

# NOTES

## OBSERVATIONS ON THE PRAWN FISHERY OF THE MANDAPAM AREA

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### ABSTRACT

Trawling for prawns is carried out at night. The prawn fishery showed annual fluctuations and the average annual prawn catch was estimated to be 309.12 tonnes forming 17.78% of the trawl landings. January to May was the peak season for the fishery contributing 60.6% of the prawn catch. The average catch per unit for prawns was 27.12 kg. The fishery was chiefly supported by *Penaeus semisulcatus* (88.72%) and *Metapenaeus affinis* (11.28%).

Prawns form an important constituent of the trawl landings at Mandapam on the south-east coast of India. James and Adolf (1965) and Rao and Dorairaj (1969) have given an account of trawling operations of Indo-Norwegian Project boats conducted off Mandapam in Palk Bay and Gulf of Mannar during the period 1964-67. Nair and Nandakumar (1974) reported a new prawn ground in the Gulf of Mannar, 32 km off Chinna Ervadi, at a depth of 44 metres. Significant variations in the annual catch of prawns were noticed in the Mandapam area. The catch trends and species composition of prawns during 1973-75 are reported.

The fish landing centre at Mandapam was visited twice a week to collect the fishery data and catch samples. To estimate the monthwise catch the average weight of the catch per boat on observation day was multiplied by the number of units in operation on that day; the total catch on observation days was then determined and raised to the month based on the total number of actual fishing days to get the monthly catch. Since no information was available on the number or duration of hauls, the catch per unit effort (c.p.u.e.) is expressed in terms of catch per boat per day. The weight of the individual species in the random samples of the catch was taken and raised to the total catch on the observation day and then the month-wise species composition of the prawn catch was calculated.

The mechanised trawlers operating are medium sized vessels 9.14-9.75 m in length fitted with engines between 36 and 48 H.P. The prawn fishing is being carried out during night using otter trawl. The boats make only single-day trips,

leaving for fishing at about 15.00 hours and returning to the landing centre the next day morning around 7.00 hours. Fishing is carried out between 18.30 and 04.00 hours. The trawl nets used by different boats vary in length depending on the H. P. of the engines. The average measurement of the nets are: (1) wings 8.50 metres (50 mm mesh); (2) belly 14.22 metres (35 mm mesh) and (3) cod end 6.26 metres (26 mm mesh). The exploited area extends from longitude 79°E to 79°40'E and latitude 9°20'N to 10°N in Palk Bay and from longitude 78°33'E to 79°30'E and latitude 8°50'N to 9°15'N in Gulf of Mannar. Generally fishing extends from April to October in Palk Bay. When the north-east monsoon sets in, the Palk Bay becomes rough due to squally weather and the fishing is then shifted to Gulf of Mannar from November to March. The depth where fishing is conducted ranges from 7 to 13 m in the Palk Bay and from 7 to 44 m in the Gulf of Mannar.

The annual number of fishing units operated, the total fish catch, prawn catch and its percentage in the total catch and the c.p.u.e. are:

	<i>Number of units operated</i>	<i>Total catch in kg.</i>	<i>Catch of prawns in kg</i>	<i>Percentage of prawns in total catch</i>	<i>c.p.u.e. of prawns in kg</i>
1973	10,644	13,90,667	2,93,161	21.08	27.54
1974	10,212	18,12,382	2,51,128	13.86	24.59
1975	13,338	20,12,995	3,83,082	19.04	28.72

The total prawn landings for the period January 1973 to December 1975 amounted to 927.37 tonnes with average annual landings of 309.12 tonnes. The average percentage of prawns in the trawl catch and the average c.p.u.e. were higher in 1975 than in the other two years. The month-wise details of the fishing units operated, the prawn catch and c.p.u.e. are shown in Fig. 1. January to May period was the peak season for prawn fishery. The total prawn landings of these five months in the annual catch constituted 61.71% in 1973; 53.73% in 1974 and 64.26% in 1975, the average percentage for 1973-75 being 60.6. The highest catch (62.24 tonnes) was observed in February 1975 whereas the maximum c.p.u.e. (51.18 kg) was in January, 1973.

In the Palk Bay, May-September is the peak fishing season for silver bellies when they form a high percentage in the trawler catches (Venkataraman and Badrudeen 1974). The trawl fishing for silver-bellies is carried out in the day time during this period which fetches a good return. This would perhaps explain the decline in the number of units that operate in the nights during June-August.

Only the penaeids contributed to the prawn fishery of Mandapam. Among them, *Penaeus semisulcatus* and *Metapenaeus affinis* were commercially important. The former was the predominant species in the Palk Bay as well as in the Gulf of Mannar contributing 88.72% of the prawn catch during 1973-75. Though it occurred throughout the year the principal season was January to June, *M. affinis* occurred mainly in the Palk Bay from January to May forming 11.28% (Fig. 2). A number of other species *P. indicus*, *P. merguensis*, *P. monodon*, *P. canaliculatus*, *M. monoceros*, *M. dobsoni*, *Parapenaeopsis uncta*, *P. stylifera*, *P. cornutus*, *P. maxillipedo*, *P. tenella*, *Metapenaeopsis stridulans* and *Trachypenaeus pescadorensis* occurred sporadically which were not important from the fishery point of view.

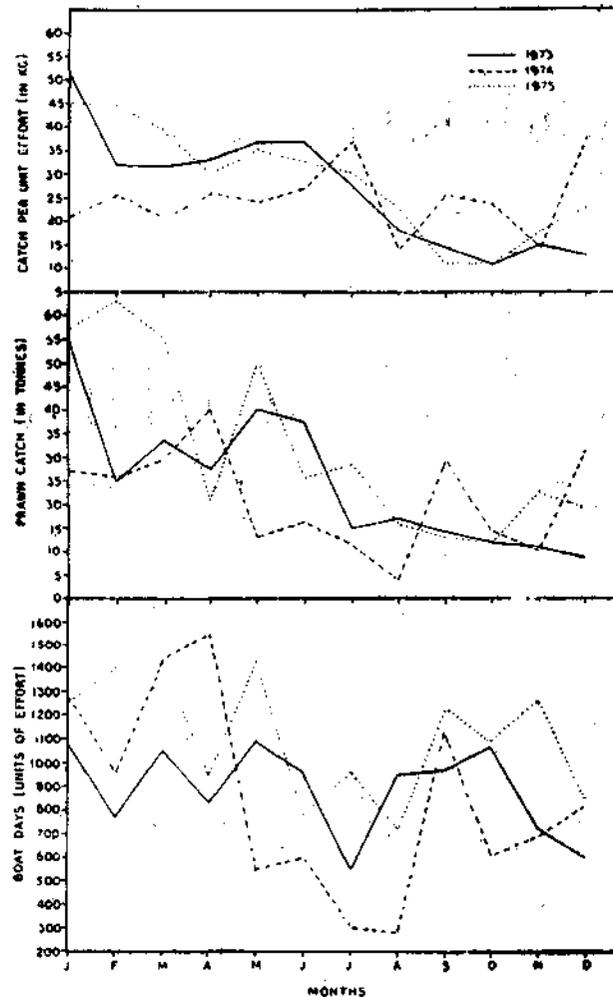


FIG. 1. Monthly fishing effort, the prawn catch and catch per unit effort during 1973-75.

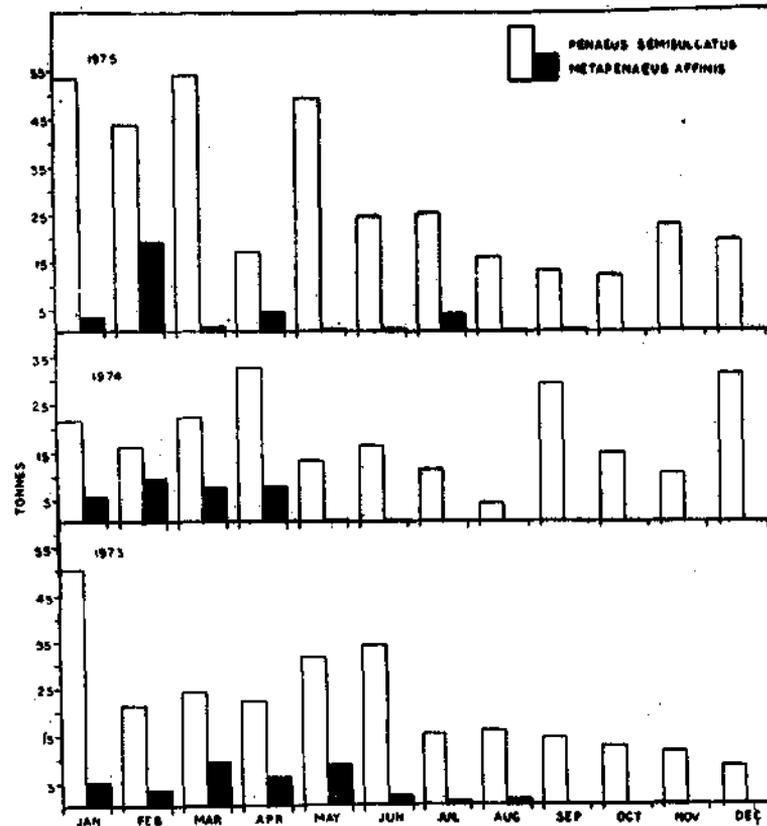


FIG. 2. Month-wise catch composition of prawns in the trawler catches landed at Mandapam during 1973-75.

The prawn fishery, unique as it was, predominated by a single species *P. semisulcatus* throughout the year in both the Palk Bay and the Gulf of Mannar regions. The fishery for *M. affinis* was seasonal and restricted to the Palk Bay. On the other hand, James and Adolf (1965) observed that *P. indicus* and *P. semisulcatus* were the most common species in the Gulf of Mannar whereas in the Palk Bay it was *M. affinis*.

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