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THE MARINE FISHERIES INFORMATION SERVICE: Technical and Extension Series envisages the rapid dissemination of Information on marine and brackish water fishery resources and allied data available with the Fishery Data Centre and the Research Divisions of the Institute, results of proven researches for transfer of technology to the fish farmers and industry and of other relevant information needed for Research and Development efforts in the marine fisheries sector.

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GOOD SEASON FOR PRAWNS PREDICTED OFF MADRAS*

Forecasts of the magnitude of the prawn fishery based on the index of postlarval and juvenile abundance in estuaries and backwaters have been attempted by earlier authors. Garcia and Reste (1981 *FAO Fish. Tech. Rep.* 203:129) have summarised the forecasts based on earlier stages of life cycle. They have stated that "when an attempt is made to relate shrimp catches at the sea to the abundance of one of the preceding stages of the life cycle, it seems that only migrating sub-adults can give useful short-term prediction index (about three months in advance)" With the data available from the Ennore estuary near Madras on the postlarval and juvenile abundance an attempt was made to see whether any prediction of the forthcoming fishery of the ensuing season in 1983–84 was possible.

Regular weekly collections of juveniles were made with a small drag net made of velon screen of five m length at the Ennore estuary from three stations about 1 km apart from each other the first one being near the bar mouth. During the course of this study it was found that collections from Station III was good when compared to the other two stations as far as juvenile prawns are concerned and the data collected from this station for 19 months during March,1982 to September '83 is analysed and interpreted in the present report. During day time three hauls were made roughly covering an area of 100 sq m. for each haul. The Ennore bar mouth is more or less kept open through out the year to draw coolant water for the thermal plant.

* Prepared by D. B. James and P. Thirumilu.

From Table 1 it is seen that during the period March, 1982 to September, 1983 maximum number of juveniles were collected during the months of July, 1983 (320 Nos) and August, '83 (342 nos.). During all other months on an average only 50 juveniles were collected. *Penaeus semisulcatus* started appearing by November to January period. The increased occurrence of the juveniles tend to show that the fishery for these species particularly *P. semisulcatus*, *P. indicus* and *P. monodon* will be high during the coming season from November to January period.

Table 1. *Numbers and sizes of juvenile prawns collected at Station III in Ennore estuary during* 1982–1983

Months	*Metapenaeus dobsoni*		*Metapenaeus monoceros*		*Penaeus indicus*		*Penaeus semisulcatus*		*Penaeus monodon*		Total
	No.	Size range mm	No.	Size range mm	No.	Size range mm	No.	Size range mm	No.	Size range mm	
1982											
March	2	7–18	5	12–24	1	15	1	37	—	—	9
April	1	13–22	5	13–22	1	24	—	—	—	—	7
May	10	9–21	5	11–34	1	15	—	—	—	—	16
June	9	5–16	1	24	1	13	1	17	—	—	12
July	6	7–17	19	7–20	—	—	—	—	—	—	25
August	2	9–13	42	7–25	—	—	1	17	—	—	45
September	64	7–21	10	7–28	—	—	1	15	—	—	75
October	24	7–16	14	7–15	—	—	—	—	—	—	38
November	47	8–22	1	11	—	—	—	—	4	18–30	52
December	90	7–18	12	7–19	—	—	—	—	—	—	102
1983											
January	62	8–16	2	9–12	—	—	—	—	—	—	64
February	29	8–25	15	11–36	—	—	—	—	—	—	44
March	26	8–18	7	8–46	—	—	1	35	—	—	34
April					No collection						
May	23	7–24	6	7–28	—	—	19	11–62	—	—	48
June	7	10–21	9	13–39	—	—	12	11–44	—	—	28
July	274	8–20	7	11–24	27	13–26	12	13–62	—	—	320
August	119	9–13	15	16–54	90	14–52	97	16–56	21	14–64	342
September	154	7–34	12	9–52	10	15–22	5	11–52	1	16	182

during the month of May, 1983, *P. indicus* in July 1983 and *P. monodon* in August, 1983. When twigs were encountered in the drag net more juveniles of *P. monodon* were collected.

In Table 2 date-wise collections of juveniles from May 1983 when algal bed was formed is given. It is seen that the modal size increased in all species from May to September. Also it was found that the size range of the specimens collected was more in September than in May. This rapid growth in the estuary would result in the prawns reaching marketable size

The hydrological conditions of the estuary during 1982 and 1983 indicate that in 1983 the temperature has gone up to 37.2°C in May, 1983 whereas it was only 33.1°C in May, 1982. The four degree higher temperature may be the cause for the germination of the spores of the algae. The salinity was also found to be more in 1983 from May onwards.

It is interesting to note that the occurrence of the juveniles of some species especially *P. semisulcatus* show a relationship with formation of algal bed. In 1983 with the formation of algal bed composed of

Table 2. *Details of juvenile prawns collected per haul from Ennore estuary at Station III during May-September* 1983

Date	*Metapenaeus dobsoni*		*Penaeus semi-sulcatus*		*Metapenaeus monoceros*		*Penaeus indicus*		*Penaeus monodon*		Total
	No.	Size range mm	No.	Size range mm	No.	Size range mm	No.	Size range mm	No.	Size range mm	
4-5-83	2	11-24	10	11-62	2	14-28	—	—	—	—	14
18-5-83	18	7-20	3	11-17	2	7-15	—	—	—	—	23
26-5-83	8	9-17	13	11-32	4	13-28	—	—	—	—	25
29-5-83	2	13-17	37	14-57	22	13-56	2	32-76	1	27	64
1-6-83	5	10-17	2	13-44	7	11-27	—	—	—	—	14
8-6-83	3	16-21	3	17-44	5	13-21	—	—	—	—	11
15-6-83	—	—	6	11-42	2	15-32	—	—	—	—	8
22-6-83	3	8-20	5	18-42	1	39	—	—	—	—	9
6-7-83	3	9-16	1	13	1	15	—	—	—	—	5
20-7-83	180	8-20	8	15-62	4	11-24	28	13-26	—	—	221
24-7-83	48	6-22	128	15-84	4	13-32	20	17-37	—	—	199
31-7-83	73	7-22	58	15-52	19	17-41	28	10-42	4	11-24	189
3-8-83	74	20-27	20	16-56	6	16-54	20	14-41	6	14-30	126
7-8-83	38	8-24	32	15-69	38	11-80	16	15-56	5	16-41	129
10-8-83	15	9-30	16	15-60	—	—	32	16-52	9	14-63	72
21-8-83	8	12-29	32	15-81	13	16-90	14	16-90	2	9-24	69
24-8-83	29	12-32	44	15-94	6	16-60	45	15-52	6	17-40	130
28-8-83	4	16-22	32	19-68	9	14-46	4	16-38	1	25	50
31-8-83	40	12-31	49	14-93	8	13-57	24	13-72	7	14-62	128
4-9-83	11	16-41	5	32-100	9	16-67	2	27-72	—	—	27
7-9-83	10	11-34	2	11-43	3	15-51	3	15-22	—	—	18
14-9-83	8	7-23	2	19-52	4	9-52	4	15-22	2	16-39	20
25-9-83	14	7-14	4	24-71	4	22-62	19	15-44	—	—	41
28-9-83	135	7-29	—	—	5	11-32	4	17-44	—	—	144

species of *Hypnea, padina, Chaetomorpha* etc. there was sudden spurt of *P. semisulcatus* juveniles in the month of May. Again due to heavy rain in the month of August, 1983 most of the algae was found to be dead by 4-9-83. This immediately resulted in poor collection of juveniles particularly *P. semisulcatus* which always live in association with algae. In fact the juveniles of this species is locally known as *Pachi Yera* referring to this habit. The fact of absence of algal bed formation in 1982 when there was lesser juveniles also strengthen the point of view that there is correlation between algal bed and occurrence of these prawn species.

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