ON THE PRAWN FISHERY BY TRAWLERS OFF PURAKAD, SW COAST, DURING 1972-76.

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ABSTRACT

The total catches indicated that the prawn fishery off Purakad was on a steadily declining trend from 1972, except for 1974, the total catch of over 2000 t in 1972 declining to less than 200 t in 1976. Though quantitatively all the species were heavily suffering the decline, with the relative proportion more steeply declining, from 29% in 72 to 6% in 76, *P. indicus* seems to be the species that was most affected; and *M. dobsoni,* increasing from 52% in 72 to 72% in 76, the least.

Purakad, a few miles south of Alleppey on the SW coast, is a very important centre of traditional fisheries, particularly during the SW monsoon when generally the mudbanks are formed (George 1961, Kartha 1984). This is also a major base for a large number of small- and medium-size trawlers fishing for prawns all over the year except during the SW monsoon, when fishing by mechanized vessels is prohibited in the area. The mechanized trawling was started in this area during late 1960s, initially with a few boats. But by the middle of the 70s, influenced by the great productivity of the grounds, the fleet grew to an overwhelming size of about 125 boats regularly trawling for prawns in this relatively small area, causing thereby a great impact on the resource.

The boats, powered by 10-40 hp engines, were based at Purakad, but at times some of them landed their catches at Thottapally. The gear in use was the common shrimp trawl with 18.5 m foot rope and with a codend mesh size of 20-25 mm. The trawling grounds, generally concentrated at the 20-25 m depth range, extended 4 to 6 km south-north between Thottappally and Purakkad. The fishing season usually started in October, after the inclement SW monsoon, and went on till about May. The boats were usually engaged in one-day trips, leaving the base by morning and returning by evening. The number of hauls used to vary between 4 and 6 per day, each haul covering about li h.

Regular weekly observations were made and samples were collected for fishery and biological studies. The data regarding the catoh and effort were collected from the landing centre and the monthly values were derived by computations. The catch rate was calculated in terms of catch per hour of trawling based on the estimated catch and effort data.

Fishery: During the first part of the fishing season, just after the SW monsoon, the trawling used to be confined within the 10-20m ground, about 10-15 km NW of Purakkad. As the season progressing, the trawling shifted southward and, then onward, remained concentrated in 20-40 m 15 to 20 km SW of Purakkad. During the closing phase of the season, on the onset of SW monsoon, the fishery shifted again to the shallower region (15-20 m), closer to Purakkad.

The estimated total catches of prawns for the seasons between 1972 and 1976, shown in Table 1, had a downward trend. Beginning from 2066 t in 1972,

TABLE 1. *Estimated annual matches (in t) and species composition (% age composition given in brackets) of prawns at Purakkad landed by trawlers during* 1972-76.

	1972	1973	1974	1975	1976	Average
Total prawn catch	2066.1	464.5	1057.9	326.2	188.4	820.7
%age in total marine landings	(83.3)	(53.6)	(47.1)	(44.2)	(45.6)	
M. dobsoni	1164 (56.29)	417.8 (89.95)	833 (78.74)	232.2 (71.18)	135.7 (72.03)	556.5 (67.8)
P. stylifera	272.5 (13.19)	5.9 (1.27)	191.6 (18.11)	74.7 (22.9)	41.5 (22.03)	117.2 (14.3)
P. indicus	596.1 (28.85)	40.8 (8.78)	33.3 (3.15)	19.3 (5.92)	11.2 (5.94)	140.0 (17.0)
M. affinis	27.6 (1-34)	—	—	—		5.5
M. monoceros	6.9 (0.33)					1.4

TABLE 2. *The monthwise and yearly CPUE of prawns from trawl catch off Purakkad for the period* 1972-76.

Months	1972	1973	1974	1975	1976	Average
January	14.3	3.5	20.1	16.5	6.2	12.1
February	35.2	14.4	18.7	10.1	5.5	16.8
March	47.4	7.5	26.4	5.7	4.7	18.3
April	54.6	2.7	32.8	15.4	8.3	22.8
May	43.8	15.5	3.6	—	2.5	13.1
October	12.3	6.3	3.0	9.8	—	6.3
November	33.7	18.7	2.1	11.4	—	13.2
December	31.0	36.4	2.1	11.4	—	16.2
Yearly	34.8	13.1	13.6	13.6	5.4	

catches, the landings was only 417.8 t. In 1974, however, there was a reversal, the landings rising to 833 t, which was in concurrence with a general improvement of prawn fishery all along the SW coast. But, during the following years, 1975 and 1976, the landings declined heavily, which being 232.2 t and 135.7 t, respectively. With regard to landings figures, P. *indicus* and P. *stylifera,* too, followed more or less a similar trend.

While the trends of the total catches of the three species were thus almost similarly declining, their percentage contributions had interestingly different trends. Whereas *M. dobsoni,* the most important species locally, had an increasing trend, rising from 56% in 1972 to 72% in 1976, P. *indicus* showed a trend which was steadily and steeply declining, descending from 29% in 1972 to 6% in 1976, indicating that the impact of fishing had been heavily felt by this species than by *M. dobsoni. P. stylifera,* a deepwater species, understandably kept the same trend all through the period except in 1973, when there was a slight increase. It may also be mentioned that *M. affinis* and *M. monoceros,* which had appeared in stray numbers like in any other region along the SW coast, almost disappeared from the catches after 1972.

The length-frequency distribution of *M. dobsoni* showed that the size groups 71-75 mm, 76-80 mm and 81-85 mm for males and 86-90 mm and 96-100 mm for females predominated in the catches. But, the lack of discernible modal progressions among the different months suggest that the pattern of recruitment to the fishery was irregular. However, larger individuals were common during May. Another interesting feature of the prawn fishery of Purakkad was the yield showing irregular fluctuations, a condition similar to the one recorded in Mexican shrimp fishery (Eidred et al 1961). Kurup and Rao (1974) have attributed

these fluctuations to some biological causes, such as the replenishment resulting from the irregular survival of spawners and subsequent irregular recruitment of the 0-year class.

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