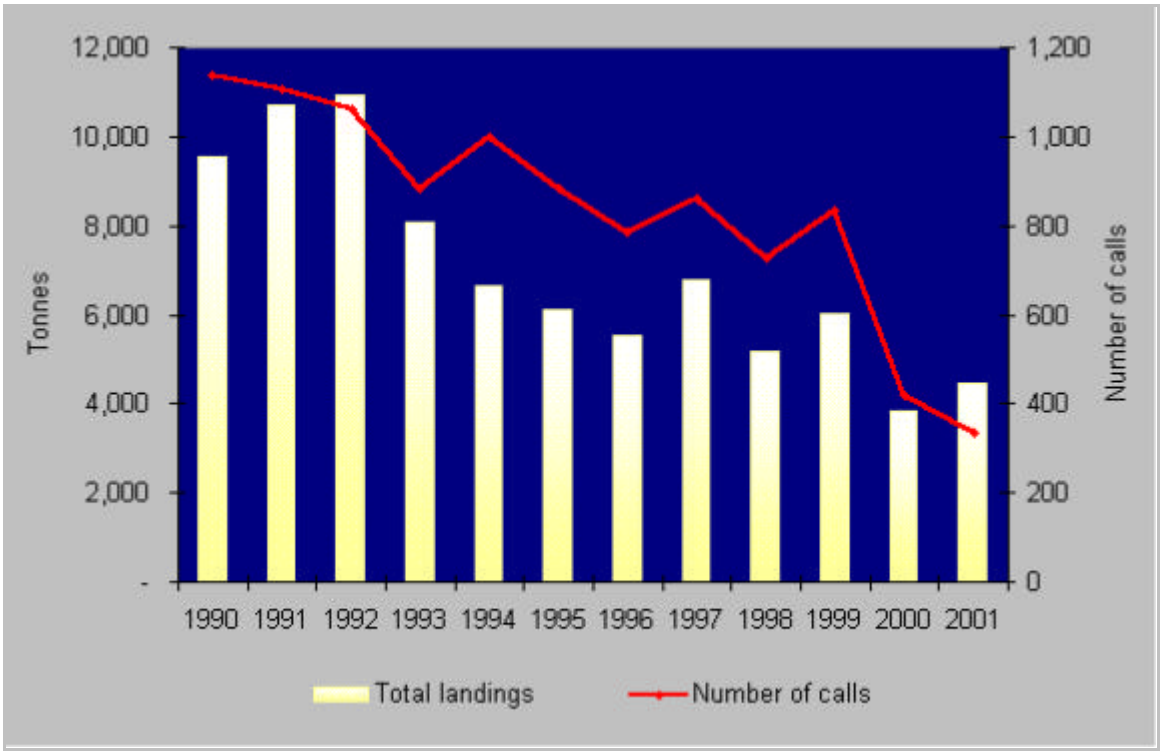

Figure 1: Landing trends of tuna longliners unloaded at Penang Port from 1990 to 2001.

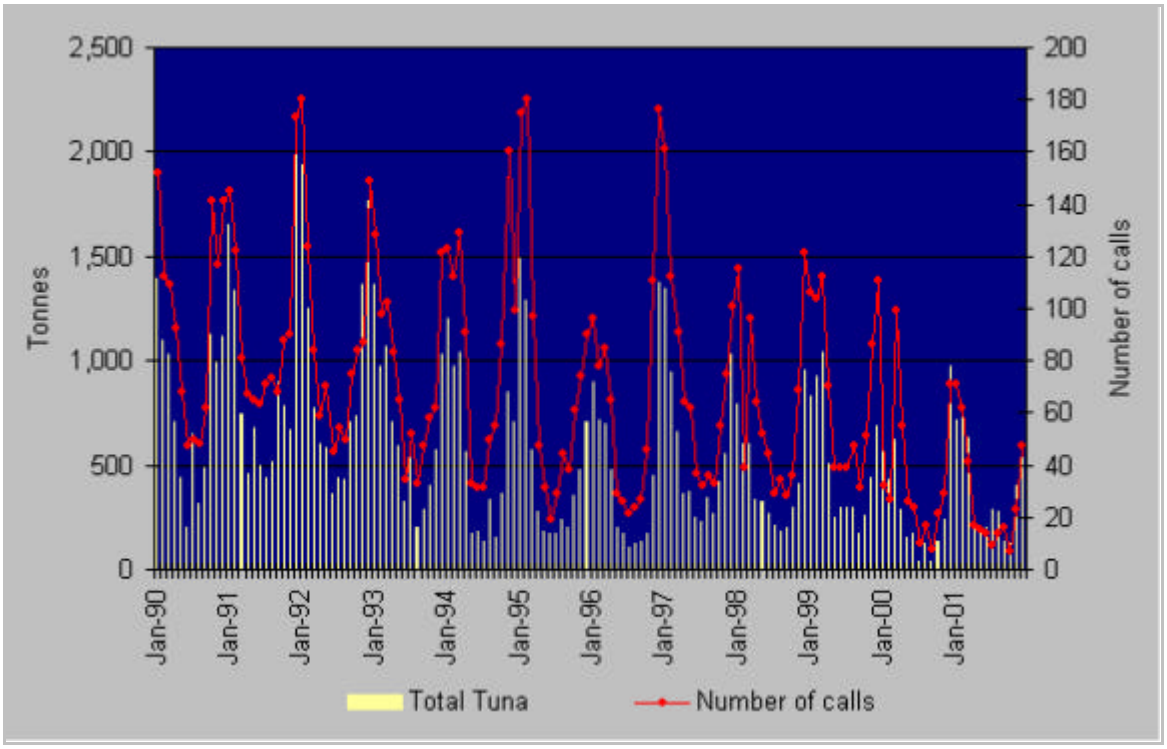

Figure 2: Monthly landing trends of tuna longliners unloaded tuna catch at Penang Port from January 1990 to December 2001.

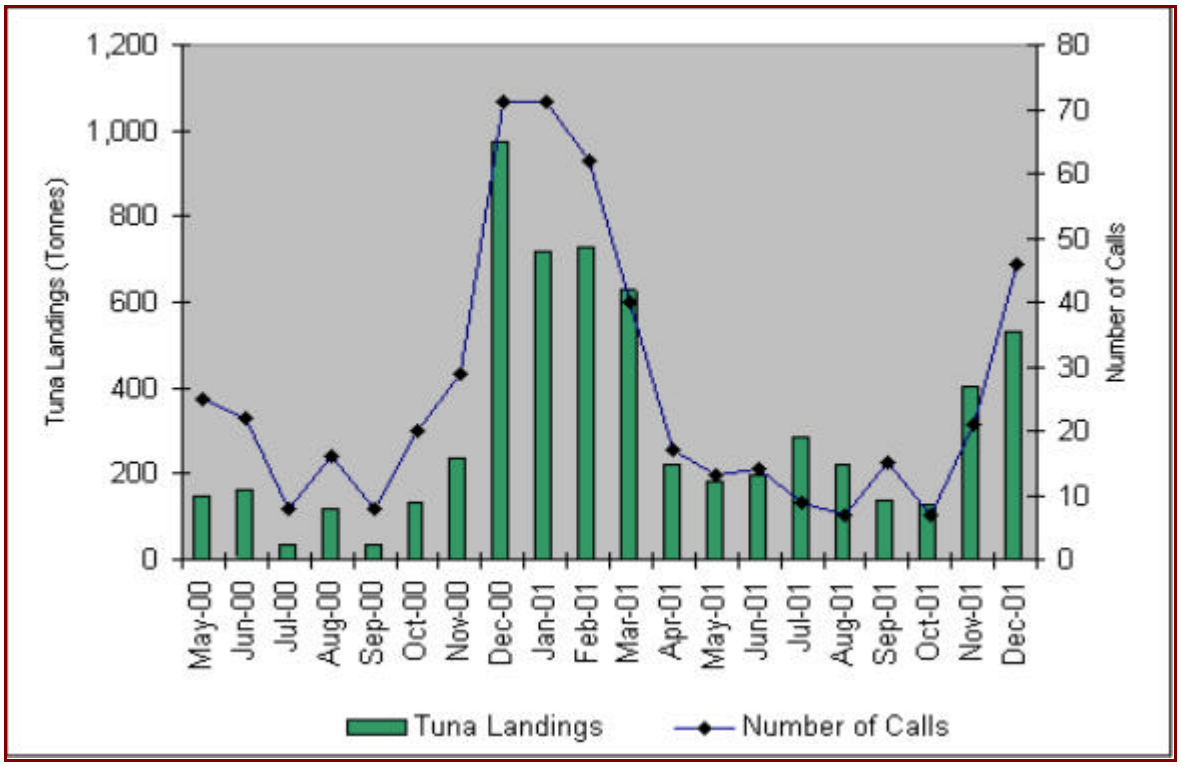

Figure 3: Total landings and number of longliners at Penang port from May 2000 to December 2001.

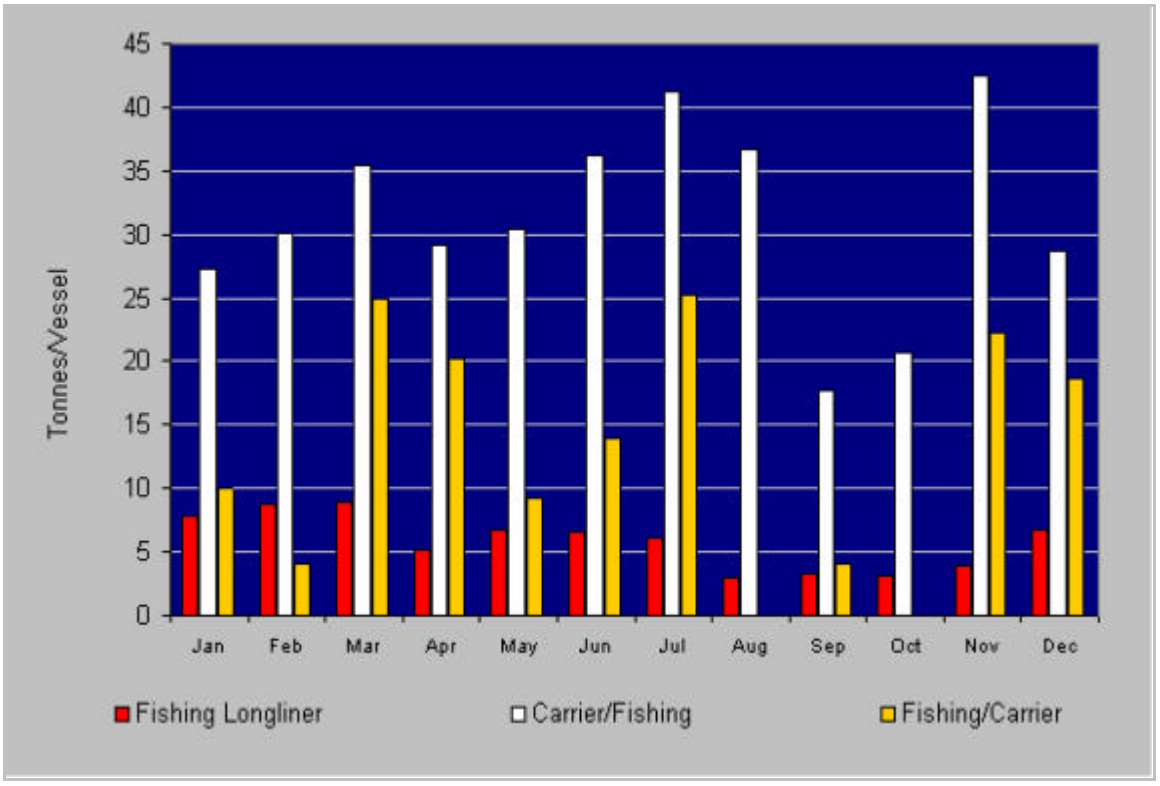

Figure 4: Catch rates (tonnes/vessel) for fishing longliner and carrier vessel at Penang port from January to December 2001.

Landings by species and size

Two species of tuna are commonly being unloaded by tuna longliner at Penang port. The species are yellowfin tuna (*Thunnus albacares*) and bigeye tuna (*Thunnus obesus*). The species composition of the catches of the tuna longliners from November 1999 to May 2001 is shown in Figure 5. The percentage composition of catches from these longliners operating in eastern Indian Ocean is shown in Figure 6. Monthly figures indicate yellowfin as the targeted species of Taiwanese longliners followed by bigeye tuna. The proportion of yellowfin varies from 51 to 54% and that of bigeye tuna, from 34 to 40%. Swordfish, marlin and others (sharks, barracudas) are being caught at insignificant amount, around 9 to 11%.

The fork length of yellowfin tuna caught by Taiwanese longliners varied from 126 to 161cm (average 95 cm FL) while the length of bigeye tuna is much bigger, averaging 140 cm FL and ranged from 95 to 184 cm FL. The weight of each yellowfin tuna caught by Taiwanese longliner ranged from 23 to 65 kg with an average of 40 kg per fish. As for the bigeye tuna, the weight of each fish caught by Taiwanese longliner varied from 16 to 100 kg with an average of 60 kg. Thus, majority of yellowfin and bigeye tuna caught by Taiwanese longliners appeared to be of big mature size.

Figure 7 shows average weight of tuna species unloaded at Penang port in 2001. The graph shows a fluctuation in the average weight of tuna with average weight of bigeye tuna heavier during January to March but lighter during June to August. This indicates that bigeye tuna caught by longliners are of smaller size from June to August but bigger during the following months until November. During this month, the average weight of bigeye tuna is the lightest throughout this year. As for yellowfin tuna, average weight of the fish is higher from January to April but reduces thereafter until June. From August onwards, the average weight of yellowfin caught by tuna longliner is increasing. This may indicate that the size of yellowfin tuna being caught by tuna longliners from August are mostly of bigger sized fishes.

CONCLUSION

Oceanic tuna landings at Penang port is mainly dominated by Taiwanese longliners. A reduction of 60% of landings at Penang port was noted between 1990 and 2001 with highest catch ever recorded at around 10,941 tonne in 1992. A marked seasonal pattern was noted with highest catch and number of calls during the northeast monsoon (September-March) and the reverse was true during other months (May-August). More than 50% of the landings were yellowfin, followed by bigeye (30-40%) and 10% others (marlins, barracudas). Bigger size of bigeye and skipjack (averaging 50 kg) were caught between October and April but smaller size, during other months (averaging 30 kg).

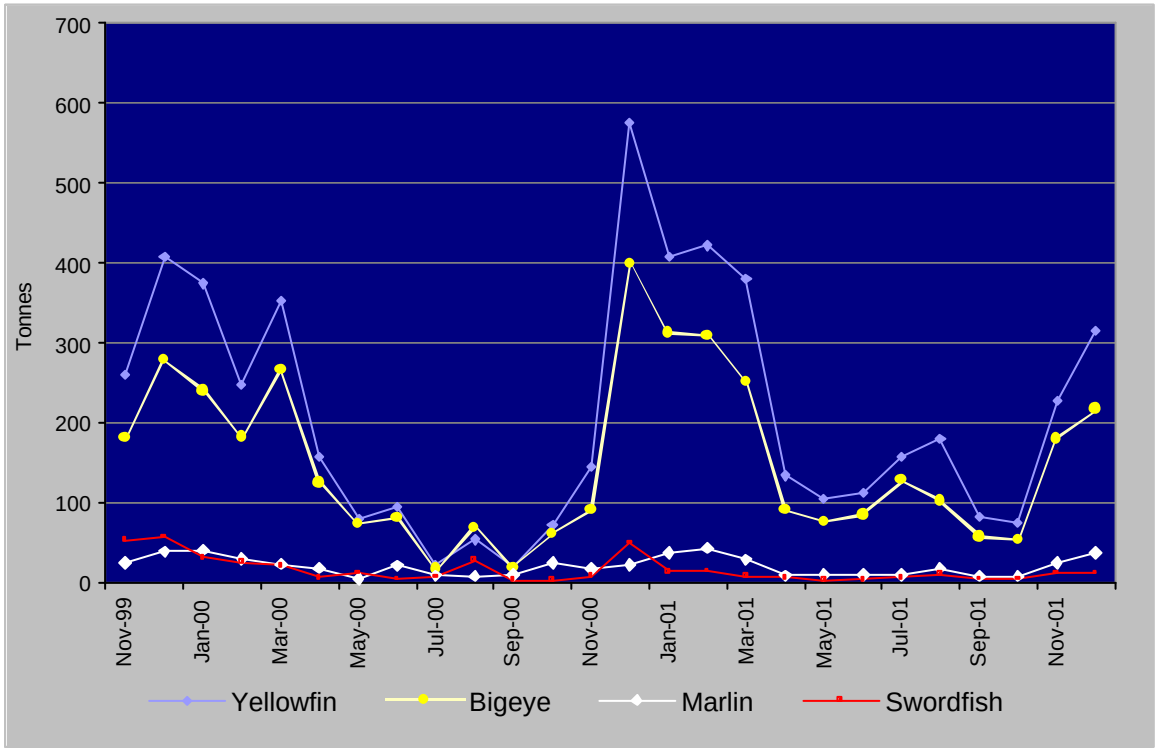

Figure 5: Species composition of catches from longliners operating in eastern Indian Ocean.

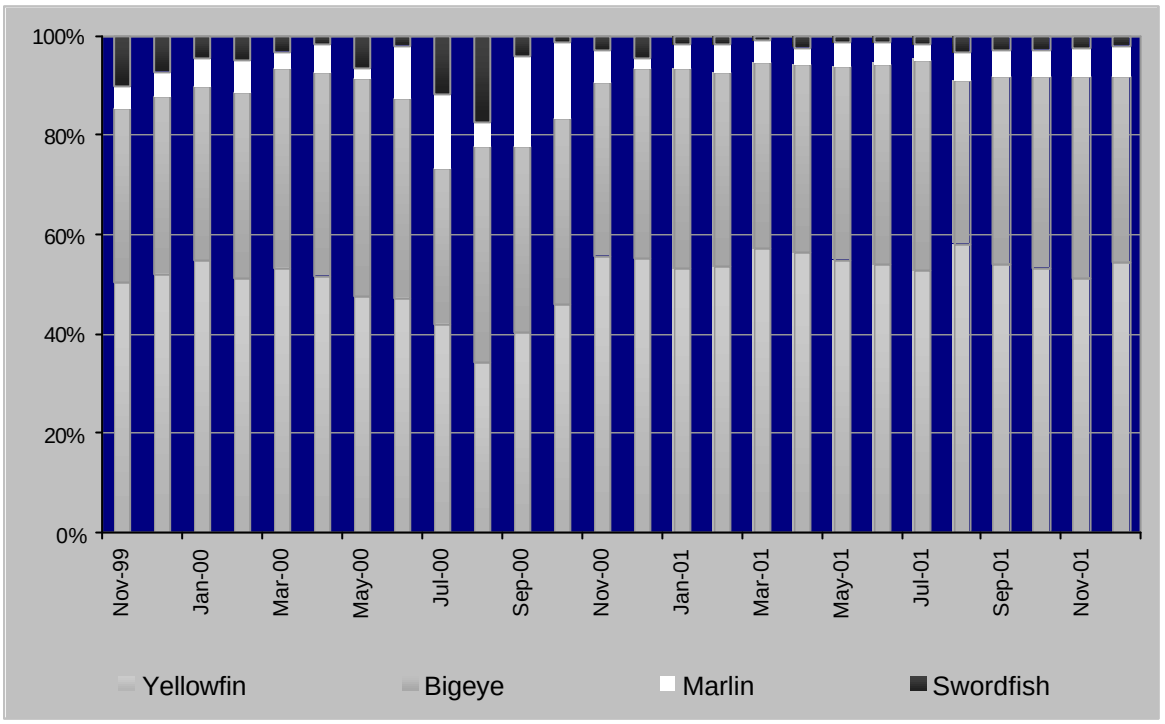

Figure 6: Percentage composition of catches from longliners operating in eastern Indian Ocean.

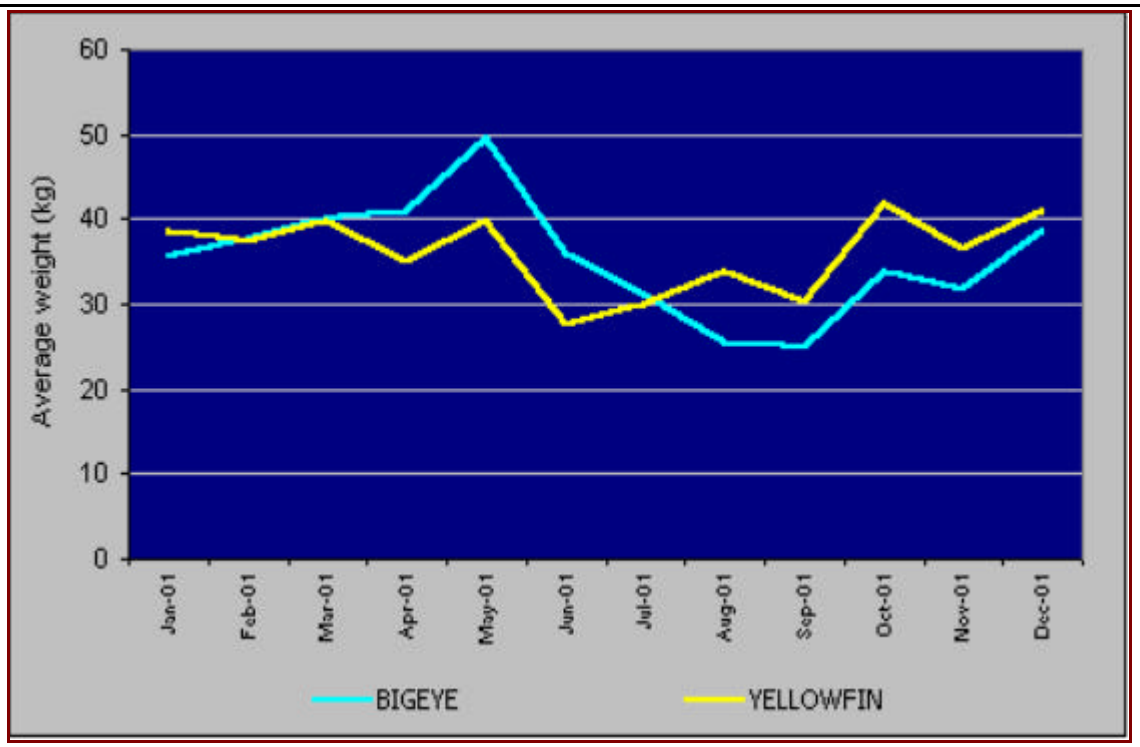

Figure 7: Average weight of tuna by species unloaded at Penang Port in 2001.