

## Annexure 2

### TUNA FISHERY IN THE WEST COAST OF PENINSULAR MALAYSIA

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#### 1. Introduction

The tuna fishery on the west coast of Peninsular Malaysia is not as important as that on the east coast. Tuna landed on the west coast made up only 2% of the total pelagic fish landed in 1983. The tuna landings on the west coast were of the order of 2,600 t in 1983 and the landings on the east coast were 16,157 t. The annual tuna landings have been fairly constant, varying between 1,000 t and 2,600 t from 1970 to 1983, except for the peak landing of 4,700 t in 1980, as shown in Figure 1.

#### 2. Fishing gear

The principal gear for catching tuna on the west coast of Peninsular Malaysia is the purse seine. The other gears that catch tuna are gillnets and lines. The purse seine accounted for more than 80% of the tuna landings, although tuna is not the target species of the purse seine fishery — tuna is not as lucrative as other pelagic species. Gillnets landed less than 15% of the tuna, lines landed 5%, and trawlers landed a negligible portion. Table 1 shows the landings of tunas on the west coast by gear type.

Tuna species are caught with other pelagic species such as *Rastrelligerkanagurta*, *R. brachysoma*, *Decapterus maruadsilrusselli* and *D. macrosoma*, which constitute the bulk of the catch. Purse seining includes both luring purse seine and the hunting type purse seine. The mesh size of the net is 25 mm, length 600 m and depth 90 m.

#### 3. Tuna species

There are three main tuna species landed on the west coast: longtail tuna (*Jhunnustonggol*) which forms the major species landed (about 60%); eastern little tuna (*Euthynnus affinis*), 30%; and friqate tuna (*Auxis thazard*), 10%. Some species that were landed occasionally were skipjack tuna (*Katsuwonus pelamis*) and bullet tuna (*Auxis rochei*).

#### 4. Fishing grounds

Figure 2 shows the main fishing ground of the purse seine fishery. The purse seiners operate in waters 20 km from shore, at a depth of 30 m. In the northern part of Peninsular Malaysia, the main purse seine fishing ground is in the waters south of I-angkawi island and areas near Penang Island. Another major fishing ground for these purse seiners is in the northern part of Pangkor Island and around Jarak Island. The number of purse seiners operating in waters off the southern part of the west coast of Peninsular Malaysia is negligible, and this may be due to limited fishing grounds in the international shipping lane. The fishing ground of the gillnetters is along the coast, in an area less than 20 km from the shore, off Perak, Selangor and Johor states.

## 5. Monthly catch

As shown in Figure 3, tuna species were caught all the year round. This figure shows the monthly catches of tuna from the landing place statistical survey for purse seines, in 1983. These data were collected from the receipts of fish transactions. It may be observed that there are two peaks in the landings, one peak from February to May and another peak from July to September.

## 6. Landing by station

There are five major landing sites on the west coast of Peninsular Malaysia. The State of Perlis in the north landed 435 t of tunas in 1983 and the main landing site is Kuala Perlis. In Kedah State, 334 t of tuna species were landed in 1983 and the main landing site is Kuala Kedah. The landing of tunas in Penang island in 1983 was 76 t and the landing site is Teluk Bahang. In the south, below the State of Penang, is Pulau Pangkor in the State of Perak; the tuna landing was the highest in 1983, when 1,733 t were landed. Further south, in the State of Selangor the tuna landing is insignificant. Figure 2 shows the major landing sites for tuna.

## 7. Stock assessment

The data available for the assessment of the tuna stocks is obtained mainly from annual catch statistics. The assessment is also based on the purse seine as a standard gear. Figure 4 shows the results of applying Schaeffer's production model and Table 2 shows the catch and effort data used. It may be observed that the maximum sustainable yield was estimated at 2,706t and the optimum effort at 381 units of purse seiners.

## 8. Conclusion

The collection of data on small tunas is far from satisfactory on the west coast of Peninsular Malaysia. The general lack of detailed information on small tuna landings by species make it impossible to estimate potential yield by species. Biological studies are important for stock assessment of tuna species. Due to insufficient stress on tuna studies on the west coast, little useful information regarding these species can be gathered for management purposes.

## 9. References

- BOBP, 1985. Mackerels in the Malacca Straits, Marine Fishery Resources Management. BOBP/WP/30
- IPTP, 1985. Report on the expert consultation on the stock assessment of tunas in the Indian Ocean.
- SCSP, 1978. Report of the workshop on the biology and resources of mackerel and round scads in the South China Sea, Penang, 1977.
- Southakorn et al., 1985. Tuna Resource in the west coast of Thailand.

**Table 1**  
**Landings of tuna on the west coast of Peninsular Malaysia by gear**

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Purse seine	1012.58	978.83	1524.99	920.14	1500.66	2500.30	1655.29	1494.97	2784.39	1737.45	4090.37	1683.26	1403.40	2477.91
Trawl	—	—	18.87	67.03	7.56	29.22	26.80	17.85	57.29	26.01	1.45	11.56	2.14	4.30
Gillnet	105.44	72.84	38.23	15.00	81.55	60.00	26.56	831.04	347.25	250.04	600.66	850.99	292.44	183.42
Lines	1,373.50	688.63	409.80	—	0.06	—	3.51	0.18	—	—	—	14.51	13.70	14.03
Lift net	—	—	—	—	—	4.53	—	—	—	—	8.35	13.56	1.00	—
Others	—	—	—	—	—	—	—	—	1.27	10.47	—	58.08	—	—
Total	2,491.52	1,740.30	1,991.89	1,002.17	1,589.83	2,594.05	1,712.16	2,344.04	3,190.20	2,023.97	4,700.83	2,631.96	1,712.68	2,679.66

**Table 2**  
**Catch, effort and catch per unit effort data (purse seine) of tunas on the west coast of Peninsular Malaysia**

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Total catch (tons)	1992	1002	1590	2594	1712	2344	3190	2024	4701	2632	1713	2679
Effort (boats)	233	202	198	215	178	222	223	274	276	432	438	351
CPU E (kg/boat)	8.55	4.96	8.03	12.07	9.62	10.56	14.30	7.39	17.03	6.09	3.91	7.63

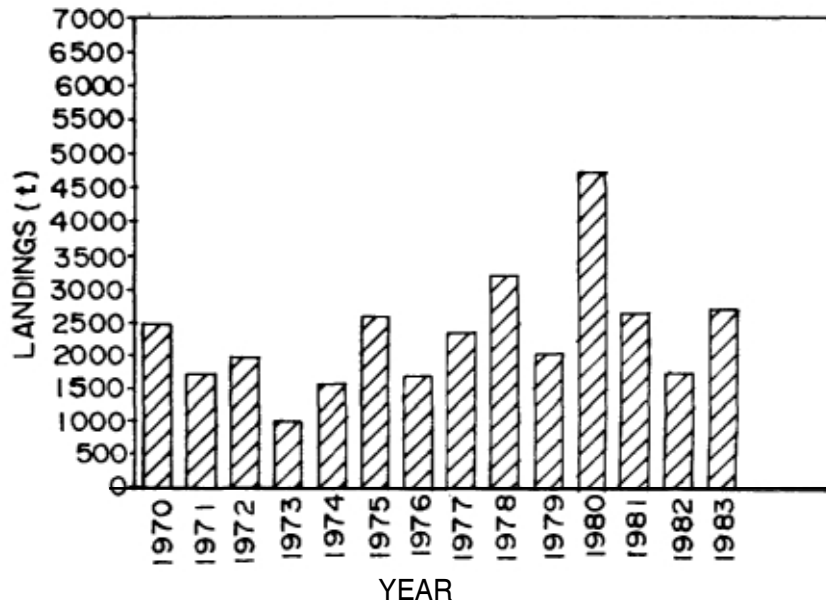


Fig. 1 Annual tuna landings in the west coast of Peninsular Malaysia 1970—1983.



Fig. 2 Purse seine fishing grounds for tuna and major landing sites.

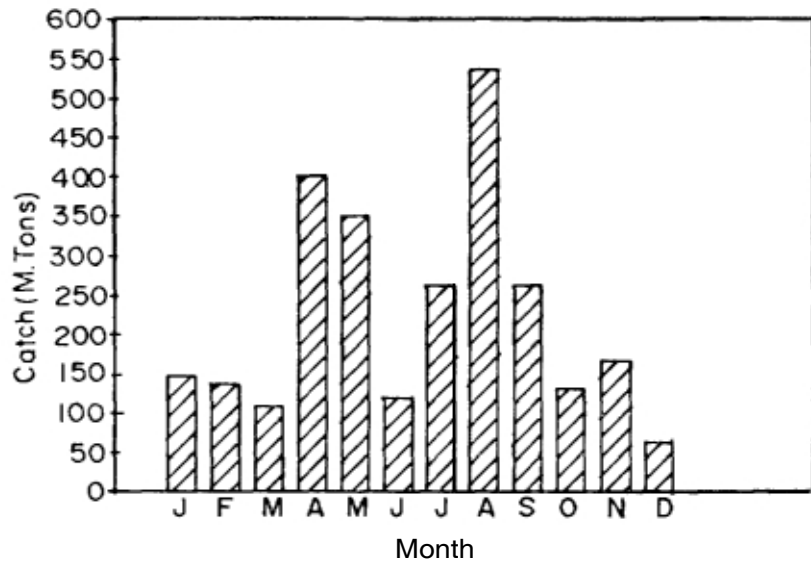


Fig. 3 Monthly purse seine landings of tuna on the west coast of Peninsular Malaysia.

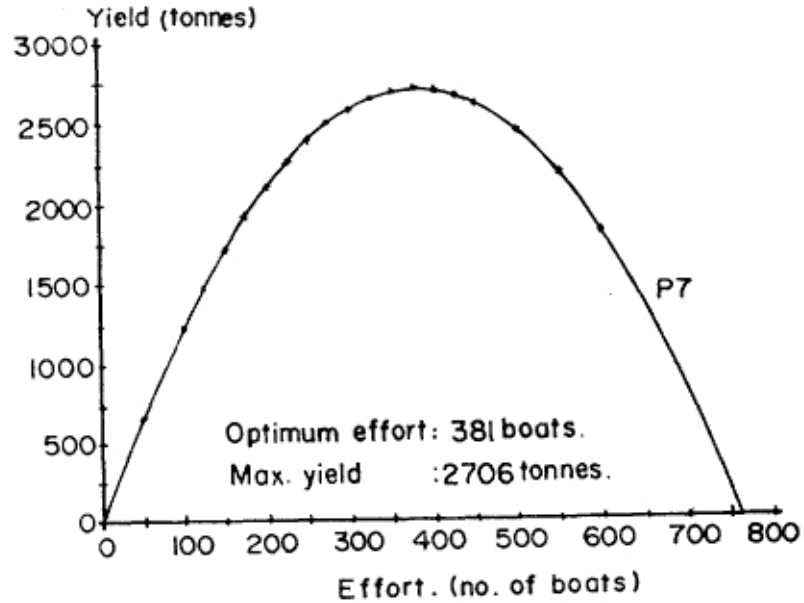


Fig. 4 Schaeffer's production model for tuna on the west coast of Peninsular Malaysia.